PRINCIPLES OF DESIGN

BFA (F) - 104 SE1

Directorate of Distance Education

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CONTENTS

Principles of Design

BFA (F)-104 (Theory)

Objective

To families students with basic fashion terms, philosophy and basics of colour

Topic /content analysis	Objective	Method of teaching	Learning outcomes
Elements of Design: Line: types of lines, Directing, Dividing, Psychological effects of line, Optical illusion, form, texture, colour. Principles of Designing	To understand the application of line in the design and the interpretation of mood created by the line.	Lecture, PPT Presentation	How to use lines In creation of design.
Importance of Elements & Principles of Design in Apparel and Textile.	To develop a basic understanding about the different elements of design.	Lecture, PPT Presentation	Able to develop designs though elements and principle of design.
Development of motifs, designs-Structural and Decorative designs, types of layout and repeats.	To understand the development method of designs and the process of repeating pattern	Lecture, PPT Presentation	Able to develop layout for different types of designs
Fundamental & basics of color-Colour Theory (Prang Colour Chart, Munsell System)-Dimensions of Colour – Hue, Value Intensity, Tint, Shade, Tone, Colour Schemes and Harmony. Color wheel and colour schemes	To understand the basics of colour and colour scheme	Lecture, PPT Presentation	Able to develop different types of colour combinations for fabrics.
• Grey scale • Tints And Shades • Effect of the colour tones on personality of the wearer • Colour Gradation	To understand the process of converting hues in tint and shades.	Lecture, PPT Presentation	Able to understand the effects of colour on personality of wearer.

PREFACE

The Principles are concepts used to organize or arrange the structural elements of design. Principles are guidelines and fundamental ideas that every designer in the working field should follow. In fashion design, there are five important principles and then apply to both the garments basic structure and that application. They provide guidelines to combine properly the five elements of design to create always different stylishness in designs.

The elements, or principles, of visual design include Contrast, Balance, Emphasis, Movement, White Space, Proportion, Hierarchy, Repetition, Rhythm, Pattern, Unity, and Variety. These principles of design work together to create something aesthetically pleasing and optimizes the user experience.

Balance is the distribution of the visual weight of objects, colors, texture, and space. If the design was a scale, these elements should be balanced to make a design feel stable. In symmetrical balance, the elements used on one side of the design are similar to those on the other side; the sides are different but still look balanced. In radial balance, the elements are arranged around a central point and may be similar.

A line is a basic element that refers to the continuous movement of a point along a surface, such as by a pencil or brush. The edges of shapes and forms also create lines. It is the basic component of a shape drawn on paper. Lines and curves are the basic building blocks of two-dimensional shapes like a house's plan. Every line has length, thickness, and direction. There are curved, horizontal, vertical, diagonal, zigzag, wavy, parallel, dashed, and dotted lines.

Shape and form are the terms that are used inter-changeably with some differences. The term ‹form› is generally considered to apply to two-dimensional areas or shapes as well as to three-dimensional volumes or masses as ‹shape›. When lines are joined to enclose space, they result in an outline, a contour, or shape. When a two dimensional shape acquires a third dimension, it becomes a form.

Alignment is one of the most basic and important principles of design. It helps unify the elements on a page by creating a visual connection between them. Even if those elements aren't in close proximity to one another, when aligned an invisible line is created (both in your eye and in your mind) which connects them. By establishing a visual connection with something else on the page, alignment tells readers that the two elements belong to the same piece; this, in turn, creates a sharper, more organized design.

This book is an effort to familiarise the reader with the world fashion scenario. It recounts the initial years of the industry, its subsequent growth and development, and its present height as a major economic avenue for numerous countries with an incisive analysis of the current situation, and a probing elucidation of the future prospects this sector promises to fulfill, the book also lays special emphasis on the Indian fashion front. It is hoped that, with a highly insightful look into the world of fashion, this book would serve to sate the curiosity of readers fascinated by fashion technology.

ABOUT THE BOOK

Fashion is instant language. The style is a way to say who you are without having to speak. Stylishness is not standing out, but being remembered for your styles. Fashion is what you are offered four or five times a year by designers and stylish. To create designs and style every now and then designers have to work on the public's demand and new trends.

Classic and digital designers alike harness the principles of design to shape their work, building on top of the elements of design to give cohesion to their pieces. When used successfully, these principles have the ability to transform designs, both aesthetically and in terms of performance.

Every element and principle of a design—typography, colors, images, shapes, patterns, etc.—carries a visual weight. Some elements are heavy and draw the eye, while other elements are lighter. The way that these elements are laid out on a page should create a feeling of balance.

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UNIT

1

ELEMENTS OF DESIGN

STRUCTURE

1.1   Learning Objective
1.2   Introduction
1.3   Line: types of lines
1.4   Directing, Dividing, Psychological Effects of Line
1.5   Student Activity
1.6   Optical Illusion, Form, Texture, Colour
1.7   Principles of Designing
1.8   Summary
1.9   Glossary
1.10 Review Questions

1.1   LEARNING OBJECTIVE

After studying this unit you should be able to:

● Explain the meaning and definition of Principles of Design.

● Describe the Types of Lines.

● Describe the Different Element of Design: Line.

● Explain the meaning and significance of Classification of Line Concept.

● Explain the procedure of psychology of composition in logo design.

● Explain the Design Principles – Laws with Leeway.

1.2   INTRODUCTION

Classic and digital designers alike exploit the principles of design to shape their work; building on top of the elements of design to give consistency to their pieces. When used successfully, these principles have the ability to transform designs, both aesthetically and in terms of performance.

● **Unity:** Unity is a force operating within a design that gives it the appearance of oneness or resolution. This ensures no single part is more important than the other. Author of *The Elements of Graphic Design* Alex White explains, "To achieve visual unity is the main goal of graphic design. When all elements are in agreement; a design is considered unified."

Unity & Variety

Unity = Same Color
Variety = Different Sizes

Unity = Same Size
Variety = Different Colors
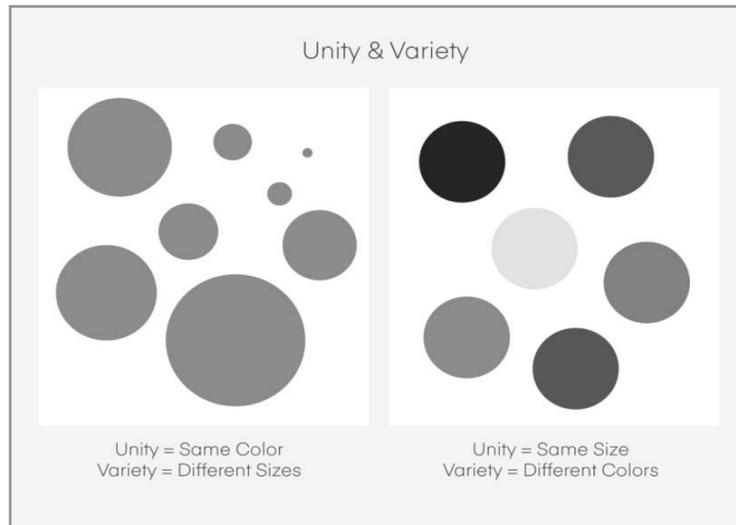
Using design elements to apply unity to your work is a strong way to bring a brand concept to life. Let's say a sports brand like Nike or Reebok has an intense "in your face" campaign. They might use big bold fonts, bright colors, and highly stylized imagery to exude intense training emotions. On the flip side, a company like Casper might use a more subdued palette with bright white tones and light, airy fonts to follow a restful night sleep.

- **Balance:** Objects in design carry weight just like in the physical world, but it's called visual weight. The visual weight of a design needs to have balance. It's like putting two objects on a see-saw: If one side is too heavy, the viewer's eye goes directly to the heavy part. If it's weighted with all things equal, the see-saw is perfectly suspended without either side touching the ground.

Balance

Balance: Symmetrical

Balance Asymmetrical
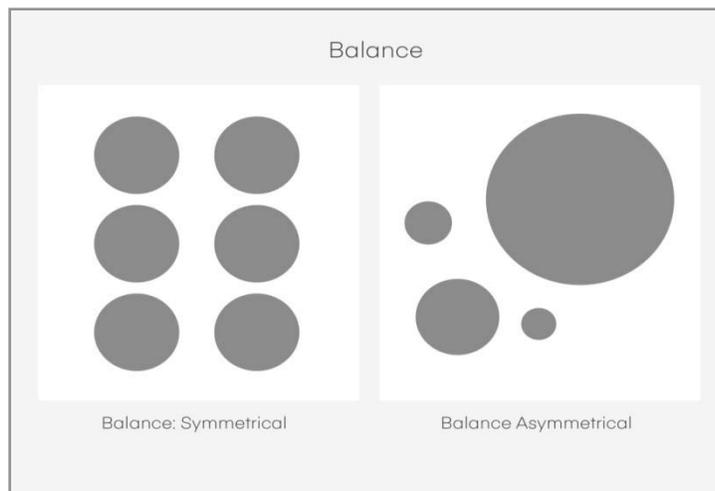
Balance can be implied by size, shape, or even contrast. While it can utilize symmetry or equality, balance can also be achieved through asymmetry. Think of asymmetry as the opposite of mirroring: Instead of seeing the reflection, you see something that evenly distributes the elements. For example, three small objects can offset the visual weight of one large object. Or a small, dark, and shaded object can offset the visual weight of a large, lighter element.

- **Hierarchy:** One of the most important principles in design, hierarchy is a way to visually rank your design elements.
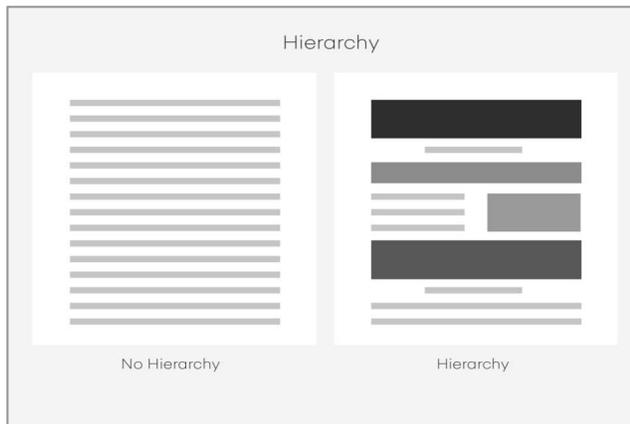
Hierarchy is not based on a design styles, but rather the order of importance. A good design leads the eye through each area in priority order. A good example is a homepage: There's usually a navigation bar and a logo, some sort of large header image, or text with a call to action. In order of importance, the logo tells the user where they are; the site navigation shows the user how to get around the site; and the call to action compels the user to do something. More often than not, the CTA is the biggest or boldest element on the page, followed by the logo and navigation. It's designed to help the user complete an action or absorb information.

The headline is the most important thing on the page so you can identify what you're reading; the intro gives you a summary of the article; and the content gives you the meat of the design principles. If we read the article from bottom to top, it wouldn't make much sense.

A good rule of thumb for hierarchy is that your most important elements should be the most prominent.

- **Contrast:** The difference between two or more objects in a design is referred to as contrast. The difference in objects could be light and dark, thin and thick, small and large, bright and dull, etc.
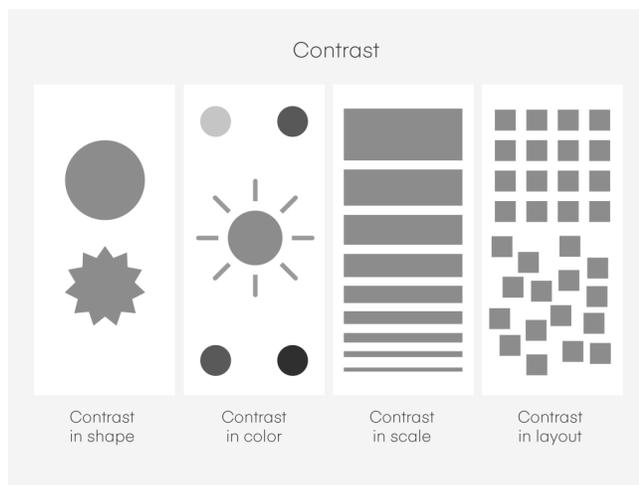
Contrast is most commonly associated with readability, legibility, and accessibility. Like hierarchy, the most important element in a design should have the most contrast. A bright blue button on a stark white background with a lot of white space is considered high contrast. If the button was almost the same color as the background or was a 1px stroke versus a fill, it would have less contrast.

A text-based design could be high contrast by using black text on a white background. To dial down the contrast, you'd use gray text on a white background. An easy reminder is to think of a black-and-white photo. If the photo has a full range of white, gray, and black, it has high contrast. If the photo only goes from a dull white to dark gray, it's a low-contrast image.

- **Emphasis:** Emphasis can be created by size, weight, position, color, shape, and style. Sometimes referred to as dominance, emphasis might seem similar to contrast, but it's not quite the same. Contrast deals with the difference between two objects, and emphasis deals with the impact of an object. To make it a little more confusing, you can use contrast to support the emphasis of an object—like placing a solid black sphere on a white background. This is high contrast with emphasis: The viewer's eye is drawn directly to the heavy shape.

Emphasis

Creating a Focal Point
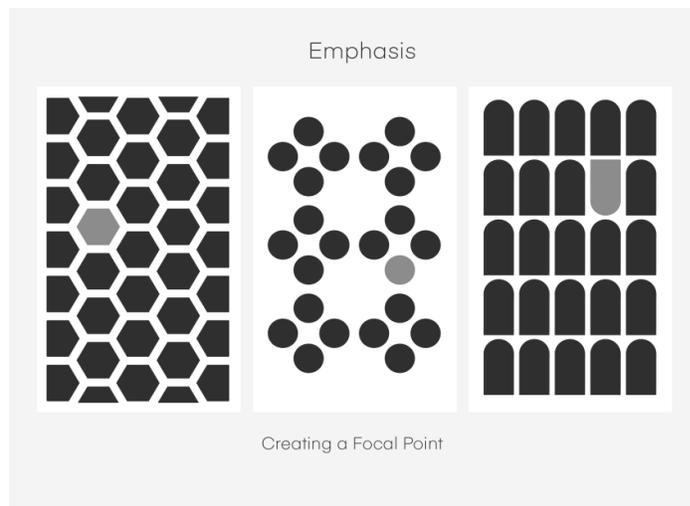
Adding emphasis to an object creates a focal point, which grabs an audience's attention. It's where you want the viewer to look first, but doesn't overpower the rest of the design (or it would be out of balance). A simple example is a long hallway or corridor, where your eye is drawn to the end of the hallway. Imagine painting a bright wall at the end: That's your focal point.

- **Scale:** Scale is the sizing of elements or a standard of measurement. It can be used in combination with other principles like emphasis to draw the viewer into a focal point, and helps us make sense of designs or imagery. If something is drawn to scale, it shows an object with accurate sizing (though it could be reduced or enlarged from its actual size). This creates a way to depict objects as larger than life, or bring a large object down to fit on a piece of paper.

Scale / Proportion

Size   Ratio   Divisions
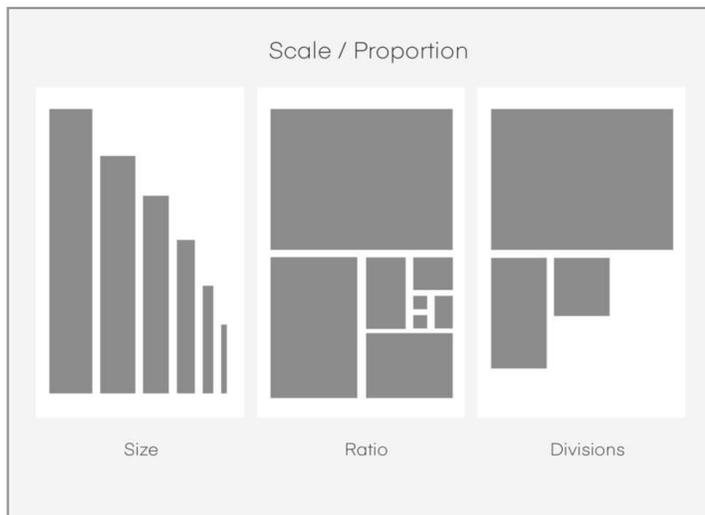
In digital design, scale can also refer to the pixel dimensions for the device you're designing for. Sometimes two to three times as dense as their non-retina counterparts, retina devices need a scaled canvas. Depending on the device, this could be 2x or 3x the amount of the display. For example: A 400px-wide box is still rendered as 400px on a retina device, but it's twice as dense. So you would design on an 800px-wide canvas because it's 2x the density of a non-retina or 1x device.

- **Repetition:** Repetition is the recurrence of a design element, commonly utilized in patterns or textures. Repetitive elements can be used in conjunction with other principles to create a design that leads a user's eye to a focal point, has continuity, or flow. A repetitive element could be repeated lines, shapes, forms, color, or even design elements.

Repetition

Repetition changes Perspective
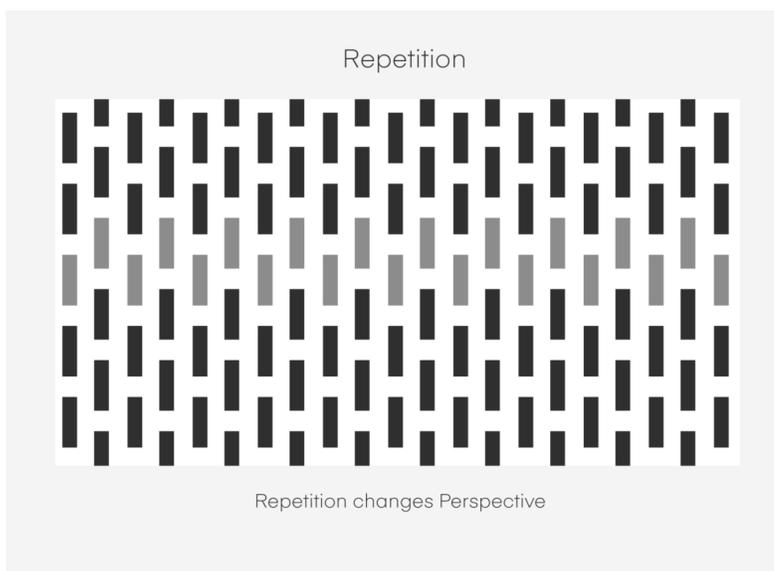
Why do the Principles of Design matter? Every piece of design work is made up of design elements and design principles. When the principles are combined and used correctly, a design commands your attention and is hard to ignore. The design guides your eye through the story, keeping you visually entertained and engaged.

1.3 LINE: TYPES OF LINES

A line is a basic element that refers to the constant movement of a point along a surface, such as by a pencil or brush. The edges of shapes and forms also create lines. It is the basic component of a shape drawn on paper. Lines and curves are the basic building blocks of two-dimensional shapes like a house's plan. Every line has length, thickness, and direction. There are curved, horizontal, vertical, diagonal, zigzag, wavy, parallel, dashed, and dotted lines.

Lines are everywhere in design, they are used to divide space, direct the user's eye, create flow, create importance and organize all design elements into form. Generally, we don't think about lines that much, but we make use of them quite often to visually communicate our objective to the user. The web is about communication, so using lines to communicate your message properly is important.

Line Elements

The first and most basic element of design is that of the line. In drawing, a line is the stroke of the pen or pencil but in graphic design, it's any two connected points. Lines are useful for dividing space and drawing the eye to a particular location. For example, think about how a magazine uses lines to separate content, headlines and side panels.

Here are a few examples of what we traditionally think of when we think of lines:
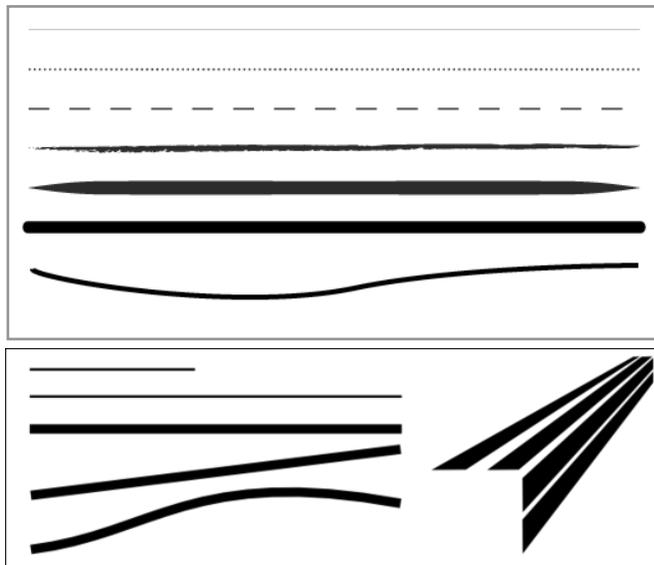
Communication — Line Types

First of all, a line is simply a fluid connection between two or more points. It seems like there is an endless supply of differing types of lines, from thin lines to thick lines, short lines to long lines, wavy lines to straight lines. But just like everything in design — or in life — there are some basic lines that we need to understand.

- Literal line – A literal line is just that, a line. It's the visual or actual line you see.

- Implied line – This type of line is the "imaginary" line that your mind instantly creates by connecting dots or elements together. The best example of this is a dotted line.

- Psychic line – This type of line is another "imaginary" line that differs slightly from implied line in that psychic lines are generally used to create eye direction form one element to the next. A great example of this in web is a photo of a person looking in a particular direction, or a series of arrows.

- Contour lines – Contour lines are mainly used to define edges and create boundaries of elements. This type of line is probably the line type mostly used or seen in web design, borders being a classic example.

- Dividing lines – Dividing lines divide space and are commonly implied lines that are used to divide content areas such as the dividing spaces between columns of text.

- Decorative lines – This type of line is generally used to add something to an element: texture, depth, shading, function or any other decorative embellishment. The most well know a decorative line in web design is the underline under a text link.

Meaning and Mood

Lines are great for creating mood and meaning. Beyond the foundational line types above, other line types and styles can be used to create meaning and mood. Because there truly are an endless number of line types and combinations within, we'll just take a look at the few main types.
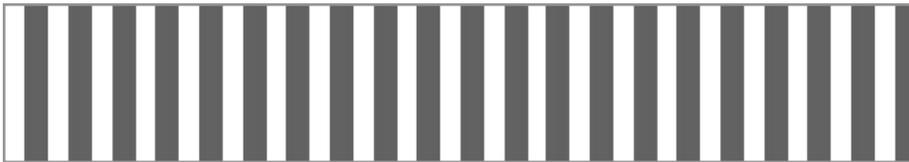
Vertical lines simulate height and can create a mood of grandeur or spirituality. A great example of this is the vertical line usage in churches and cathedrals where ceilings are lifted on tall vertical pillars guiding the eyes upward. In web design vertical lines tend to represent or create length and indicate to the user that there is more content below the fold.
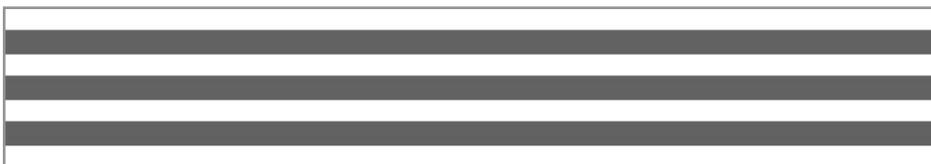
Horizontal lines generally create relaxation or a calming mood; they tend to be quiet and subtle whereas vertical lines are more imposing and powerful. In web design horizontal lines are also known for their ability to organize content. When you

look at gridded layouts you'll notice that horizontal lines are the elements creating balance and organization — even though grids are generally laid vertically.
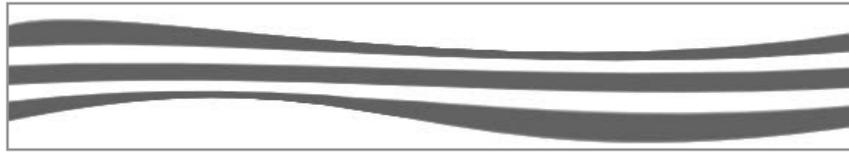
The majority of curved lines create familiarity and comfort, they also suggest relaxation. Curved lines are very easy on the eyes and are interesting to follow. Curvy lines are associated with nature — they feel very organic.

Diagonal lines are the greatest way to create movement and direction. Where horizontal lines suggest gravity and are stable, diagonal lines are more unstable. These lines don't lie down or stand up in a restful position, they are in motion and you can actually create a sense of speed just by simply adjusting the pitch of the lines: the steeper, the faster.

Thick lines are visually powerful on the canvas, they represent power and respect. The use of thick lines can build a feeling of power and boldness. However, the overuse of thick lines can be very irresistible and way too demanding so you'll need to be careful and balance them off with other visual elements or differing weights of line.

Thin lines tend to feel fragile, but their subtle feeling makes them great for directing the eye without being annoying. They are also empathetic to the viewer and tend to create a feeling of comfort and tranquility. Combining thin and thick lines is a great way to create visual interest and hierarchy by balancing the visually demanding thick lines with the subtle, comforting thin lines.

Element of Design: Line

Line is probably the most fundamental of all the elements of design. It is the starting place for most artistic creation whether one is starting a fine drawing or

painting or even sketching ideas for a sculpture. Most design begins with line. So what is line?

A math teacher would say that line consist of only one dimension, length. In the real world of creating art though a one dimensional line would not be practical. A more usable definition might be that line is the path of a dot, point etc. through space and that is always has more length than thickness. Lines are not all the same, especially in art.

Types of Lines

- **Vertical lines:** are straight up and down and perpendicular to horizontal lines
- **Horizontal lines:** are straight up and down and perpendicular to vertical lines
- **Diagonal lines:** are lines that straight in any direction except vertical or horizontal
- **Zigzag lines:** are a series of diagonal lines joined end to end
- **Curved lines:** are lines that bend in any amount of degree; they may be gently wavy to tightly wound spirals

Variations of Lines

Lines come in many varieties. They may:
- be long, short or anything in between
- be thick, thin
- be smooth or rough
- be continuous, implied, dotted, dashed
- change direction
- change in degree of curve (curved Lines)
- be any of the above combined

Some ways Artists use line

- to outline; a starting place for many drawings or paintings
- to suggest moods or emotion; lines can appear calm, nervous, angry, etc.
- to lead the viewers eye through a work of art
- to create lightness or darkness; lines placed close together appear darker than those placed further from each other
- to create texture; roughness or smoothness

Common types of line drawings

- **Contour line drawing;** drawings that use a fairly continuous line to represent the edges and surface detail of shape or objects being drawn
- **Gestural line drawing;** drawings that use quick pencil strokes (or other drawing instruments) to capture a scene. gestural drawings imply action and movement

- **Hatched or cross hatched line drawing;** drawings that consist or parallel lines (hatching) or crossing parallel lines (cross-hatching) drawn to create changes in lightness and darkness and texture.

Elements of Design

A complete knowledge on the various fundamental elements of art and design would help a person to create and design a garment on an aesthetic manner. To create beautiful garments consistently one need to follow certain guidelines in selecting and arranging design elements. In creating a design one of the components which interact is the Design Elements.

The elements and principles of design are flexible and should be interpreted within the context of current fashion. The principles of design are the rates that govern how elements are combined. The elements are therefore the raw materials that must be combined successfully.

The following are the different elements of Art.

1. Line
2. Form and Shape
3. Colour and
4. Texture

These elements are considered as 'plastics' in art language because they can be manipulated or arranged by the designer to create a desired illusion.

Line

Line has different aspects including direction, thickness, sharpness of edge and length. It provides the visual dimensions of length and width. When lines combine, space is enclosed, forms and shapes are defined. Lines offered a path of vision for the eyes when wearing an outfit. Line has several functions,

1. To create a mood.
2. To define and create shape.
3. To indicate direction.
4. To lead the eye.
5. To establish a point of emphasis.
6. To create an illusion
7. To indicate dimension of length and width.
8. To enclose space.

Types of lines

There are only two kinds of lines - straight lines and curved lines. Straight lines can take four directions: Vertical, horizontal, diagonal or zigzag. A curved line may be extreme, approaching a full circle or it may be very gentle or subtle almost straight.

Straight lines

Straight lines are in opposition to the natural curve of the body. They are rigid or crisp. The use of straight lines in clothing design is very often softened by the texture of the fabrics selected. For e.g. when a soft fabric such as Jersey is used, the straight lines drape on the body curves, stiff fabric such as organdy or taffeta maintain the straight line because they stand away from the body.

Lines within a garment are created by darts, seams and decorative details. Each kind of line produces its own special effect. Straight lines and shapes denote force and strength and have a masculine quality; curved lines are the lines of nature. They are graceful and give a feminine effect. Lines are the greatest devices of fashion designers. Since lines create illusion of height and width, they can be used to one›s requirement to tone down a particular figure type.

Each direction of a straight line (vertical, horizontal, diagonal, zigzag, creates an optical effect or illusion that must be judged on the individual to identify the effect in a particular garment design.

The arrangement of lines in clothing design can cause to appear taller, shorter, heavier or thinner than what actually is and how line is used creates a mood in a garment. Line and the optical effect that they create, can make hips look small or large, shoulders look broad or narrow, and waists look thick or thin. The effects that lines produce are related to other factors such as,

1.   The shape of the body wearing the design.
2.   The colour of the fabric.
3.   The degree of contrast that enable the lines to be noticed.
4.   The comparison of adjacent shapes or spaces formed by lines.
5.   The fabric drape, hand, weave, print and texture.
6.   The effect that the viewer has been pre conditioned to expect.

Vertical lines

These produce an illusion of added height to the outfit design by adding and contrasting coloured vertical band in the centre or a center panel added with vertical line gives an added height to the outfit. These lines tend to make a short person looks tall. The princess style dress also has the same effect. When a vertical line is emphasized in garment design, the eye of the observer measures the length of that area. Noticeable vertical lines that divide skirt / pant and bodice / skirt areas can reduce the apparent visual width of these spaces. To illustrate a plain skirt, undivided by visible seaming, usually appears broader than a skirt with one or more vertical seams in the front and back sections. The angle and spacing of two or more visible vertical seams in the same garment will vary the effect of fineness and length.

Horizontal lines

These lines add width to the garment and decrease the apparent height, for e.g. A wide contrast coloured belt shortens the height of the figure by cutting the garment

into two segments, however the belt has the effect of slimming the waist line, the self coloured will not shorten the height of the outfit as well as the wearer.

Diagonal lines

These lines add or decrease the height of the wearer depending on their slope. Long uninterrupted diagonals view almost vertically are the most lengthening and most dramatic of all lines. Diagonal lines should be combined with vertical or horizontal lines. If they are used alone for the entire dress the effect will be disturbing

Curved lines

These lines are more romantic by nature and are considered graceful and feminine; those in a diagonal direction are the most graceful and can be seen in the soft folds of material in a draped dress or a ruffled collar. Curved lines generally follow the contour of the body. When the curved line becomes exaggerated towards a full circle, it becomes very active and may easily be overdone. A controlled curve is graceful, flowing and gentle. Just as straight lines can conform to the body contour through fabric textures so do curved lines - with the effect of being extremely curvy. For e.g. If a ruffle is added to a garment, the eye moves quickly over the smooth parts of the garment and tends to rest on the ruffle. Placing a ruffle at the wrist therefore will attract attention there. Adding fullness to any part of a garment attracts attention. Curved lines can add weight to a thin person or even an angular person.

Zigzag lines

A zigzag is a series of connected diagonal lines. A zigzag forces the eye to shift direction abruptly and repeatedly in an erratic and jerky movement. This type of line is found most often in fabric design. Because of the eye activity caused by zigzag lines, they tend to increase the apparent mass or size of the area covered by them.

Line movements

The arrangements of vertical, horizontal and oblique lines produce line movements characterized by opposition, transition or radiations opposition; in a design where the vertical line is opposed by a horizontal line opposing oblique lines are used.

(i) **Transition:** When one line direction slips smoothly into another, the movement is transitional. E.g. Curved lines. Curved lines should not be overdone. They are at their best when stiffened by same straight lines.

(ii) **Radiation:** A design is created with radiating lines at the neckline; it will attract attention to the face. These radiating lines are produced by stitching decorative darts on the right side of the garment.

Interrelationship of Elements of Design

Understanding the role of space, shape, and form and developing the skill to analyse line direction helps one learn to predict the effect of each design. Because

these design elements combine with color and texture to produce all designs, they are important in all areas of creativity.

When applied to clothing selection, the importance of space, shape, form and line becomes clear. the three dimensional form of the body within the garment creates contour, which give the garment shape, but the illusion of the shape of the garment is always dependent upon the form of the body within the garment. The space of the garment is the background area found within the shape or silhouette. The division of this space with construction details, decoration, texture, color and printed fabric design is critical to the style of the garment. Lines are used to create the form and the shape of the garment and to divide the space within the shape of the garment lines lead the eye in a definite direction. The elements are all responsible for determining how the garment looks on the body.

Form and Shape

Form: It is an object having three dimensions like length, width and depth. The human form changes visually with clothing, especially as fashion changes.

Shape

It describes the outer dimensions of an object. Through clothing design, the shape of the human body is often revealed in a natural way, but sometimes even distorted. The shape of clothing on a human body, communicates silently, the messages about the wearer.

The shape of the body plus the lines of garment create an overall form that defines the garment silhouette. Often the silhouette gives the first impression because it is seen from a distance and because it is contrasted to a background. The silhouetted form of the clothes next to body reveals the shapes of various parts of the body line, and the garment, such as sleeves, shirt or pants.

Every fashion period, a shape emerges slowly or evolved suddenly, whatever it is, every period has a specific shape of garment which once determined can be modified and be styled for variation in design without changing the basic shape of the garment, it is either flare or tight, circular or straight, a line or raglan. It is therefore advisable that the designer chooses an easy silhouette to keep on creating for a longer duration.

Shape and form are the terms that are used inter-changeably with some differences. The term ‹form› is generally considered to apply to two-dimensional areas or shapes as well as to three-dimensional volumes or masses as ‹shape›. When lines are joined to enclose space, they result in an outline, a contour, or shape. When a two dimensional shape acquires a third dimension, it becomes a form. The form of an object usually suggests its use. Form may be viewed as an enclosure of volume surrounded by limiting factors. Shape is the primary means by which we distinguish one form from another. It may refer to the contour of a line, the outline of a plane, or the boundary of a mass. In each case, shape is defined by the specific configuration of the lines or planes which separate a form from the background or surrounding space.

Form is an important element in decoration. Without beauty of form, application of excellent colour, texture and decoration are of no use. It can be said that two essentials of good form of an object are that it,

- Should suit its function
- Should be strongly influenced by the material with which it is made.

There are three broad categories of shapes and forms. Natural Shapes represent the images and forms of our natural world. These shapes may be abstracted, usually through a process of simplification, and still retain the essential characteristics of their natural sources. The second type of shape and form is abstract. This type of shape and form is derived from objects in nature or from other things that are familiar to us; however, they have been distorted, exaggerated, and reorganized, and at times beyond recognition. The third type of shape and form is called non-objective. Non-objective shapes make no obvious reference to a specific object or to a particular subject matter. In this grouping, geometric forms and biographic shapes are found. Some non-objective shape may result from a process such as calligraphy and carry meaning as symbols. Others may be geometric and elicit responses based on this purely visual quality.

There are three separate and distinct types of geometric shapes.

- Rectilinear - Square or rectangle
- Angular - Triangle or pyramid
- Curvilinear - Circle, sphere, cone, cylinder

In their most regular form, curvilinear shapes are circular while rectilinear shapes include the series of polygons which can be inscribed within a circle. In all these, the most significant geometric shapes include the circle, triangle, and square. Extended into the third dimension, these primary shapes generate the sphere, cylinder, cone, pyramid and the cube.

Squares and rectangles

The square form represents the pure and the rational. The equality of its four sides and its four right angles contributes to its regularity and visual clarity. A square shape has no preferred or dominant direction. It is a stable, tranquil figure when resting on one of its sides, but becomes dynamic when standing on one of its corners. The square form epitomizes strength but, used exclusively, it tends to become tedious (hence the descriptive term ‹square› for certain people).

All rectangles can be considered to be variations of the square with the addition of width or length. While the clarity and stability of rectangular shapes can lead to visual monotony, variety can be introduced by varying their size, proportion, colour, texture, placement or orientation.

Triangles

Triangles contribute unity and balance. The triangle represents stability. The dynamic quality of a triangular shape is also due to the angular relationships of its three sides. Because these angles can vary, triangles are more flexible than

squares and rectangles. In addition, triangles can be conveniently combined to form any number of square, rectangular and other polygonal shapes. Pyramid and triangles differ from rectangles and squares in their pointed dynamic character and express greater flexibility.

Circles

The circular forms are also useful and compact. It represents unity, continuity and economy of form. They are man›s and nature›s most conservative and economical forms as they enclose the greatest area and volume with least surfacing. A circular shape is normally stable and self-centering in its environment. When associated with other lines and shapes, however, a circle can appear to have an apparent motion.

Pattern

Pattern refers to any sort of extrinsic surface enrichment. It is a two-dimensional or three-dimensional ornament arranged in a motif form. Because patterns can be created by textures and forms and is found in the shape of individual items. Pattern has movement and should be arranged so that it will flow with the rhythm of the object it adorns.

Pattern can coordinate the entire decorating theme.

The cost of a dress is no indication of the quality of the decorative pattern used on it. The finest designers are employed chiefly for expensive goods. However, we also find that their designs are adapted or duplicated or imitated in inexpensive materials. It is desirable to buy patterned articles and other furnishings and fabrics designed by famous designers. Manufacturers often underestimate the taste of the consumers and make articles decorated with cheap elaborate designs, which people buy because nothing else is available.

Pattern creates an illusion of depth and adds character and to garment. A pattern is an overall design. A 'motif' is an individual unit of pattern. Fabric design is often created when motifs are repeated in a manner to create an overall pattern. These may be considered formal - showing a regular or methodical repetition of the motif, or informal - having irregular placement of motifs.

While choosing a patterned fabric, design of the fabric and colour are extremely important. Patterns range from huge flowers in rich blue and pink plus purples, mauves and apricots to paisley patterns in dark blue, deep magenta and burnt orange and colourful spots and stripes. While buying a fabric that is to be pleated / gathered as draperies / curtains, check how the pattern will look pulled together in their way. Some faint designs come to life when used in a pleated or gathered form, while other patterns lose their impact.

Space is generally considered to be the area seen between the shapes. But space in clothing becomes distractive and fatiguing to view where an interesting space may go unnoticed or appear dull. Both repetition and extreme contrast of a line, shape, space or form produce emphasis.

## *Types of Lines in Art: Meaning and Examples*

Vertical lines are straight up and down lines that are moving in space without any slant and are perpendicular to horizontal lines. They suggest height and strength because they extend towards the sky and seem unshakeable.

Horizontal lines are straight lines parallel to the horizon that moves from left to right. They suggest width, distance, calmness, and stability.

Diagonal lines are straight lines that slant in any direction except horizontal or vertical. When in use, they suggest movement or lack of stability.
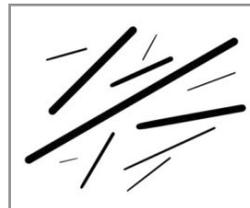
Zigzag lines are a series of diagonal lines joined at ends. They can convey action and excitement, as well as restlessness and anxiety.
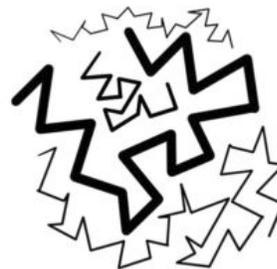
Curved lines are lines that bend and change direction gradually. They can be simply wavy or spiral. Such lines convey the feelings of comfort and ease, as well as sensual quality as they remind us of the human body.
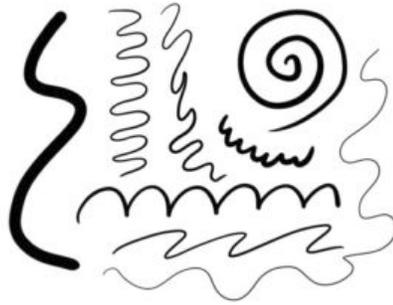
How to Get Variations of Lines in Art

The 5 main types of lines are the beginning of all sorts of amazing and unique lines! To get more line variations, refer to tools such as length, width, weight, texture, style, direction, the degree of curve or all of the above combined.

Length in lines can be long *(tall, strong, far)* or short *(small, cute, close).*
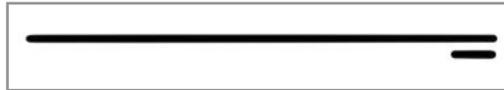
Width in lines goes from thin *(delicate, slim, lightweight)* to thick *(strength, weight, power).*
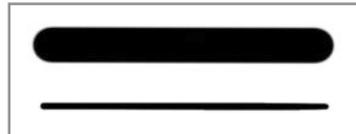
Weight in lines means the continuous change of width. By varying the weight, one can capture energy, movement and even suggest when one object is in front of the other.

Texture in lines defines how smooth or rough it is. Varying it can simply mean changing your working medium *(for example, going from marker to charcoal or changing your digital brush).*

Style of lines refers to continuous, dotted, dashed or implied lines. Continuous or implied lines are great for leading the eye of the viewer in the direction you want them to go. Dashed or dotted lines are great for patterns, energy and calling for attention.
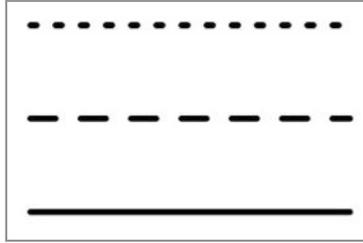
If we combine all of these variations into one, we get a unique looking line that serves a purpose.
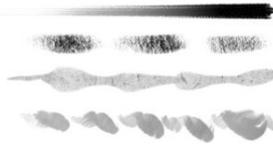
Types of Lines in Art Defined by Their Use

Another way to combine different lines into types is by the way they are being used in an artwork. The **types of lines are contour lines, continuous line, parallel or cross-hatching lines, decoration lines, implied lines and gesture lines.**

Contour lines are a continuous line that defines the outline of a shape. They can exist outside and inside a shape, or a figure and are often referred to as line art.

Some artists create contour lines by using the same width line, while others change the width to give more energy and volume suggestions.

The *continuous line* is when a drawing is done at one go without ever lifting it from the page.

This type of art ends up being very expressive and energetic if done right, if done not-so-well it can simply end up looking messy.
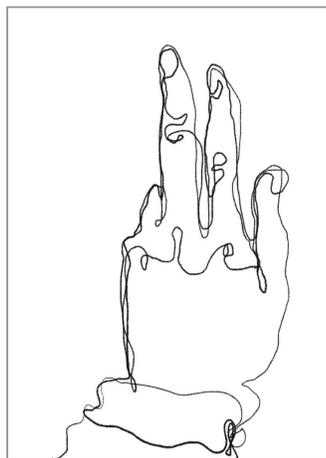
Parallel or cross-hatching lines

Parallel or cross-hatching lines are used to create texture, volume, shading or patterns.

They are often used as one at a time and are very effective during sketching. The more lines there are close together, the darker the area seems, creating a shadow.

Gesture lines are quick continuous lines often used to represent human form and movement, thus gesture drawing.

Gesture drawing *(link to gesture drawing tips you don't want to miss!)* is often a warm-up session of 30 seconds – 5 minutes, which supports the energetic, quick and in-motion lines type.

Implied lines are lines that aren't physically present, but generated by our minds based on other subjects.

They are a very powerful tool in art and design, as they guide the viewer's eyes right where artist wants them to go.
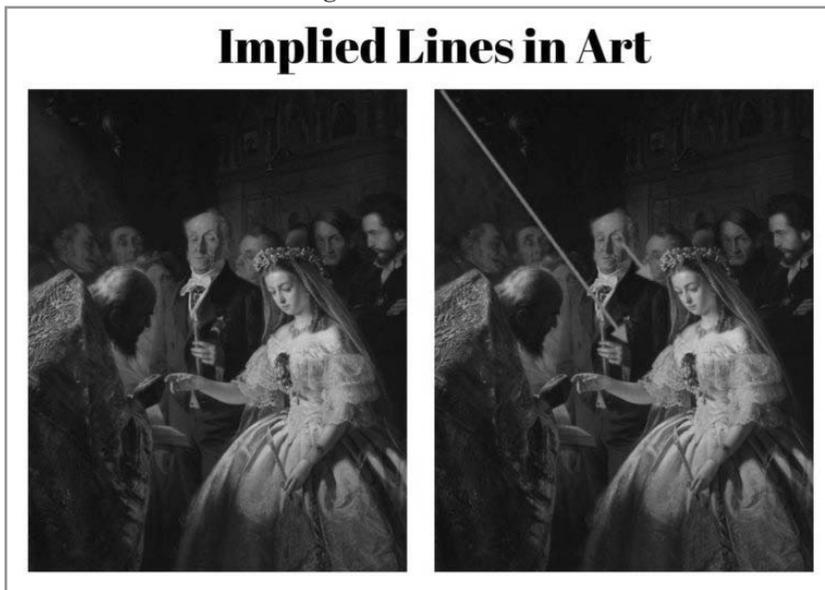
Functions of Lines in Art and Design

An artist's line is a sort of signature for them. A line is where a shape begins, and each artist owns their own gallery of preferred lines, which is the beginning of one's art style.

And while I briefly explained the meaning each of the 5 types of lines conveys, their functions are limitless. Lines are everywhere!

The most common functions of lines in art are: identification, three-dimensional space, organization, movement, texture.

The **identification function** of a line refers to its most basic function of capturing the essence of the subject. Meaning, our brain is able to identify a few varying lines put together in a certain way as a human or an object.

The **three-dimensional function** of line is to provide a sense of space. Variation of a line in tonality, width, weight, focus and intensity is what allows for the effect to occur.

For example, if an object is far, the tone of the line will be lighter and thinner, than for the object that is close (darker and thicker).

The **organization function** of a line refers to the basic under drawing *(or sketch)* for artwork in painting/drawing, as well as separating or grouping elements on a page in design.

It's often the stage when one defines the composition of art, where the foreground, middle ground and background lie, as well as the objects within it.

The **movement function** of a line refers to guiding the viewer's eyes in the desired direction, as well as showing the movement of a subject.

It's often done through varying line's width, direction, or using implied lines.

The **texture function** of a line is using different variations of a line to imply textures. For example, smooth texture is created with straight or curved unbroken lines, messy texture can be created by using a different tool, and fur textures are created with a specific pattern.

Effective Ways to Use Lines

Before putting down a line, think about what your artwork is all about and choose accordingly!

If creating an **energetic** work of art, try using curved lines with varying width and texture!

When working on a **peaceful** work, try the organization function and figure out big shapes, and then use curved waves and minimalism.

If working on a piece trying to convey **anxiety**, try cross-hatching, zigzags and diagonal lines.

Lines Types, Varieties and Functions Summary

To sum up, these are the 5 types of lines:

1. Vertical
2. Horizontal
3. Diagonal
4. Zigzag
5. Curved

You can make a variety of lines using these tools:

- Length
- Width
- Weight
- Texture
- Style

Other types of lines are defined by the technique you are using:

- Contour lines
- Continuous line
- Parallel or cross-hatching
- Gesture lines

- Implied lines

And their 5 functions are:

1. Identification
2. Three-dimensionality
3. Organization
4. Movement
5. Texture

1.4 DIRECTING, DIVIDING, PSYCHOLOGICAL EFFECTS OF LINE

INFORMATION ON DESIGN LINES

These details are only basic information to give you a better overview. Most of the information can and will vary when put together with other style details, lines, designs, patterns and fabrics.

A style line will allow you to create the illusion of balance and proportion with basic knowledge of some important style lines.

1. Enhance, alter or conceal the actual contour lines of your body.
2. Created by the basic outline of the garment such as a sheath, A-line, etc.

Design lines are major lines created within the style line e.g. openings, pleats, sizable prints or larger accessories such as sashes. They will create an effective illusion of height, width, length and curves to the contours of your body.

Classification of Line Concept

The lines contain differences in point of its structure and its shape. The lines are mainly separated to 2 groups by mechanical and artistic ways. In other words, they can be sorted according to their geometric and artistic dimensions.

The Psychological Effects of Line

The line causes some feelings on a human psychological perception whether it was designed singular or plural. While the line describes the route of a moving point, it expresses the direction, the improvement and the movement by visually. So the line is more dynamic according to the point.

Generally, the mechanical lines create static, stable and monotone influence; the artistic lines create unstable and dynamic effect.

The Psychological Effects of Line According to the Movement of the Point Which Creates the Line

There is no breakage, bending, deviation, see-saw, fluctuation etc. on a straight line. Therefore it creates the impression of being motionless, simplicity, comfort, stability.

According to Rutt; the straight lines remind of the intellectualization, classicism and sometimes madness and masculinity.

The impression of the motion caused by the bending line concentrates. Therefore unlike the straight line the curved line is dynamic.

Liveliness, fusion, fluctuation, seesaw, vibration, wriggles, diffusion, scattering, speed, rotation etc. is used to visualize the kinds of motion.

According to Öztuna, the curved line is restless. It might create charming effects on design.

Due to creating softer effects compared to straight lines, the curved lines are perceived as feminine.

According to Şenyapılı, the curved lines express softness, nice and rhythmic move and caressing.

The curved lines are indicators of grace and nobleness, youth, joy and delicate movement.

Horizontal curves specify the gentility and comfortable movement. The lines expanding downwards give the feeling of a nice hardness and staying connected to the earth.

The psychology of fonts in logo design

Fonts have a psychological impact on people. The emotion generated from font choice is directly tied into the shape of the letters and our psychological response to those shapes.

When using fonts for your business; choose a font with the right "personality." As we wrote, Typography is an effective way to convey more than just the words involved in written communication. It showcases personality by visually representing the tenor and tone of what it is you're talking about. You may find that your purpose is best met by using a font with a vibrant personality throughout your website or using an amalgamation of sans and serif typefaces.

Some people are familiar with Serif and Sans Serif fonts (you've seen them even if you don't know how to tell them apart). They were designed to make it easier for people to read words and that makes most Serif and Sans Serif fonts a good fit for many different kinds of businesses.

How do you know which font style will work best for your business? Are you better off with something conventional, like Arial or Helvetica? Maybe you'll find a stronger fit with an offbeat choice like Kirsten or Papyrus (Papyrus!)

The Software Usability Research Laboratory (SURL) at Wichita State University ran a study that examined the traits people associate with varying fonts.

Traditional fonts including Arial or Times New Roman were categorized as "stable" and "mature", but were also considered "unimaginative" and "conformist."

In contrast, "youthful" and "casual" fonts like Comic Sans were also considered "happy" and "casual."

Fonts for a business logo, for example, should work to be traditional and clean. You need to be sure anything with your font on it – letters, emails, business cards – reinforces the message that you're a trustworthy, credible business.

A more casual coffee shop, on the other hand, should avoid overly rigid, hyper-clean fonts. A cafe's atmosphere is typically relaxed and comfortable, and your font choice should reflect that.

Most important, be sure that the company's name is legible and readable. You'd be surprised how many logos we've seen that are unreadable.

How can you remember a business if you don't know the name of that business?

The psychology of shapes in logo design

All logos – whether they include an icon and text, only an icon, or even just text – have a shape.

And, it's important to consider what that shape communicates about your brand.

Shapes fall into 3 major categories – geometric, abstract/symbolic and organic. And, they all come prepackaged with their own psychological associations.

Geometric shapes

Geometric shapes of all kinds look man-made. Mathematically precise squares, perfect circles, and isosceles triangles don't tend to appear in nature. So, using these shapes communicates a sense of order and power.

Squares and rectangles convey stability, reliability, strength, order, and predictability. Think of the bricks that are used to build sturdy, stable buildings. If you want your logo to communicate strength and reliability; consider incorporating squares or rectangles.

This is precisely what IBM did in creating its iconic logo. Their full company name, The International Business Machines Corporation, was shortened to IBM to create a more powerful, minimalist visual brand.

Circles are never-ending. So, they may be the right choice for your logo if you want to make your consumers think of harmony, unity, eternity, or timelessness. Curves are considered to be feminine; and, as such, circles communicate softness, gentility, and femininity.

Triangles are a directional shape. As a result, they change meaning depending on how they are positioned. When right side up, triangles convey power, stability, and upward momentum. Inverted triangles suggest instability or downward momentum. And, triangles pointing to the side convey movement and direction based on where the triangle's point is facing.

Abstract or symbolic shapes

Symbols are simplified shapes that represent something specific in a culture. And, because symbols have clear, common meanings, they are relied upon heavily as a visual language.

People have seen these images again and again, so it's really important to be clever and original in how you use them. It's easy for logos featuring symbols to appear trite and unoriginal.

Here are a few common examples of symbols:

Stars can convey patriotism, religion, or even show business and Hollywood depending on how they are used.

Hearts can be used to communicate love, relationships, and marriage; while broken hearts represent break-ups, divorce, and sadness.

Organic shapes

Irregular, organic shapes are wide open to your creativity.

Organic shapes include the shapes of actual organic items occurring in nature (rocks, leaves, tree bark, amoeba, water ripples, etc.). This category also encompasses any irregular non-symbolic shape, even if it's not inspired by nature.

When utilizing organic shapes, keep these guidelines in mind:

1. Natural shapes like leaves, grasses, representations of water, and trees tend to have a soothing effect on the viewer. This is why they tend to appear in logos for spas and holistic medical businesses.

2. Shapes with jagged angles may create feelings of anxiety for your viewers, while shapes with soft curves will make them feel more relaxed.

3. Shapes that don't resemble anything recognizable are open to the viewer's interpretation. This means that you will need to work harder to communicate a specific message through other design elements and branding choices.

When designing a logo, be mindful of what shapes will represent the brand best. Is the brand a reliable, precise square or a wacky organic inkblot?

Lines appear everywhere.

And we usually don't give them much thought.

Lines divide space. They create definition and form. They communicate direction. Lines tell us where to stand and where to drive.

But, beyond their practical function, they can also communicate a great deal aesthetically.

ArtyFactory, a free online learning resource for visual artists, shares:

Line is the foundation of all drawing. It is the first and most versatile of the visual elements of art. Line in an artwork can be used in many different ways. It can be used to suggest shape, pattern, form, structure, growth, depth, distance, rhythm, movement and a range of emotions.

Geometric line art logos are currently popular and among the logo design trends this year.

Thin vs. thick lines

Thin lines are delicate and may appear fragile. They communicate elegance and femininity. They can also imply frailty, weakness, or flexibility.

Alternately, thick lines suggest strength and rigidity. They appear more traditionally masculine than thin lines. Thick, bold lines are used to draw focus and create emphasis where they appear.

Straight vs curved lines
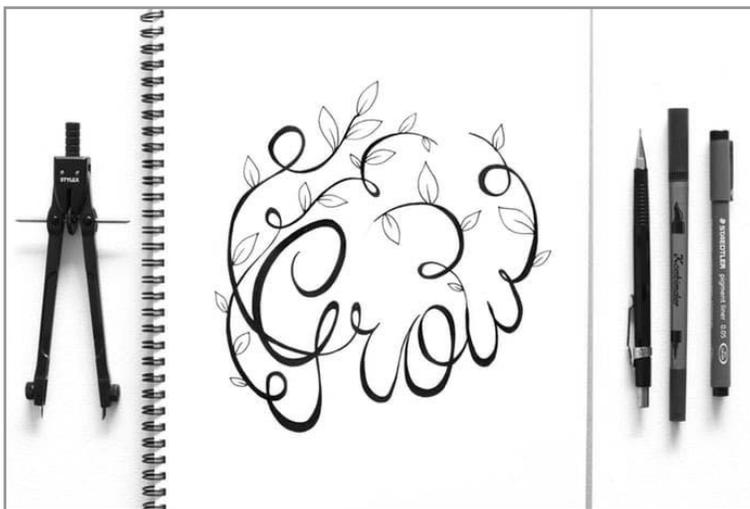
Straight lines imply order, structure, and predictability. They may also be perceived as rigid or harsh. Straight lines are the best option for underlining text to draw the viewer's attention, while at the same time allowing the text to be the star.

Curved lines, on the other hand, offer more energy and dynamism. Curved lines are visibly flexible and can communicate agility and reactivity. If you're looking to convey grace and fluidity, curved lines are a great choice.

The stronger the curve, the higher the energy the line will communicate. Softer curves are more calming to look at.

Horizontal vs. vertical vs. diagonal lines

The position of your line in space impacts the psychological effect that the line creates.

Horizontal lines run parallel to the horizon. As a result, they contain the least visual energy of all line positions.

Unlike vertical or diagonal lines, they look as though gravity has already acted upon them and there is nowhere for them to fall. This means that horizontal is the most restful and stable line position. They feel comfortable and safe.

Horizontal lines help to highlight width, can be used to indicate the earth or ground, or to indicate lateral movement.

Vertical lines run perpendicular to the horizon. They appear to rise straight up from the earth, filling them with the potential visual energy to tip or fall.

Vertical lines draw the eye upward. And, as such, are often used in religious iconography to draw focus upward to the heavens.

Thicker vertical lines are perceived to have more stability (and be more calming) than thin vertical lines which look more fragile and unstable.

Verticality also can be used to convey dignity or upstanding trustworthiness.

Diagonal lines can be positioned anywhere between horizontal and vertical. This makes them very expressive and the least stable of all the line positions.

The higher the top of the line, the more distance the line can fall. This translates to more potential visual energy. You will draw more tension in your viewer the higher the angle you create from the horizon.

Diagonal lines suggest movement and action. They are more casual and playful than vertical or horizontal lines because they resist being pigeonholed in either resting position.

Smooth vs. jagged vs. irregular lines

Smooth lines are clean, calming and restful. Depending on their context, they can convey confidence, fluidity, or ease.

Jagged and zigzagging lines are filled with tension. These dynamic lines change direction quickly, communicate erratic movement, and irregularity. They can suggest excitement or anxiety, confusion or danger.

Irregular lines that are neither completely smooth nor jagged look hand-drawn and natural. They appear casual and can create emphasis and focus by placing additional weight in the places where you want to draw focus.

Irregular lines can convey playfulness, confidence, timidity or hesitation based on how they are drawn.

Lines are incredibly expressive tools with great potential for embodying emotion. You can combine most of the factors described above to create lines with great individuality.

When designing a logo, make sure to choose the style of line that best supports the brand the logo will represent.
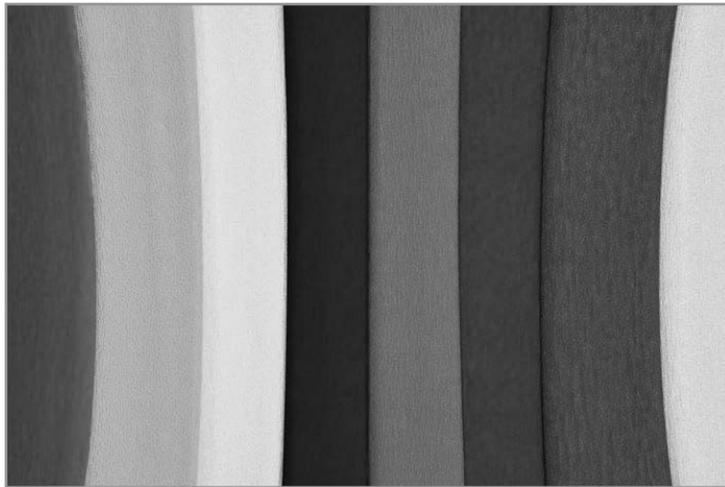
Color contributes the strongest emotional trigger in your logo design repertoire

Colors are strongly linked to emotions in the human psyche. Whether our interpretation of colors is hardwired into our brains or is due to cultural influence – or a combination of both – there is a generally accepted language of color.

While our perception of colors and what they mean is subjective, there are some basic qualities that we can apply generally. Here are some of those qualities:

- Red : Often considered exciting, attention-grabbing, warm, and connected to love, anger, life, and comfort.
- Yellow : Seen as adventurous, evoking happiness, enthusiasm, youth, and travel.
- Green : Of course, this color is connected to money, but it's also known for its connection to balance, health, sustainability, and knowledge.

- Blue : The color of honesty, high quality, competence, trust, reliability, and integrity.
- Pink : This color evokes love, compassion, romance, gentleness, and sophistication.
- Purple : Creativity, royalty, mystery, respect, and playfulness are often connected to purple (and violet).
- Brown: Brown is the color of the outdoors and can be seen as friendly, organic, natural, friendly, and rugged.
- Black : This color is all about sophistication, intelligence, seriousness, and expense.
- White: The antithesis of black is known for its order, innocence, purity, cleanliness, neutrality, and space.
- Grey : When you need to communicate timelessness, neutrality, refinement, of the moment, or practicality, you might want to use grey.

Culture and context can also influence how a color is interpreted. Therefore, do your due diligence and research your audience so you can make the best choices based on their specific backgrounds.

It's also important to bear in mind that how you mix your colors in a single design also has psychological implications for your viewers. For instance:

- A multitude of bright colors appears youthful, childlike, or full of energy.
- Black and white is a classically elegant combination that implies maturity and sophistication.
- Monochromatic schemes allow you to embrace more vibrant colors while maintaining a softer, more unified feel.
- Combining neutrals with an accent color allows you to take advantage of the emotional influence of a strong, bright color without the childlike implications.

Choose your colors wisely to elicit appropriate brand-appropriate emotions. Your color choices should always embody the personality of the brand.

But, don't forget that how you compose those elements also impacts how the logo is perceived and the message it sends.

Here are some important considerations to think through when composing a logo design:

- Size denotes importance. The larger an object is the more focus it draws and the more important it seems.

- Western audiences read from left to right. So, things appearing on the left side of the logo will be viewed first and perceived as the most important.

- Loosely spaced items surrounded by negative space look more restful than items that are closely spaced. If you choose to emphasize negative space, be careful not to leave too much or the logo may lack coherence.

- Scattered or irregular placement suggests playfulness, chaos or rebellion; while orderly, symmetrical arrangements communicate formality, stability, and conformity.

- Layering items together creates visual relationships, so be mindful of how you combine shapes and lines.

The combinations of lines, colors, and shapes to create a logo are limited only by your imagination and creativity.

Psychological Lines
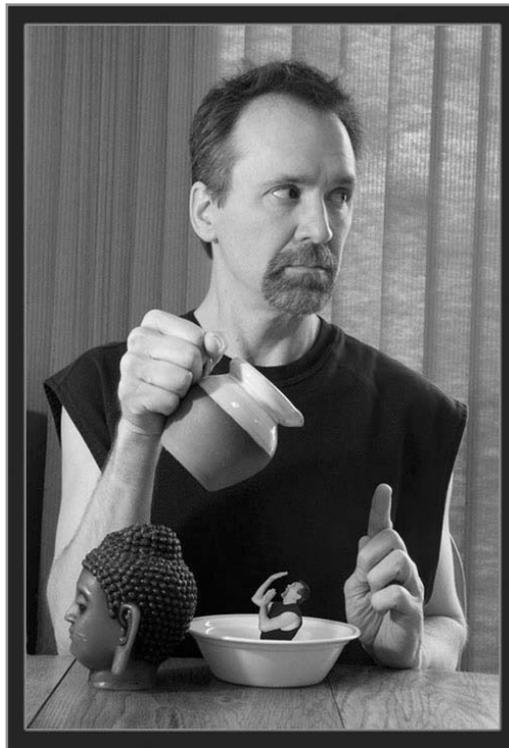
This image is a good candidate for the "Squint Test." Yes, that's right. Squint, even fairly tightly, so that all you see are the most obvious visual elements. You'll probably notice the circle of the head, the lines of shoulders and right arm,

vertical lines of the blinds behind, right hand and other objects in front that form a somewhat circular, actually almost pentagonal, shape.

Let's call that the visual plane of the image. It has some very clear lines. But there is a lot more going on here than the visual plane. There is also a psychological plane, containing psychological lines. Some people call them "transitional lines." These lines don't exist in any concrete visual sense, but rather are created by the mind's eye according to our assumptions and expectations about how people and the world work. Such lines interact with those in the visual plane and therefore play an important role in composition.

One type of psychological line and a powerful one too, are created by eyes and line of sight. Humans and many animals are extremely sensitive to the eyes of others and where they are looking. Research on infants' show that we are drawn even at birth to search for faces and eyes. In this image the man is looking off to right. Buddha is looking to the left. What are we looking at? Inquiring minds want to know and therefore create horizontal psychological lines that encourage us to shoot right out of the frame. However, you know that I'm alive while the statue of Buddha is not. So the sense of direction created by my line of sight overpowers that of the Enlightened One. Of course your eye also goes to his head first, before Buddha's, because it's bigger – bigger literally, but also figuratively because he's enlightened.

If a subject is looking at some object in the scene of a photograph, we cannot help but sense a psychological line between them. If a person is looking at another person, that line is even stronger because human contact is an incredibly powerful experience for us. If people are looking at each other that line is so strong that it could easily overpower almost any line in the visual plane, no matter how long, thick, or colorful it is. If the subject is looking at the camera and therefore at both the photographer and us… well, then we emotionally enter the scene via an invisible but very powerful line that extends right out of the world of the image and into our own.

There are many other types of psychological lines. Body language can create them, like a finger pointing or a head turned. Anything in an image that implies motion has taken place or will take place could create one. A rock balanced dangerously on the edge of a cliff. A fist pulled back ready for a punch.

Similar to people looking at each other, these other types of psychological lines tend to be more powerful when there is both a sender and receiver of the action. We know that the milk will soon come straight down from that pitcher into the bowl of cereal, but the fact that his mini-me will be liquefied in the process makes that psychological line even more powerful. The exception to this rule could occur when great mystery or wonder is attached to a psychological line, despite the fact that there is no visible receiver in the scene. What is that businessman in mid-air diving into? Who is throwing a ball with that child? When a subject is looking out of the frame of an image, we can't help but wonder who or what they are looking at. We search their face for possible clues to this little mystery. We might even sense a triangulated psychological line of connection between us, the subject we're looking at, and the unseen presence that exists outside the image, just as we do.

Importance of LINES in Clothing

Have you ever wondered why it is that we wear formal shirts in office or why do formal shirts have lines which are vertical and not horizontal or diagonal? There are many interesting facts that lie behind this question. The main factor being that horizontal lines have a physiological impact on people. In fact every type of lines has a physiological factor influencing ones thoughts.

PHYSIOLOGICAL EFFECT/REASON

Lines makes the eye to move up and down, side to side, from left to right or right to left or around the garment; maybe straight, curved or bent, horizontal, diagonal, vertical, zigzag or it may be a combination of these directions. Lines actually make the eyes twist and control our brain in such a way that our eyes follow and fix on the design. A thick line conveys strength and alertness, while a thin line implies firmness and stability in ones character. We often find that formal shirts have straight even vertical lines and not horizontal because then it becomes casual and the person wearing this is perceived as not serious. So it is not preferred in most offices and companies.

TYPES OF LINES

VERTICAL LINES: Usually creates an illusion of height and slimness, when repeated at equal intervals, it can cause the figure to appear taller because the eyes are drawn up and down.

HORIZONTAL LINES: Gives one a fuller appearance it tends to cut short the person's height and makes the person look broader and fatter.

DIAGONAL LINES: May contribute to height or width depending on their angle and length. The long diagonal lines create a feeling of tallness and short.

CURVED LINES: this produces the same effect as straight line of similar placement. Curves add beauty to the garment and the tailor's style like scallops, frills, flounces prove the same. The visual impact is softer and more graceful. These lines are not used in many of the men's wear because it is more feminine. And it is often used in women's wear because it shows the gentleness and gives a smooth look.

ZIGZAG LINES: This is a mixture of different emotions such as erratic, intense, abrupt, fun, busy, confusing and diverse. Visually it is the eye-catching nut someone looking at it cannot define the person's character because the zigzags creates confusion in one at the sight of it.

Now, that you have got an idea of lines if you are planning to dress for a formal occasion, and then here are some tips that will definitely help you create that perfect first impression.

TIPS ON DRESSING:

1. Always wear something that fits you and you are comfortable in.
2. Vertical lines are best office wears especially to impress your boss and others. And it also has a slimming effect on people.
3. Longer sleeves are more preferred for office because short sleeves look casual.

1.5   STUDENT ACTIVITY

1. What is Line? Explain the Types of Lines?

   ....

   ....

   ....

2. What is Elements of Design? Explain the Types of Lines in Art: Meaning and Examples?

   ....

   ....

   ....

1.6   OPTICAL ILLUSION, FORM, TEXTURE, COLOUR

Lines: As Optical Illusion on Dress

Lines Aligned to Look Fine

In this era of style and execution everyone wants to present themselves as perfect to the world. Confidence is the main factor required to win the game. But many a times is what we love the most about a dress won't suit and look best on our built as our body is changing throughout the years, because we put on weight or lose weight that may lead to change in our body shape. An undesirable body shape will act as confidence **reducing agent**. But today is the world where every problem is born with its solution. Improper body shapes can be shown as perfect bodies by creating optical illusions for viewers and will always make you look and feel the best no matter the occasion and age. Therefore our dress style will change in regards how to create visual balance in our body silhouette.

Lines: As optical illusion

Optical illusions are best created by different types of lines. The amazing thing is that a bulgy part of the body can be hidden with silhouettes and heaviness can be shown on some parts by adding designer lines in the form of pleats, tucks, **seams**

and necklines. Physiologically, lines make the eyes twist and control our brain in such a way that our eyes follow and fix on the design. When lines come together (converge), the eyes follow them to the point at which they meet and become a focal point making that part of your body look smaller. Conversely, when lines move away (diverge) from each other, the eyes follow them to the end, which become a focal point, and make you look wider. So the idea is to have lines come together or move away from each other to that point on your body that you either want to look smaller or wide. Thick line conveys strength and alertness while thin line implies firmness and stability in one's character. There are an infinite number of physical features and each person has their own unique combination of these.

Types of lines

The illusion of balance and proportion can be created with basic knowledge of some important style lines. The lines are classified as Structural or Designer or Printed.

- Structural lines are the silhouettes that provide the outline and basic structure to the dress. For example: A- line, sheath, empire etc.

- Designer Lines not only adds beauty and details in the dress but also their placement and types allows a person to emphasize on desired part or hide the bulgy part. It is the design added to the structure of dress. E.g.; tucks, gathers, pleats, princess seams or panels, hem lines etc.

- Printed Lines are referred to the prints of fabric that symbolizes many things and helps to look lean, heavy, long or short. These are of different types like vertical lines, horizontal lines, diagonal lines, curved lines etc.

Vertical lines

Vertical lines give the impression of height and slimness when repeated at equal intervals by leading the eyes from top to bottom. Vertical lines close together will make you thinner while two vertical lines far apart will make you look wider. Avoid placing vertical lines at unflattering points. E.g. bigger hips and/or thighs never a good option for pears. Apples and women with fuller tummies should stay away from any detail that adds more volume or brings the wrong attention to this area. Vertical lines include pressed pleats, vertical tucks, buttoned front closures, V-necklines and vertical visible seams, such as a princess seam.

Although vertical lines in clothing may be created by stripes, vertical lines can also be created by seam lines, panels, hemlines, **pleats**, tucks etc. in clothing that run up and down.

Individual height, arm and leg length must be strong considerations in selecting the location of your hemlines and lengths.

When wearing striped clothing, take into consideration that stripes that are too wide may not be in proportion with a petite frame. Also, too many stripes may appear too overwhelming for petites. You wouldn't want to wear a striped blouse with striped pants, for example. However, a striped dress, if the style is right for your body type, may work very well. Suits in neutral colors with pinstripes can be

good investment pieces because you can wear the suit pieces either together or as separates to expand your work wardrobe.

Horizontal lines

Horizontal lines tend to broaden and shorten the figure by emphasizing width. They divide height, especially when more than one line is used at a time. Avoid placing horizontals at unflattering points e.g. bigger bust, fuller tummy and thighs or the wrong sort of attention can be drawn to this part of the body. They are great for pears, women with a long waist and those who are flat chested. They will shorten a longer waist, add volume to the top for pears and create curves for flat chested women. Styles that accent the horizontal line are: yokes, wide waistbands, extended shoulders, bateau necklines dropped and empire waistlines.

The only exception might be when the horizontal stripes are confined to a small area on a garment and are framed on each side by either solid color or vertical stripes. Example, a camisole with horizontal stripes might be worn under a solid colored V-neck sweater. Although very slender runway models and very tall women can often get away with wearing horizontal stripes, short women will look better in clothing that emphasizes vertical line.

Diagonal Line

A Diagonal Line can have two effects, depending on whether it is at a more vertical or horizontal angle. Eyes always move from the upper to the lower end of a diagonal line. A shorter diagonal (more horizontal) will cause the eye to move quickly from one end of the line to the other, creating an illusion of width. On the other hand, the longer diagonal (more vertical) will lead the eye more slowly, creating a longer, thinner appearance. Remember, for the most pleasing results, the diagonal should follow the same direction the eyes move: from left to right, top to bottom. The rules are the same as for horizontals and verticals in regards to who should avoid what. Also women with a short waist or women with an unbalanced body shape need to be very cautious of wearing this design line.

Diagonal lines can also help create a flattering fashion illusion, although usually it's a softer, curvier feel, which can be very effective, depending on the style of the garment. Chevron stripes work well because they create a series of flattering V-shapes, which makes petites look longer and leaner.

Curved Lines

It produces the same effect as straight line of similar placement. Curves add beauty to the garment and the tailor's style like frills, flounces. The visual impact is softer and more graceful. Curved lines can be used to re-emphasize or define your figure because the female body is naturally curved. Often a less desirable straight line can be modified into a more appealing curved line. Produce the same illusion as straight lines; however, curves are more flattering in clothing. The curved line used in the bodice seam of front closures creates the illusion of softness, while a horizontal or vertical line is more pronounced.

These are not suggested to use in men's wear as it is more feminine and it shows gentleness and smoothness.

Zigzag Lines

This is a mixture of different emotions such as erratic, intense, abrupt, fun, busy, Confusing and diverse. Visually it is the eye catching nut and the person's character cannot be defined as zigzags create confusions in one at the sight of it. These lines are perfectly creates illusion for hour glass figure.

Fig: Zigzag line on dress

Perfect dress on body contributes to quality of life and pleasure and satisfaction from human sensation through experience of sight. Fashion and style will allow for flexibility and creativity. There is a unique method of looking for lines that will create balance and harmony in your overall personality. Creation of illusion to gain perfect dress fit for all the body types to look smart with the use of different lines assembles the happiness and confidence of the wearer to execute its perfection to the world and go ahead to enhance its ambitions.

FORM AND FUNCTION IN DESIGN

Design adds beauty without adding value. Is this true? Has designer enthusiasm overtaken the justification of function? Is there a magic space where form and function can coexist? Is it possible to distinguish between good and bad design and purposeful and irrelevant design?

Design was always a broad concept and is getting broader by the day. It encompasses art, form, functionality and style. By and large the common characteristics of a good design are concept, content, craft, suspense and communicative efficiency.

Today we see design creep into everything. There is no longer an 'undesigned' object as there used to be.

Design mainly exhibits two sides – It solves functional problems and it improves the look and/or feel of the product through style, decoration and embellishment. Both these elements are functionally involved and hard to separate. Hence we can also say that 'form' in itself is a 'function' as it satisfies the aesthetic needs. But the question is how important are aesthetic needs and should they overshadow function? In today's popular consciousness, the notion of design as problem solving has become overshadowed by the notion of design as aesthetic appeal and style. This can be seen in the concept of avant garde followed by many designer labels today.

Fashion is broadly divided into classic and ephemeral. Fashion has its timeless classics (tuxedos, stilettos), and it's less commodified avant garde wherein an outfit is considered the equal of a painting or an art work. The classics are an accumulation of art, literature and humane reflection that have stood the test of time and are acceptable by the masses. It embraces function more than anything else and unites all cultures.

In fashion there are no traditions, just changing tastes and its cyclical nature suggests its reversion to past tastes. As a result, fashion design is a field that is constantly changing with new trends driving out the old ones. **Functional deficiencies prevent designer products from becoming classics.**

With the move from craft to mass production, the design process became separated from the making process. This fundamental division meant that a product had to be planned in its entirety before it could be made which gave birth to the modern meaning of design and subsequently the profession of a designer.

The concern should not simply be to find solutions to functional problems but to find 'elegant' solutions – the graceful is not just an aid on but is intrinsic to how a problem is solved. **The best designed objects don't just solve technical problems but do it with style.**

"The best way to know what people want is not by asking them, but by understanding them". – Niels Diffrient.

Looking at any form of design and telling you that it could be better, should always be followed by thinking about the users. Are they already accustomed to the

current design, that if a change is made will they accept it? However it could also be that people will see the improvement and love the new design. *Hence understanding customer psychographics is very important for striking the right balance between the form and functionality of fashion products. It all begins with the target audience. A good design always starts with knowing all of your buyer's needs and wants. It takes a lot of skill and talent to determine exactly what the buyers will choose from such a multitude of choices. This is usually done by identifying a niche for the design, based on any or all of these: age, lifestyle, functional needs, body types, where the person is going to wear the design, seasons etc.*

This balancing act is one that often gets mixed up somewhere along the apparel supply chain. It's crucial to build safeguards into the designing process to ensure that the garments are produced with both fashion and functionality in mind. The function is largely the challenge. Addressing the function is what makes design good or bad. If it is removed, you remove the foundation and in all likelihood you'll end up with a really bad design.

Form contributes to function too. Hence the difference between an impractical design and a sensible design depends on the visual ability of the designer to view the design in a three-dimensional way and his/her technical know – how to harmoniously blend colour, form, and function together.

Simple lines can lead to a multitude of combinations that can be bold, original, beautiful, extravagant and practical.

The lines of the design can create a number of optical illusions, such as shrinking, elongation, narrowing, or widening. This can accentuate or even conceal certain features, so it has to be taken into careful consideration.

Colour can hide or emphasize features and can also create certain emotions that can appeal or repulse, depending on who the buyer is. Finally, the fabric from which the apparels are made plays a big role. Whether the texture of the fabric is smooth, silky, opaque etc, can determine the final quality and appearance of a design. People look for visual and functional comfort or harmony, when buying clothes.

"Simplicity is the ultimate sophistication"
<div align="right">*– Leonardo Da Vinci.*</div>

Simplicity should be favoured to complexity. This ideal derives from the belief that form follows function in nature. All things in nature have a shape, which is a form, a semblance that tells us what they are. These shapes express characteristics, so recognizable, that we say; it is "natural" it should be so. Life is recognizable in its expression. Hence usability and ergonomics should be prioritized over all other design considerations, including aesthetics.

Coco Chanel is the best example of a designer that identified the basic needs of her target and managed to create simple yet innovative designs that appealed due to functionality, simplicity, and elegance. The iconic little black dress, the Chanel suit, or the Chanel hat, are all perfect examples of her timeless fashion designs.

Chanel was a pioneer of a postwar, modern aesthetic for women in the 1920s that embraced comfort and freedom in silhouettes over the restrictive corsets and petticoats. "Luxury must be comfortable," she said, and her designs utilized typical menswear shapes and materials, such as jersey, to achieve this. Chanel looked beyond the mannequin and saw the real woman who would be wearing her clothes. She understood that women needed other things to wear besides the then "over the top" grandiose dresses that women were known for wearing. Her 'little black dress', is not so much a garment as it is a defining concept, one that shows us how to marry form and function.

Another example of this can be seen today in the varied forms and uses of zippers in garments today. Designer labels, including Calvin Klein Collection, Dior, Elie Tahari, Giambattista Valli and Michael Kors are putting bold and exposed zippers on sweaters, dresses and blazers, turning the typically utilitarian closure into an attention-grabbing design detail.

> *"Zippers create unique design opportunities."*
> *- Bill Rondina*

Zippers are fast, graphic, and they're industrial. They are being used extensively as style elements in today's times without losing out on their primary functionality.

Today design is moving from the ideological to the personal and emotional. Experts claim that we have entered the *"Age of Aesthetics "*and that the design mantra of the 21st century is now "Form Follows Passion". Form still follows function but function has been shifted to an entirely different realm. In our post-modern world it has been re-defined. Often it is merely to attract and grab attention.

Regardless of how abstract the function may be there is still a "form" out there that will best promote it. In today's world it is likely more accurate to say – "Deform Follows Dysfunction".

Texture

Texture is the element of design that describes surface appearance and feel. Textures are compared to other textures with which they are combined and to the person wearing them. Some adjectives used to describe textures are smooth, heavy, thin, crisp, glossy and rough.

An understanding of the dynamics of texture helps individual consumers and fashion professionals make better decisions as they select apparel products and items of personal adornment.

Texture as a sensory impression

Textile qualities refer to coarseness, softness or rigidity as recognized by touch. Texture refers to the surface qualities of things. The visual aspect of texture is perceived by the eye because of the degree of light absorption and reflection on the surface of the material.

Texture is fully comprehended by touch, but it is not always necessary to feel an object to understand its textile qualities. Lustrous textures are seen in satins and dull textures in fuzzy wools. Textures have the definite dimensions of weight, size, bulk and shape. These physical dimensions are also visually perceived. Each fabric has textural characteristics that can be described by feeling, seeing or feeling and seeing.

Feel - Soft - Crisp, smooth - rough See - Shiny - dull, opaque - transparent Feel and see - thick - thin, clingy - rigid

Components that determine texture

Texture is determined by the arrangement of the component parts in fabric. These are the fiber, the yarn, the fabrication, E.g. Weave or knit and the finish that make up a fabric. Fibers are spun into yarns, which are used to construct fabrics of varying textures. The finish given to fabric after it is constructed can impart texture as well as other qualities. Texture determines how the fabric should be used. Garment designs that do not respect the fabric texture characteristics cannot be satisfactory.

Fashions in Textures

Fashion as well as silhouettes and colors enter and leave the fashion picture. The style of the garment determines which textures will be used. Changes in fashion bring changes in texture. Tailored garments are cut and sewn for a trim fit. To drape is to arrange in loose folds. Drapable means the ability to hang in following lines or loose folds. Because texture and garment styling must be compatible. The fashion reappearance of textures as well as garment designs occurs periodically.

Selection of Texture

While selecting textures the individual proportions, skin and hair textures and personality must be considered.

Effect of Texture on physical proportion

Textures have the physical properties of weight, size, bulk, shape, light absorption and reflection. Textures can produce illusion that change apparent body size, can make one look heavier or thinner.

Fashion professionals and consumers must consider the dynamics of fabric texture, the design of the apparel item or accessory, and the physical, psychological and social characteristics of the individual in choosing fabric textures.

Color
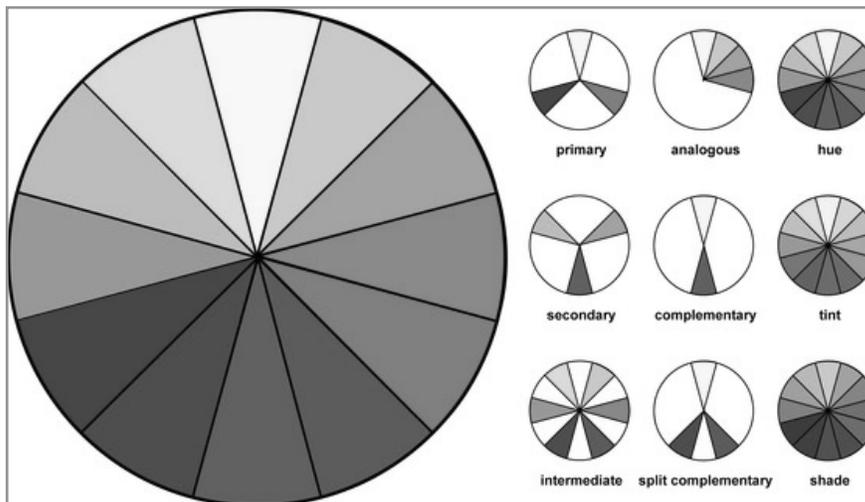
Color is one of the most obvious elements of design, for both the user and the designer. It can stand alone, as a background, or be applied to other elements, like lines, shapes, textures or typography. Color creates a mood within the piece and tells a story about the brand. Every color says something different, and combinations can alter that impression further.

Colour: Colour is an important art element which no one can ignore. Appreciation of colour is largely an emotional process, is felt by nearly everyone, where as appreciation of other art elements such as line, form, texture etc, a large intellectual process is not so common. Colour is a source of universal pleasure and is used by everyone to delight them and also to fortify their living environment by its stimulating effect.

Since the world is filled with colours ranging from dull, grayish tones to more vivid, brillant hues, it seems difficult for us to learn to recognize the names accurately and identify colours accurately. The dimensions of colour are hue, value and intensity. By using these terms the dimensions of colour can be more effectively communicated. Hue is the name of a colour family such as red, blue or green. The term hue is often enormously used interchangeably with the word colour. While choosing a colour one must be at most careful as colour creates the first impression and hence can glorify or destroy once appearance. Even a simple silhouette may be enhanced by using effective colour schemes. As texture is the feel, drape and degree of stiffness and softness of the fabric, it also creates a visual effect upon the wearer, given a small swatch of fabric, the designer can visualize the texture and the feel of the fabric which helps him to design further.

Warm and cool hues

Hue may be described as warm or cool. Warm hues are those seen in fire. They are red, yellow and orange, cool hues are those found in water and sky, they are green, blue and violet. The warmth or coolness of a hue carries with it an illusion of visual height. The warm hues yellow, orange and red are known as advancing hues because they create an illusion of moving forward. Warm hues make objects, shapes or areas appear larger, more important and closer than other colors. Warm hues emphasize the body size and contours. Cool hues make objects, shapes or areas appear smaller less important and further away than other colors. Cool colors minimize body size and shape.

Value describes the lightness or darkness of a color. To change the value of a color white or black must be added, which makes the color lighter or darker.

Value related to Body size and form

Applying value in clothing selection is most important. Exiting and dramatic effects and clever body camouflaging can be created by the use of value in clothing selection.

The extremes of value, very light or very dark or very low values will outline or silhouette the objects, shapes or areas and make the body contours standout white is the lightest value, black is the darkest value white and black garments

are generally strong contrasts to their back ground, especially during day light hours. Because night lighting is low in value compared to day light, darker - value clothing worn in the evening usually blends in to the background. The effect of the value of the color against a background is important for those who do not wish to reveal their body conformation.

Chroma or Intensity

Chroma describes the purity of a color and is expressed as the strength or weakness, the brightness or dullness, or the degree of saturation of a color - chroma and intensity are often interchangeable but, because chroma is the more accurate term, it appears more frequently in color literature. High chroma colors are pure, strong, brilliant saturated colours. Low chroma colors are muted, weak, grayed and dull. Bright, strong, high-chroma colors are conspicuous and make the body appear larger. Dull, weak low-chroma colors are less conspicuous and make the body appear smaller.

1.7 PRINCIPLES OF DESIGNING

Design principles are widely applicable laws, guidelines, biases and design considerations which designers apply with discretion. Professionals from many disciplines—e.g., behavioral science, sociology, physics and ergonomics—provided the foundation for design principles via their accumulated knowledge and experience.

Design Principles – Laws with Leeway

Design principles are **fundamental pieces of advice for you to make easy-to-use, pleasurable designs**. You apply them when you select, create and organize elements and features in your work. Design principles represent the accumulated wisdom of researchers and practitioners in design and related fields. When you apply them, you can predict how users will likely react to your design. "KISS" ("Keep It Simple Stupid") is an example of a principle where you design for non-experts and therefore minimize any confusion your users may experience.

In user experience (UX) design**, it's vital to minimize users' cognitive loads and decision-making time**. The authors of the definitive work *Universal Principles of Design* state design principles should help designers **find ways to improve usability, influence perception, increase appeal, teach users and make effective design decisions in projects**. To apply design principles effectively, you need **a strong grasp of users' problems and a good eye for how users will accept your solutions**. For instance, you don't automatically use a 3:1 header-to-text weight ratio to abide by the principle of good hierarchy. That ratio is a *standard rule*. Instead, a *guideline* you might use to implement good hierarchy is **"text should be easy to read"**. You should **use discretion whenever you apply design principles, to anticipate users' needs** – e.g., you **judge how to** guide the user's eye using symmetry or asymmetry. Consequently, you **adapt the**

principles to each case and build solid experience as you address users' needs over time.

"Design is not a monologue; it's a conversation."

—Whitney Hess, Empathy coach and UX design consultant

Types of Design Principles

Designers use principles such as **visibility**, **findability** and **learnability** to address basic human behaviors. We **use some design principles to guide actions**. **Perceived affordances** such as buttons are an example. That way, we **put users in control in seamless experiences**.

Usability kingpin Jakob Nielsen identified ten "commandments":

1. **Keep users informed of system status** with constant feedback.
2. **Set information in a logical, natural order**.
3. **Ensure users can easily undo/redo actions**.
4. **Maintain consistent standards** so users know what to do next without having to learn new toolsets.
5. **Prevent errors if possible**; wherever you can't do this, *warn* users before they commit to actions.
6. **Don't make users remember information** – keep options, etc. *visible*.
7. **Make systems flexible** so novices and experts can *choose* to do more or less on them.
8. **Design with aesthetics and minimalism in mind** – don't clutter with unnecessary items.
9. **Provide plain-language error messages** to pinpoint problems and likely solutions.
10. **Offer easy-to-search troubleshooting resources**, if needed.

Empathy expert Whitney Hess adds:

1. **Don't interrupt or give users obstacles** – make obvious pathways which offer an easy ride.
2. **Offer few options** – don't hinder users with nice-to-haves; give them needed alternatives instead.
3. **Reduce distractions** – let users perform tasks consecutively, not simultaneously.
4. **Cluster related objects together.**
5. **Have an easy-to-scan visual hierarchy that reflects users' needs**, with commonly used items handily available.
6. **Make things easy to find.**
7. **Show users where they've come from** and where they're headed with signposts/cues.
8. **Provide context** – show how everything interconnects.

9. **Avoid jargon**.

10. **Make designs efficient and streamlined.**

11. **Use defaults wisely** – when you offer predetermined, well-considered options, you help minimize users' decisions and increase efficiency.

12. **Don't delay users** – ensure quick interface responses.

13. **Focus on emotion** – pleasure of use is as vital as ease of use; arouse users' passion to increase engagement.

14. **Use "less is more"** – make everything count in the design. If functional and aesthetic elements don't add to the user experience, forget them.

15. **Be consistent with navigational mechanisms**, organizational structure, etc., to make a stable, reliable and predictable design.

16. **Create a good first impression**.

17. **Be trustworthy and credible** – identify yourself through your design to assure users and eliminate uncertainty.

Principles of Design in Clothing

The principles of design can help when selecting apparel designs at the point of purchase or during customization of construction. The principles can also be helpful not only when selecting separate garments but also when coordinating several garments and accessories into a complete outfit. The principles of design are useful in creating different forms of expression in our artistic manner, which are pleasing and attractive to the eye. Following are the principles of designing.

Balance

In clothing, balance refers to a visual attribution of weight, from a central area. Balance refers to the restful effect achieved through grouping design details to maintain a feeling of equal weight or attraction from side to side, front to back or top to bottom. Pleasing balance brings about a satisfying relationship among all design parts to produce visual harmony.

When the design elements of line, form, shape, space, color and texture are in balance, a pleasing harmony is established in clothing designs, three kinds of balance are observed,

- Formal balance, also called symmetrical balance or bilateral symmetry.
- Informal balance, also called asymmetrical or occult balance.
- Radial balance

Formal balance

Formal balance occurs when object appears to equalize each other by repetition and arranged at equi-distance from the centre. The upper and lower portions of the design are so arranged, as to give an effect of balance. Thus there should not be the effect of too much of weight at the bottom or a heavy appearance. E.g. Dark coloured skirt over lighter shade of pant make a short person appears shorter.

Many examples of formal balance may be found in clothing. Formal balanced designs often give an impression of stability due to the equal or balanced placement of the parts that compose the design. In apparel formal balance may emphasize body irregularities.

Informal balance

Occurs when objects appear to equalize each other but not through repetition and the arrangement is in an haphazard manner. Here design of different sizes and shapes and of different attractions are arranged. The larger and more attractive designs are kept as far away from the centre. If used correctly, informal designs can be effective in being attractive.

Sometimes formal and informal balances are combined in a single garment. This could happen in a dress when the bodice is informal balance and the skirt design is in informal balance. Such an arrangement often lacks harmony and relationship among the various parts. A design with this mix can appear pleasing when there is an interesting transition between the parts that unifies the two opposite effects. Formal balance is the least expensive to produce apparel in mass production. Informally balanced garment is more difficult to produce. For each section of the garment cuts will have to be probably handled differently.

Radial balance

Radial balance occurs when major parts of the design radiate from the central part. Radial balance uses a central point as the focal point. Pleats, seams, gathers, darts or motifs radiate from the focal point creating a sun burst effect.

Emphasis

Emphasis refers to the dominance of one part with subordination of others. A good design should have a design feature which is the centre of interest, while other features support it. Designers often create emphasis partially through the careful arrangement of line, texture and colour. It could also be called as focal point. Every design needs same note of interest that catches the eye on a specific area of the garment; contrasting colour can be used to emphasize an area.

A black dress with white collar and cuffs will direct the eye to the face and hands. Some methods of lay emphasis can be,

- Grouping of design units
- Using contrast of hues
- By leading lines
- A combination of any of the above
- Repeating details such as tucks, gathers, buttons etc.
- Unusual shapes and textures
- Applied design on a contrast background.

While enhancing the design by concentrating in a focal point the designer must bear in mind the figure and personality of the wearer.

The methods used to obtain emphasis are repetition or concentration, 'Decoration on a contrast background'.

Harmony

Harmony refers to unity of design with slight contrast or variety to prevent monotony. If the principle of proportion, balance, rhythm and emphasis are applied creatively, the resultant design is said to have the harmony. First the various parts of the garment (sleeve, skirt, collar etc) should be related to the structure of the style that is every detail should harmonise with each other.

Proportion or scale

Good proportion refers to pleasing relationship between the sizes of various design details in a dress and between the garment itself and the design details.

Proportion includes the relationship of height, width, depth and the surrounding space of each design. The differences in proportion make designs look different from one another. For example, study the proportions of the five rectangles.

Greek law of space division

A space divided in the proportion of 2:3 is very pleasing to the eye. E.g. In a garment proportion of the bodice length to the skirt length must be 2:3 and the yoke length also bears the same proportion to the bodice length. Pockets on the bodice and the skirt must also have the same proportion.

Scale

Scale refers to the relationship between the garment and its design details as well as between the wearer and the garment. E.g. large appliqué motifs attached on a small dress violate the principle of scale.

Rhythm

Rhythm refers to the smooth movement of the eye from one part of a design to another. Therefore a rhythmic pattern needs to be established to give a costume unity. Rhythm can be obtained through regular repetition of shapes and decorative details like tucks, pleats, scallops, buttons etc. Gradations in size also contribute to rhythm. This type is sometimes referred to as dimensioning rhythm.

Rhythm can be achieved through the combination of lines, shape, colour and texture by the following aspects in designing.

● By regular repeats of trims, texture and fabric design and prints.

● Progression or radiation in sizes of trims, colours, textures and fabric designs.

● Radiation or movement from the central point occurring within structural details such as gathers, folds, tucks darts etc.

● Continuous flowing lines such as those in bands of colours, textures and fabric designs.

Fabric design with widely placed motifs may lack rhythm. These designs must be evaluated critically before they are cut and constructed into a garment often

the garment design will interrupt this type of fabric design and produce strange effects.

Each consumer and fashion professional becomes a designer creating an artistic composition when he or she creates a total look through the selection of garments, accessories, hairstyle, and facial adornment.

Hints on Designing of Dresses

To be able to combine the basic elements of the design namely colour, line, texture, shape and form so as to produce charming, interesting and graceful effects, one must necessarily have a knowledge of the principles of art or design classified commonly as harmony, proportion, balance, rhythm and emphasis. These principles will help to create designs of good taste (if applied with imagination) and to evaluate designs critically).

How can you develop taste, imagination and ability to create your own designs? First of all you must collect design ideas by going through fashion magazines, books with historic costume plates, books with pictures of national and peasant costumes, tribal costumes etc., you can also observe costumes displayed in museums, dresses of people in famous portraits and current styles displayed at readymade and worn by well dressed people whom you see at movies, parties, shops, functions etc. Close observation trains the eye to distinguish distinctive designs from commonplace designs and good designs from bad ones.

Secondly you must learn to sketch designs. To start with, using a tracing paper you can trace carefully and exactly few designs from current fashion magazines or pattern books. Later practice free hand drawing first by looking and copying the designs on hand and next by observing each design carefully and then sketching it from memory. After you have trained yourself to do this, you will be able to put down on paper designs of dresses you may have observed while doing window shopping when attending social functions.

Next develop the ability to evaluate or judge designs by critically analysing their design details, decorative details and style lines in relation to the design of the dress and the personality of the wearer keeping in mind the art principles.

Fourthly, train yourself to observe a design and modify it or adapt it to suit current fashions, different types of personalities, different age groups, sex, occasions, and purposes. From one design idea, try to sketch about ten designs with slight variations.

Finally, make an attempt to create your own designs by putting on paper sketches from your imagination which should have been enriched by now by the practice you have been observing and sketching a variety of designs.

Basic cuts or styles

Chemise or A line style : This type of dress is cut in one piece without a waistline seam. This style is also referred to as sacque, shifts etc. and is suitable for pre-school children's dresses, duster coats, nighties etc. To bring the effect of the waist line, a belt can be used. More fullness can be introduced in to the waist line or skirt area of this style by dart manipulation and slash and spread method.

Princess style: This type of dress has no waistline seam but has a vertical seam as shown in the figure.

Middy or long torso style: This is a low waisted dress with the skirt attached to the extended waistline. One piece style with waist line seam at the natural waist line. The skirt for this style may be gored, gathered, pleated flared or circular. The bodice section of this style ends at the natural waistline. The two piece dress e.g. skirt and blouse. The front of the dress may have a waist line seam but the back may be of the 'A' line type.

The dictionary meaning of silhouette is a dart image outlined against a lighter background'. The silhouette of a garment design refers to the outline shape that it gives to the wearer. Silhouette is determined by the texture of the fabric and the cut of the garment, the length and width of the garment, position of the waist line, length of the shoulder seam etc. Silhouettes may be classified as tubular, normal, a line, bell, clinging bouffant etc. The basic feature of the tubular silhouette is a narrow skirt. A line silhouette is produced by a skirt with a slight flare. The bell silhouette is full skirted. Fullness may be in the form of gathers, pleats or flare. A medium bell silhouette and an extreme bell silhouette which is sometimes referred to as bouffant silhouette. Stiff fabrics like organdie and taffeta produce bouffant effect, while clinging fabrics like full voile creates a clinging silhouettes. Thin figures and stout figures should avoid extremely tubular or clinging styles as well as extreme bouffant styles.

Hair styles and neck lines

Face shapes

Fashion magazines show a variety of interesting faces, each reflecting its own type of beauty. Fred Feucht design group studied the popularity of various face shapes among consumers and found the most preferred shape for men was the diamond and for women, the heart.

Face shapes are difficult to determine exactly. Reference books often define faces by eight geometric shapes shown below. (Oblong, Oval, Round, Rectangular, Square, Triangular, Diamond, Heart). The shape of the face is examined with particular attention to the division of space, the proportion of the forehead, cheek width and jawline. Also of interest are the lines formed by the facial features. Some people do not have definite face shape but may be a combination of several shapes.

Neckline

Necklines including collars and lapels are face-framing details of clothing. The shape of the neckline is determined by the lines of the garment design. Square faces are emphasized by square necklines, round necklines by round neck lines as well as by square necklines and so on. A triangular face will be complimented by a short V-neckline which will give length to the square jawline.

Neckline can also visually change the neck width and length by using lines to manipulate the neck space. E.g. a long neck can be visually shortened by using

a horizontal line high on the neck line to divide the space. A short can be made visually longer by wearing a v-neckline.

The neckline is often the most eye-arresting area of the garment. This effect can be erected by either color or base skin. Bright or contrasting colours used at the neckline area attract attention.

Hair styles

The lines of a hairstyle can be analysed by considering the head features and body conformation. To minimize a very round face, select a hair style that is neither completely round not straight. To minimize a triangular face, avoid fullness at the widest and narrowest points of the face.

1.8 SUMMARY

The Principles are concepts used to organize or arrange the structural elements of design. Again, the way in which these principles are applied affects the expressive content, or the message of the work.

Balance: Balance is the concept of visual equilibrium, and relates to our physical sense of balance. It is a reconciliation of opposing forces in a composition that results in visual stability. Most successful compositions achieve balance in one of two ways: symmetrically or asymmetrically. Balance in a three dimensional object is easy to understand; if balance isn›t achieved, the object tips over. To understand balance in a two dimensional composition, we must use our imaginations to carry this three dimensional analogy forward to the flat surface.

Symmetrical balance can be described as having equal "weight" on equal sides of a centrally placed fulcrum. It may also be referred to as formal balance. When the elements are arranged equally on either side of a central axis, the result is Bilateral symmetry. This axis may be horizontal or vertical. It is also possible to build formal balance by arranging elements equally around a central point, resulting in radial symmetry.

There is a variant of symmetrical balance called approximate symmetry in which equivalent but not identical forms are arranged around the fulcrum line.

Asymmetrical balance, also called informal balance, is more complex and difficult to envisage. It involves placement of objects in a way that will allow objects of varying visual weight to balance one another around a fulcrum point. This can be best imagined by envisioning a literal balance scale that can represent the visual "weights" that can be imagined in a two dimensional composition. For example, it is possible to balance a heavy weight with a cluster of lighter weights on equal sides of a fulcrum; in a picture, this might be a cluster of small objects balanced by a large object. It is also possible to imagine objects of equal weight but different mass (such as a large mass of feathers versus a small mass of stones) on equal sides of a fulcrum. Unequal weights can even be balanced by shifting the fulcrum point on our imaginary scale.

Whether the solution is simple or complex, some form of balance can be identified in most successful compositions.

Proportion: Proportion refers to the relative size and scale of the various elements in a design. The issue is the relationship between objects, or parts, of a whole. This means that it is necessary to discuss proportion in terms of the context or standard used to determine proportions.

Our most universal standard of measurement is the human body; that is, our experience of living in our own bodies. We judge the appropriateness of size of objects by that measure. For example, a sofa in the form of a hand is startling because of the distortion of expected proportion, and becomes the center of attention in the room. Architectural spaces intended to impress are usually scaled to a size that dwarfs the human viewer. This is a device often used in public spaces, such as churches or centers of government. The same principle is often applied to corporate spaces through which the enterprise wishes to impress customers with its power and invincibility.

In contrast, the proportions of a private home are usually more in scale with human measure, and as a result it appears friendlier, comfortable, less intimidating.

Use of appropriate scale in surface design is also important. For example, an overly large textile design can overwhelm the form of a garment or a piece of furniture.

A surprising aspect of proportion is the way ideal proportions can vary for the human body itself. Styles change in bodies as they do in clothing. Prior to the 16th century, for example, the female body ideally had large hips and belly. Only later was a small waistline stressed.

In the 17th century and many other periods, the ideal body was much heavier than we would accept today.

Of course, in the last 35 years the ideal personified by the fashion model has fostered a standard which idealizes exceptionally slender body proportions for women. In this century, sports have provided models for ideal male body proportions. Beginning with the rise of televised football in the 1960's, and the subsequent fitness boom, an increasingly exaggerated muscular silhouette, corresponding to that of the uniformed and padded football player, was presented as the ultimate male form. Only in this period could Arnold Schwartzenegger have represented the heroic ideal body image. This trend reached its most extreme form in the late 1970s and early 1980s. Since that time the emergence of basketball as the predominant American sport has led to a more naturally proportioned fit body ideal for men.

In addition, artists frequently take liberties with the natural proportions of the human body to achieve their expressive goals. A well known classic example is Michaelangelo's David, in which distortions of proportion are used by the artist to depict both the youthfulness of the boy David, together with the power of the hero about to conquer the giant Goliath. The surrealist painter Magritte often used distortions of proportions to create striking effects.

The process of design uses the interrelated plastic elements of space, shape, form and line. Line can be either straight or curved. A straight line will have a different effect on the body depending on whether it is vertical (lengthens) horizontal (widens) diagonal (distracts) or zigzag (gives energy). Using curved lines soften that area. An understanding of the impact of these design elements can be applied to clothing selection and personal adornment such as face shapes, hairstyles and necklines.

1.9 GLOSSARY

- **Analogous colors :** Colors that are adjacent, or near one another, on any hue circle (color wheel) and therefore have strong hue similarity. One set of analogous colors is yellow, yellow-green, green, and blue-green.

- **Asymmetry:** The principle of the seesaw transposed into pictorial form. Parts of a composition, unequal in area (size), are balanced in visual weight on either side of an imaginary fulcrum. The fulcrum is the center of visual balance, not the center of the picture.

- **Balance:** A weighing device consisting of a horizontal beam with pans of equal weight on each end. A stable state characterized by cancellation of all forces by equal opposing forces : A stable mental or psychological state. Equality of totals in the credit and debit sides of an account. Equilibrium of opposing visual weights, hues are psychological and physical forces or a combination of these. Our response to balance is intimately linked to our earliest childhood discoveries of our bodies. We instinctively value balance because it is necessary to stand, run, and escape. From this primal physical reality we derive our general preference for balance in composition.

- **Chromatic gray:** Gray created by adding hue to a neutral or by mixing complements to achieve a neutralized color. Refers to grays with a little color in them as opposed to neutral grays with no discernible hues.

- **Compression:** The actual or implied sense of forces pressing inward. The engine cycle during which gas or vapors are compressed. In the visual arts, compression can be used to pack energy into a composition. Like a jack in the box, loaded and ready to spring, a picture plane or sculptural space can be "loaded" with ingredients that press against each other to create an exciting energy.

- **Contour line:** A line of varying thickness and often tone and speed-used to suggest the three-dimensional qualities of an object. Contour line may be applied along as well as within the outer edges of a depicted form.

- **Repetition and Rhythm** - The recurrences or repetition of one or more elements within a visual format, creating consistency and stability. In visual design, rhythm is achieved by the repetition of visual elements such as type, shape, image and layout (grid) in a given design.

- **Alignment** - Alignment brings order to chaos. It is closely associated with the use of grids (a.k.a, Matrixes) in structuring a design.

- **Format** - A 2 or 3 dimensional field or space in which art forms, visual messages, designs, and environments are created (a.k.a. "Composition"). 2-dimensional formats have width and length. 3-dimensional formats have width, length and depth.

1.10 REVIEW QUESTIONS

1. What are the Principles of Design?
2. Discuss the Balance.
3. What is Hierarchy?
4. What is Literal line?
5. What Are The Principles For **Interrelationship of Elements of Design**?
6. **How to Get Variations of Lines in Art**
7. What is **Effect of Texture on physical proportion**?

UNIT

2

IMPORTANCE OF ELEMENTS & PRINCIPLES OF DESIGN IN APPAREL AND TEXTILE

STRUCTURE

2.1   Learning Objective
2.2   Introduction
2.3   The Different Elements of Design
2.4   Student Activity
2.5   Elements and Principle of Design
2.6   Summary
2.7   Glossary
2.8   Review Questions

2.1   LEARNING OBJECTIVE

After studying this unit you should be able to:

● Explain the meaning and definition of Elements of Design.

● Describe the Elements of Design: Space (Negative Space).

● Describe the Elements of Design: Texture.

● Explain the meaning and significance of **Balance**.

● Explain the procedure of **Principles of Fashion Illustration**.

2.2   INTRODUCTION

Fashion design is the applied art dedicated to clothing and lifestyle accessories created within the cultural and social influences of a specific time. Designers create original garments by appropriately using the components of design such that the outcome follows established fashion trends. A design is seen in two folds – a process and a product. As a process, it is planning, organizing to meet a goal, being carried out to meet a particular purpose and as a product, it is an end result, an intended arrangement that is the outcome of that process or plan. The arrangements are done by using the elements and principles of design to create a visual image.

Apparel should be designed considering three major aspects: structure, function and decoration. It should be structurally effective and appropriate for the customers need and as per the day's fashion. Functionally, it should permit the activity a person performs wearing it, and decoratively appropriate to the garment and the wearer. These three aspects are found in a garment when the elements and principles of visual design have been defined as the basic ingredients or components from which visual design is made. Knowledge on the elements and principles of design are fundamental to good designing processes in the field of art and fashion in particular. The language of clothes and the statement that we make in our appearance goes a long way to speak volumes about us and test our understanding of whatever we wear. Ignorance of the basic design elements and principles makes us look odd in the fashion world. Fashion design has three categories of grouping; haute couture, ready-to-wear and mass market which dominate the fashion world today. Made-to-measure are clients' tailored garments which partly include haute couture clothes although couture clothes are usually made from high-quality and expensive fabrics, sewn with extreme attention to detail and finish, often time-consuming with hand-executed techniques. Look and fit take priority over the cost of materials and the time it takes to make. Ready-to-wear clothes are between haute couture and mass market. These clothes are made in small quantities to guarantee exclusivity, so they are rather expensive. The mass market caters for a wide range of customers, producing ready-to-wear clothes in large quantities and standard sizes with relatively cheaper prices.

2.3   THE DIFFERENT ELEMENTS OF DESIGN

The principles of design are useful in creating different forms of expression in an artistic manner, which are pleasing and attractive to the eye. The elements are therefore the raw materials that must be combined successfully. The elements are considered as "plastics" in art language because they can be manipulated or arranged by the designer to create desired illusions. Without a clear cut distinction, JaneAnn (2000) used the word element as representation for both materials of design (element and principles) when she stated that, elements are components or parts which can be isolated and defined in any visual design or work of art, meanwhile Horn (1968) believes these materials of design never appear in isolation in work of art. They are the structures of the work and can carry a wide variety of messages and are important to every designer.

Sumathi (2007), Jane Ann (2000) and Park (2010) have all agreed to the relatedness of elements and principles of design in fashion. Jane Ann identified line as a continuous mark made on a surface with a pointed tool or implied by the edges of shapes and forms. It may characteristically have width, length, direction, focus and feeling thereby conveying the concept of 'mood'. The arrangement of lines in clothing design can cause an item to appear heavier or thinner than what actually is. Each kind of line produces its own special effect. She stated also that colour comes from light and its characteristics are mainly value, hue and intensity but have other categorizations. Its importance relates to its relationship with

nature as warm colours express a feeling of heat or warmth and are in the region of red and yellow. Cool colours on the other hand give a feeling of coolness and are associated with blues, violets and greens due to their representation with coolness in nature.

Sumathi (2007) describes texture as the fell, drape and degree of stiffness and softness of the fabric and may be tactile or implied. Texture is the surface quality of an object. In clothing textures are affected by types of fibres in construction, the construction techniques, finished applied and the types of stitches and decorations included in a piece of work. He opined that balance implies a sense of equilibrium. Pleasing balance brings about a satisfying relationship among all design parts to produce visual harmony and it comes in formal (symmetrical), informal (asymmetrical) or radial forms. Park (2010) asserts that every design needs an accent—a point of interest. Emphasis is the quality that draws your attention to a certain part of a design first. It creates the center of interest by focusing the viewer's attention on a specific area of the design. It may be used to camouflage a figure flaw by drawing attention away from the flaw. The materials of design play an important role in the effects and appearances created in relation to fashion trends. Various effects are created by these elements and principles of design on fashion based on their relatedness and the characteristics associated with them. These elements and principles are equally tools used by individuals and clothing manufacturers in their construction to enhance ones appearance (Payne, 2009). Ambiguity in the clarification of elements and principles of design throughout the last century makes it difficult for design educators to teach students in a clear consistent ways. Some professionals and writers in the field of art and design attempt classifying the elements and principles into their distinct groups, however there are varied opinions on what items can be categorized as elements and those as principles whilst others did not see the need for the separation of these materials of design in the first place. Watson (2003) conducted a survey of sixteen art and design textbooks to determine exactly what informs the categorization of the elements and principles of design. He identified that; some writers separated the elements from the principles although they all did not agree to common items being classified under elements or principles. Others did not spell out whether their classification belongs to one category or the other, implying that they are non-separable while Jane Ann (2000) and some others placed all items listed as principles of design or elements of design). From the survey and other discussions it appears there are no universally accepted categorization of the elements and principles of design. None of the pioneers or researchers agrees on which items to distinguish as elements and those items to be known as principles. Researchers have not agreed on the specific elements and principles.

The Basic Elements of Design

Understanding the fundamentals of design is the first step to creating cohesive and harmonious visuals. When we look at a design piece, our eyes are looking at a composition. By carefully and thoughtfully arranging elements on a page, you are able to portray more than just visuals.

Design is made up of basic elements built into a structure that communicates a message. These elements are the building blocks you need to construct your design. These objects can be arranged in any way as part of your composition; we call this the principles of design. These principles are important concepts that can help you organise the basic structural elements on a page.

We'll dive into seven of the most basic elements in design that can help you improve your content creation skills and ability to communicate through design.

What Are the Elements of Design?

Think of the elements of design as the ingredients you need for a recipe. These basic components are essential in art and design and how you can visually construct pieces. Each element is a crucial part of a visual message, and the combination of these has an impact on how the design is perceived. You can use these elements alone or in combination with each other, depending on what you're looking to achieve.

The main elements are:

- Line
- Color
- Shape
- Form
- Value
- Space
- Texture

A solid understanding of these concepts gives you the ability to understand your design pieces and others you come across. You'll be able to dissect a design piece and see the behind-the-scenes process. Let's take a closer look at each element to have a better understanding of how they work and how to use them.

Elements of Design: Line
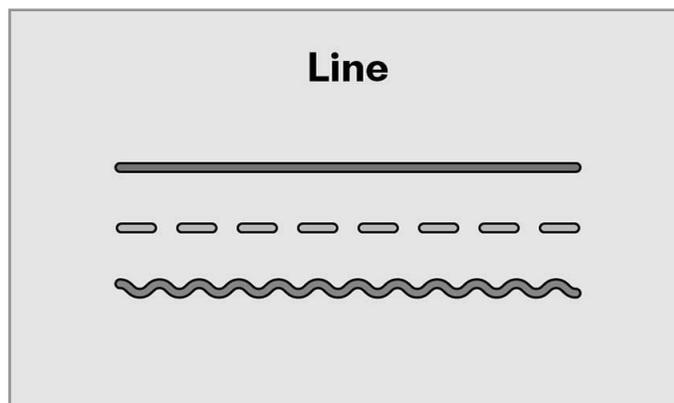
Lines are the most basic elements of design. They come in all shapes, sizes, and colors. Once you start noticing them, you'll see grids all around you. Lines have

direction; they can be visible or invisible and can help direct the eye to a specific spot. The thickness of a line can also communicate certain cues. Bold and thick lines can draw attention, while thin lines are the opposite.

Most, if not all layouts contain invisible lines. Grids are made of multiple lines and lend structure to a page. Lines can be used to create demarcation on a specific section of a design. Depending on the form of the line, you can convey different moods. A simple line can carry so much—for instance, a squiggly line is perceived as young and fun compared to a straight line.

Lines don't necessarily have to be solid. Dashed and dotted lines can also be used and have a friendlier feel than a solid line. Straight lines usually come across as a steady and static element. On the other hand, curved lines are dynamic and give energy to your design.

Elements of Design: Shape
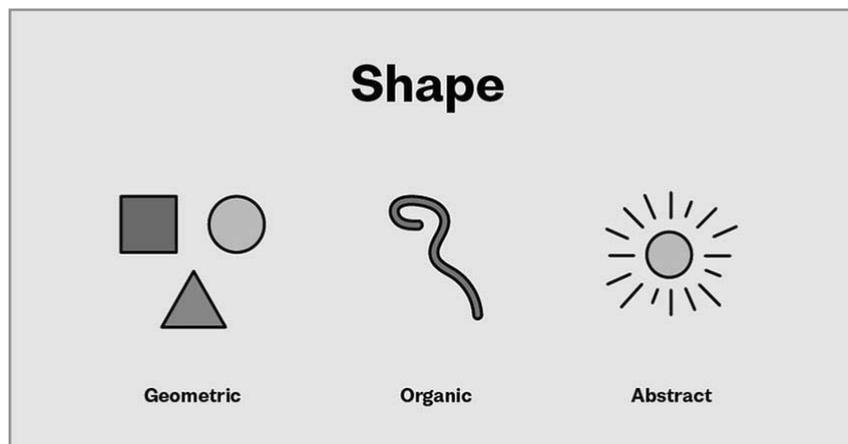
A shape is the result of enclosed lines to form a boundary. Shapes are two-dimensional and can be described as geometric, organic, and abstract.

- **Geometric shapes** have structure and are often mathematical and precise (squares, circles, triangles). You'll notice that the Swiss graphic design movement from the 1950s used mostly geometric shapes in their designs. Shapes can add emphasis to a layout.

- **Organic shapes** lack well-defined edges and often feel natural and smooth. Shapes add emphasis to a layout.

- **Abstract shapes** are a minimalist representation of reality. For instance, a stick figure of a person is an abstract shape. Logos are mostly represented by abstract figures to show the type of business. The icon pack below is a great example of abstract shapes conveying real-life objects and situations.

Depending on the color, form, and size of shapes, we can determine particular moods and send messages. For instance, triangles direct the eyes to a specific point and can also represent stability.

We are surrounded by shapes that we may not think about much; we usually think of shapes as the main geometric structures. For designers, shape is one of the

most important elements when it comes to branding development. These figures are at the root of logos and illustrations.

Elements of Design: Form (Positive Space)

Form (Positive Space)
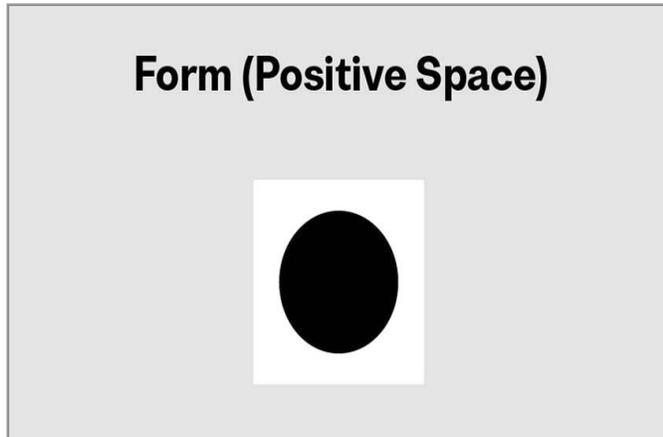
On a page, form is the positive element over the space, the negative element. A dot, line, or shape is a form when placed on a page. Unfortunately, form and shape are mostly used interchangeably. A form can be either two-dimensional or three-dimensional. Many also believe that form is a shape that acquires three-dimensional values, but the correct term is volume.

Form and shape are mutually dependent because changing one would affect the other. The spatial relationship between form and space can create tension and add 3D qualities to your design. Form and space will lend the design lots of visual activity that can help keep viewers engaged. To create a 3D effect in your design, you can add shadows, stack multiple elements, or play with color.

Elements of Design: Space (Negative Space)

Space (Negative Space)
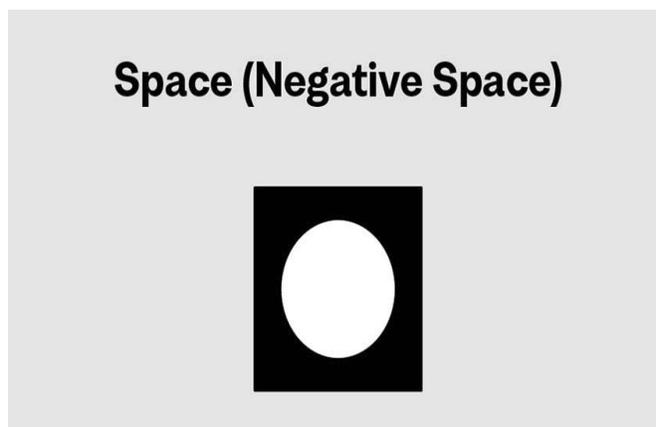
Space is the area that surrounds a shape; it creates a form within the space. Think of it as music: space is the silence between the notes of a song. If all the notes were played together, that would turn into noise.

If you look at a design piece, the negative space is the area that is not occupied by any elements. In essence, it is the background color that you are able to see. For instance, abundant negative space in a layout results in an open, airy, and light background. The lack of negative space can result in a cluttered design. Visually speaking, a layout needs space to achieve a level of clarity within the design. Negative space is a very important element to consider as you are designing a piece.

Below, we have an example of negative space. The geometric forms on the first plane have an identical duplicate as a second plane. This helps add a three-dimensional effect over the negative space. You'll notice the elements are evenly scattered over the background—the negative space.

Elements of Design: Color
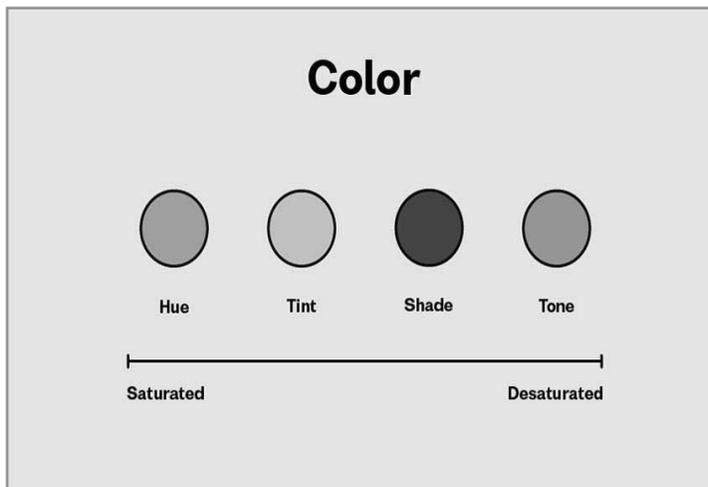
We can apply color to any of the elements we mentioned before this point. Colors create moods and can say something different depending on the connotations associated with it. Color can create an emphasis on specific areas of your design layout.

This element contains multiple characteristics:

● **Hue** is the name of a color in its purest form. For instance, cyan, magenta, and green are pure colors.

● **Shade** is the addition of black to a hue in order to make a darker version.

● **Tint** is the addition of white to a color to make a lighter version.

● **Tone** is the addition of grey to make a color muted.

● **Saturation** refers to the purity of a color. A specific color is most intense when it is not mixed with white or black.

In design, there are two color systems, RGB and CMYK. RGB is a system dedicated to digital design. This additive system stands for red, green, and blue. The colours are produced by adding primary colours together to create various combinations. This mode should be used for designs that will only be used on a screen.

If you want to output your design as a printed piece, you need to use the CMYK system. This subtractive system stands for cyan, magenta, yellow, and black (key).

CMYK reduces the light that would be reflected on a white background to create color. It is extremely important to start a file using the right color system. Converting colors between the systems can result in muted and inaccurate colors.

Elements of Design: Value

Value

High Value   Low Value
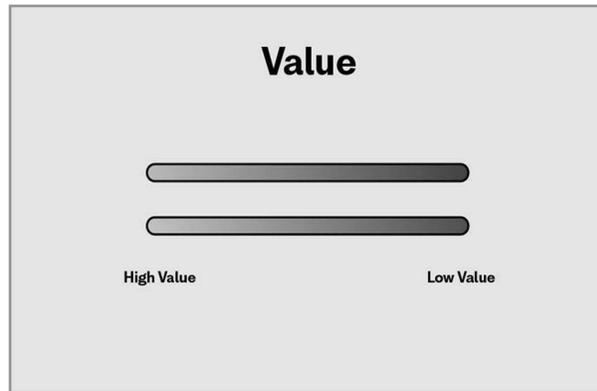
Value refers to the degree of lightness and darkness of a specific hue. Yellow has a higher value than purple because it is closer to white. Value changes create contrast on a page. The reason you can read this text is that the black content contrasts with the white background.

In design, use different tonal values to create emphasis in your design. Create the illusion of movement by overlapping multiple elements with different values. Value is also important in photography. You'll notice that high-value images have a light and airy feel to them, while dark value images feel heavy and dramatic.

Value also defines the spatial relationship between elements. If color values are close between the elements and space, then the design will look flat. If there is a strong contrast between the elements, then the form will be extremely noticeable. The example below features multiple colors with multiple values, which helps add a sense of depth to the design.

Elements of Design: Texture
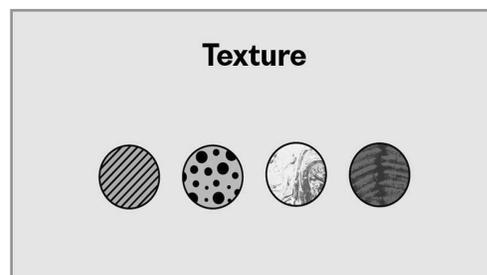
Texture

Texture adds a tactile appearance to a design layout. Imagine how a design piece would feel if you touched it. The goal of texture is to add depth to a 2D surface. Texture can be applied graphically through patterns, either digitally created or an image mimicking the desired pattern. Below is an example of an abstract geometric pattern made up of basic geometric elements.

To achieve an authentic vintage feel, you may try a rough effect as a background or a natural pattern like the wood pattern below. Highly texturized patterns like this can translate the feel of wood grains visually. Textures can also be physical—for example, laser cutters give you the ability to stack multiple shapes and intensify a tactile response.

Add real tactile texture to your design by embossing a texture to paper. This way, you have the chance to create a memorable piece that will certainly stand out from the crowd. Stylistically, it is not ideal to blend multiple textures in a design (unless necessary) as it can be overwhelming for the viewer.

In graphic design, texture can also refer to the elements placed on a page. Multiple layers of text placed on top of each other can lend a unique texture that can't be mimicked by anything organic.

Different textures give off a different vibration—try thinking of different materials if you work with physical shapes. For instance, try using soft surfaces like felt for children's books. Art book designs are the most forgiving for thinking outside the box.

2.4 STUDENT ACTIVITY

1. What is Different Elements of Design? Explain the Elements of Design: Line?

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....

....

2. What is Elements of Design: Texture? Explain the Elements of Design: Color?

....

....

....

2.5 ELEMENTS AND PRINCIPLE OF DESIGN

The Elements and Principles of Design that form integral part of every design work are discussed in almost every beginning design course with basic terminology for understanding the concepts of design (Watson, 2003). The relevance of these materials of design in the creative world of art is unquestionable; however, their categorizations into what items to consider as elements and those to be grouped as principles have not been collectively agreed upon within the creative arts. Davis (1996) considered the elements and principles as being separated or having distinct roles; though he sees both as tools used to create desired visual effects and illustrations, he relates the elements to ingredients and the principles as guideline to manipulating the elements. These materials of design are equally employed in other creative medium: music, architecture, film, theatre, and writing; they also seem to have a base deep in humanity, running across cultures and ethnicities.

Fashion Design Principles + Elements

- Proportion
- Balance
- Shape
- Line
- Rhythm
- Scale

There are more principles and elements to consider, *but for now, we will focus on these six.*

Proportion

Proportion is the biggest and most important fashion design principle when it comes to fashion design and pattern creation.

The reason proportion is important is down to how it can affect the way we look in clothing.

If elements of a design do not relate well to each other, there will not be unity, and the design will look and feel 'off' as in the two images below…

The above garment has far too much going on..:

- Proportion
- Line
- Rhythm
- Shape

Altogether it looks a bit of a mess.

The next image, below, is an interesting dress. That said, the proportion and scale rules have affected it in such a way to make it 'aged'.

Let's take another example: if someone were rather petite, they would most likely not want to be wearing anything oversized – either in length or in width – as this will usually enhance their petiteness, and make them look and feel 'drowned in cloth'.

As noticeable in the image below; this photo shows a woman looking very top heavy, in an oversized sweater.

At the same time, someone who is plus size and average height will want to play with different length proportions of garments in order to not look boxy and square, and thus look longer.

Understanding your own body proportions is essential then, when it comes to creating patterns for yourself that work well proportionally.

It allows you to play around with vertical and horizontal lines in a way that highlighted the elements of your body that you do like, and minimising the areas that you are not so keen on.

The jacket in the image below works well as it meets a key rule of one third / two thirds.

The jacket falls below the thigh which is two thirds of her body length. It looks well balanced because the proportion is great for her height.

Balance

Balance boils down to symmetry and asymmetry. The design is symmetrical if you can cut it straight down the centre front and centre back and have both sides match exactly.

Any deviation – ***even just a pocket placed slightly at an angle on one side*** – makes for an asymmetric garment.

Symmetrical balance is considered to be more usual and normal, but asymmetrical balance exists too, and can also work very well, though most often as evening dresses for that 'wow factor'.

Examples of symmetrical would be:

- Consistent and even hemlines
- Seam lines balanced on both sides of the body
- Design features such as collars and sleeves being equal on either side
- Even and equal placement of pockets, embellishments etc

The dress below is a great example of symmetry. The entire dress is symmetrical, from the overall shape / silhouette, the neckline, even the different colour blocks.

Examples of asymmetrical would be:

● A collar / lapel that is longer and thinner on one side of a jacket only
● A pocket on one side of a skirt
● One sleeve only on a dress

A very simple example of asymmetry, this still gives a balanced feel to the dress.

Now, as we said before, having asymmetry in a garment / pattern doesn't necessarily mean that the balance will be off.

Allowances can be made to offset one side of a garment against another, so that even though they are asymmetrical, they still feel balanced.

This dress is asymmetrical – yet the contoured bodice adds to the very rhythmic skirt / trail of the dress work to complete a balanced design (insofar as we can tell while she is seated).

Shape

Shape, also interpreted by people as silhouette, is a very obvious element of fashion creation. From an A-Line skirt to a couture evening dress by Dior, shape plays the second most important role in successful fashion creation.

This is a very relaxed, loose shape.

The jacket in this image is rather boxy with a minimal waterfall effect front. There is a definite 'square' shape going on, which works well when offset with a fitted lower body.

We think it would be interesting to see the boxy jacket paired with quite solid, structured trousers to better understand the effects of shape and proportion…

This dress is slightly A-line though the effect is lost in the use of a lighter, drapey-ish fabric.

The line connecting the gathered section to the main dress works well to emphasis the shape and also makes the design more interesting by adding rhythm to the lower section.

You can imagine that without it, the simple upper bodice would make for a rather uninspired dress.

Line

Lines are everywhere in fashion.

- Vertical lines
- Horizontal lines
- Waistlines on dresses
- Pleat lines on trousers

The way we use line to break up a pattern into style lines, can help to draw attention to or away from an area of the body.

Lines that are created on a pattern can also be emphasised with seam detailing or adding in 'rhythmic' elements such as ruffles.

While the dress below isn't overly heavy on the use of line, it does show how adding line through the use of altered and minimal ruffles can make for an interesting and balanced garment.

With the layers appearing at the bust, I would suspect that this model was less busty than many others, who would struggle to wear this design in a way that didn't accentuate their bust.

Rhythm

When we think rhythm, we typically think of music. And to be fair it is kind of the same in fashion creation.

The use of colour, shape, line and details all play their part in creating rhythm in a garment. Sometimes certain colours or details jar and feel 'off', while at other times we are blown away by the perfect rhythmic combination used.

This is important to remember when creating patterns. If you were to take a dress and cut it up into sections, how you treat each section will affect the rhythm of the dress.

The image below shows many outfits which have a sense of rhythm throughout. The use of the pom pom detailing – *in the outer leg seam on trousers, on the hem lines of dresses* – help to build up a rhythmic feel to a collection.

Scale

Smaller or larger? Playing with scale when it comes to creating patterns is a lot of fun.

Taking a fitted sleeve, increasing the overall scale of it yet constraining it in its original armhole size is a great playful way of dealing with scale. Or maybe you love pockets, and instead of having two regular size pockets on a jacket, you have multiple pockets scaled up and down in size.

How does a pair of trousers look with regular sized pockets on the butt? And how does the garment change when the scale of those pockets is changed? What effect does playing with scale have on the overall design?

The most obvious way to think about scale though, is in the print on a fabric.

If the print is smaller and less discernible, it has less of an impact and the shape of the design will be clearer. Prints that are louder and busier take away from the shape, line and can even affect the proportion and balance of a garment.

The simple design of the dress below works very well with the scale of the print. If the print had smaller circles, it would feel a bit 'meh' because the shape is so simple.

In this image below however, two different scaled prints are used. The smaller scale print on the bodice works well to minimised the bust, drawing attention away from it, while the larger scale print on the skirt helps with this.

The shape of the skirt also helps to balance the models figure, adding more substance to her hips for an hourglass effect.

Fashion Design Principles Recap

A lot of fashion design principles in this post, to help you see the possibilities open to you once you start creating your own patterns. For people who have not studied design, it can seem daunting, or a mystery, to get your head around. But think of it like this.

1. When you see sewing patterns, you get an idea of what it is about them that you like.

2. Then you see a few sewn up, in different fabrics by different people, and you have a stronger feeling of what works and what doesn't.

3. Sometimes it may feel 'off' or just wrong. In these scenarios it is usually because a design principle or element has been broken but not in a very effective way.

Elements & Principles of Fashion Illustration

The fashion trends change every day. In recent times, fashion designing and styling has gained more importance. A fashion designer works on various elements & principles to make an excellent Fashion Illustration. This greatly determines the end result, which is a stunning designer outfit.

Illustrators often incorporate these in their art work. When used correctly, it becomes an adoring and attractive design.

Let's elaborate about the elements & principles below:

Lines

This refers to the outline of the design. Many items and accessories can be used to add lines to a design. The most common among them is the A-line pattern.

Emphasis and Colour

Emphasis is the principle that is the eye-catching part of a design. The element of a colour is used to achieve this. Use of contrasting and bright colours can make a design lively and add charm to it.

Texture

Each texture has a unique quality and is represented by the fabric used in the making of a garment. Learn Fashion Illustration online and learn to create unique textures from the comfort of your home.

Rhythm

Rhythm is a principle that refers to repetition. It could be same pattern, shape, lines or colours to make the design.

Proportion, Scale and Balance

The proportion of a design plays an important role to achieve balance. This can be symmetrical or asymmetrical. It decides how the design and the person wearing the garment finally look.

Unity

It's a principle which ensures that all the elements of the design are in sync to complete the outfit.

Shape and Form

This is the visual element which has to be accurate because it is the first thing anybody notices in a design.

2.6 SUMMARY

Whether you are working with existing furnishings and fabrics or "starting from scratch" with an empty room, you should always use the elements and principles of design as a guide in choosing everything. The elements are your tools or raw materials, much like paints are the basics to a painter. The **elements of design** include space, line, form, color, and texture. The **principles of design** relate to how you use these elements. The principles of design are balance, emphasis, rhythm, proportion and scale, and harmony and unity.

- **BALANCE:** Visual equilibrium in a room is called balance. It gives a sense of repose and a feeling of completion. A well-balanced room gives careful consideration to the placement of objects according to their visual weight. The elements of line, form, color and texture all help determine an object's visual weight, which is the amount of space it appears to occupy. Balance also refers to how and where you place the elements (line, form, color and texture) within a room. To maintain balance, try to distribute the elements throughout the room.

  - Formal balance, often referred to as symmetrical balance, creates a mirror image effect.

  - Informal balance uses different objects of the same visual weight to create equilibrium in a room. It is more subtle and spontaneous and gives a warmer, more casual feeling.

- **EMPHASIS:** Emphasis is the focal point of the room. The focal point should be obvious as you enter the room; it is the area to which your eye is attracted. Whatever is featured, as the center of interest –a fireplace, artwork or a window treatment framing a beautiful view – must be sufficiently emphasized so that everything else leads the eye toward the featured area; you can add stress to a natural focal point or create one in a room through effective use of line, form, color and texture.

- **RHYTHM:** Rhythm supplies the discipline that controls the eye as is moves around a room. Rhythm helps the eye to move easily from one object to another and creates a harmony that tells the eye everything in the room belongs to a unified whole. Rhythm is created through repetition of line, form, color or texture. It can also be created through progression. Progressive rhythm is a gradual increasing or decreasing in size, direction or color.

- **PROPORTION AND SCALE:** Size relationships in a room are defined by proportion and scale. Proportion refers to how the elements within an object relate to the object as a whole. Scale relates to the size of an object when compared with the size of the space in which it is located.

- **HARMONY AND UNITY:** A well-designed room is a unified whole that encompasses all the other elements and principles of design. Unity assures a sense of order. There is a consistency of sizes and shapes, a harmony of color and pattern. The ultimate goal of decorating is to create a room with unity and harmony and a sense of rhythm. Repeating the elements, balancing them throughout the room, and then adding a little variety so that the room has its own sense of personality accomplishes this. Too much unity can be boring; too much variety can cause a restless feeling. Juggling the elements and principles to get just the right mix is a key to good design.

2.7 GLOSSARY

- **Balance** - The elements of design converge to create a design or arrangement of parts that appear to be a whole with equilibrium.

- **Contrast** - The "automatic principle." Whenever an element is placed within a format, contrast is created in the various elements. This can be emphasized with contrast in size, shape, color, texture, etc.. Contrast offers variety within a visual format.

- **Direction** - Utilizing movement to create the visual illusion of displacement.

- **Economy** - A principle operating on the "slim"; especially important when dealing with clients, where their product or service is more important than the elaboration of design elements. Can also be considered "precise," or "simplistic." Or, it can be considered great design.

- **Emphasis** - Also known as dominance. This condition exists when an element or elements within a visual format contain a hierarchy of visual importance.

- **Proportion** - A two- or three-dimensional element defined by other elements of design.

- **Rhythm** - A recurrence or repetition of one or more elements within a visual format, creating harmony.

- **Unity** - "Oneness," "Harmony," "Gestalt." Unity is the condition of completeness with the use of all visual elements within a format.

- **Anti-aliasing:** Smoothing the jagged appearance of diagonal lines in a bitmapped image. The pixels that surround the edges of the line are changed to varying shades of gray or color in order to blend the sharp edge into the background. This technique is also called "dithering."

- **Banner:** Banners are graphic images that commonly function as Web-based billboards. Banner ads generally appear toward the top-center of the screen, and are used as attention-grabbing links to other sites.

- **Cascading style sheets (CSS):** Code that defines how to display HTML elements in external style sheets that enable you to change the appearance and layout of all the pages in a Web site by editing one single file.

- Experience **architecture:** Multidisciplinary approach to technology involving information architecture, interaction design and experience design practices that aim to provide a good user experience and benefit business.

- **Font readability:** How easy or difficult it is to read a collection of words in a specific type style.

- **Gestalt Principles:** People do not visually perceive items in isolation, but as part of a larger whole. These principles include humans' tendencies towards similarity, proximity, continuity, and closure.

- **High-Fidelity Prototype:** An interactive prototype that simulates the real system or site's functionality and design details.

- **Image placeholders:** Text that provides users with descriptive information about a graphic while it is downloading.

- **Landing page:** The location in a Website where a given user goes after clicking on a link. It is also called Target page or Destination page.

- **Low-Fidelity Prototype:** Low cost, illustrated design or concept usually sketched on paper or created as flat images.
- **Navigation design:** A design phase that interprets information architecture and task flows into wireframes or mockups to demonstrate and test the site structure and visual direction.
- **Page title:** Page titles refer to the text located in the browser title bar (this is the bar found at the very top of the screen of common browsers).
- **Position** - The location at which compositional elements are placed within the visual field or format. Position is commonly described as relative to other compositional elements within the boundary of the visual field or format.
- **Orientation** - The position of a compositional element relative to a format or other objects in the composition. Orientation is the placement of the figure or form within a given space described as "facing forward", "upside down" etc.
- **Scale** - Size and dimension of figures and forms relative to a given unit of measurement. Scale is often described in terms of a notation of dimension of an object as compared to its actual dimension in the physical world.
- Size - A relative term used for comparing figures. The relative terms of "larger" and "smaller" than another are used in describing size. Size aids the viewer to determine scale, depth, and distance in the visual field.
- **Proportion** - A two-dimensional or three-dimensional element defined by its relationship to other elements in a design. In human terms, scale is strongly related in relation to the human body and its relationship to the space around it. Proportion is seen in terms of the relationship between parts in a given design. Proportion is often described in terms of ratios (i.e. 3:4, 9:16, 1:2 etc.)

2.8 REVIEW QUESTIONS

1. What Are the Elements of Design?
2. Explain the Organic shapes.
3. What is meant by Rhythm?
4. What is Shape?
5. Discuss the Horizontal lines**.**
6. Explain the Proportion, Scale and Balance.
7. What Is Color Theory?

UNIT

3

DEVELOPMENT OF MOTIFS AND DESIGNS

3.1   LEARNING OBJECTIVE

After studying this unit you should be able to:

- Explain the meaning and definition of Structural Designing.
- Describe the Structural Design in Garments.
- Describe the Design in Fashion Clothing.
- Explain the meaning and significance of Decorative design.
- Explain the procedure of **Classification of design according to motif**.
- Explain the **Types of Layout**.
- Explain the meaning and significance of **Different Types of Repeats**.

3.2   INTRODUCTION

Development in any field is essential and continuing process so is the field of traditional textiles, due to flourishing demand our commercial market has also started utilizing traditional design pattern and special techniques used in making of textile prints in desired form after necessary manipulation.

Several design process frameworks of various scopes have been examined in the field of apparel design. Watkins (1988) proposed seven design process models adapted from Koberg and Bagnall (1981): accept, analyse, define, ideate, select,

implement, and evaluate. Lamb and Kallal (1992) suggested a more general design framework for apparel design students. This framework was developed from the combination of features from other design process models supporting the 'Functional–Expressive–Aesthetic (FEA) model'. Labat and Sokolowski (1999) reviewed the processes used in various design fields and summarised three steps of the core design process: problem definition and research, creative exploration, and implementation. Previously proposed design process models provide apparel design students with an overview of the entire design process, help them think through essential criteria as they develop design ideas, and provide a guideline for considering small goals during each stage.

Ornamentation of fabric with the help of prints and stripes inherent on fabric or with the help of superficial adherence has evolved over the ages. This generally forms the grooming up of the art of design. Different kinds of prints and patterns are used to evolve a design pattern. Following are the different kinds of motifs.

Ethnic: Prints such as the bandhej, batik, paisleys, chitons, French provincials and other country prints evolving from folklores and influenced with traditional customs are termed as ethnic prints.
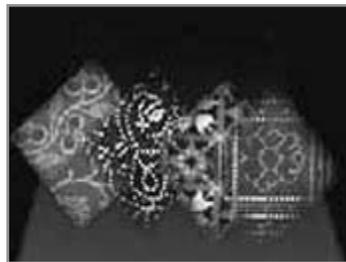
Floral
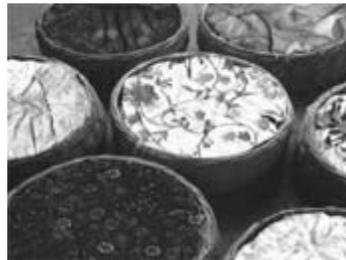
This motif is also known as the natural motifs which are basically depiction of inspirations derived from the nature such as flowers, animals, landscapes and similar inspirations.

Geometrical
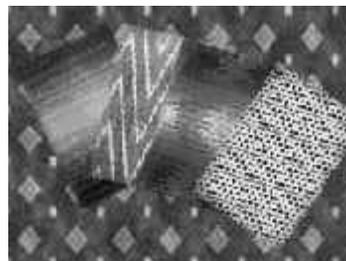
Uses of geometrical figures such as dots, stripes both horizontal and vertical with other geometrical motifs and there combinations are termed as geometrical patterns.
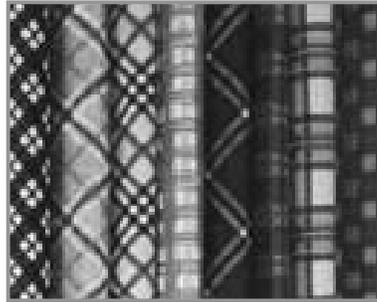
Abstract

Uses of abstract to depict the unknown have always caught the fancy of the people and are often used for design based ornamentation.

Stylized

It is an abstract floral pattern that has a stylized depiction of floras. A very common motif used for textile.

Plaids and checks

Use of a combination of linear lines for creating equal sized checks and unequal sized checks known as plaids, has been a common motif for design development.

The various pieces of costume have gone out of use at different times during the 20th century. The first item to disappear in many areas was leather peasant sandals (opinci), although these could be seen in poorer villages again in the years just after the communist regime fell. In most rural areas men's traditional trousers were replaced by modern factory made trousers by mid century and in the post communism years jeans has become universally common. Traditional over garments became an expensive luxury, new garments only being purchased by people living in the very wealthy villages. More recently the traditional jacket makers in many areas have died with few new artisans being trainer to carry on their craft.

3.3 STRUCTURAL AND DECORATIVE DESIGNS

Structural Designing

Every designer works on a collection. A collection can consist of minimum of six dresses to maximum twenty or more dresses. All the dress belongs to a similar theme. The dresses can be different but should like as if they belong to the same theme. There are two different types/divisions of designing for any theme, which are often inseparable, which can be defined as factors influencing the design, for designing desired garment or outfit. It is necessary to understand what constitutes a good design. Design is an art element to produce an expressive personal idea by knowledgeable manipulation. The entire purpose of spending the time, money and efforts to enhance the garment is to make it attractive and pleasing one.

Structural Design in Garments

All over design of a garment its silhouette and all details, assembling the parts of the design such as darts. Sometimes it may be very plain or very elaborate. Structure in designs is more important because they are fundamental components of a garment. A complete knowledge of the various fundamental elements of design would help a designer to create and design a garment on aesthetic manner.

Elements of Structural Design in Apparel

A design can be defined as an arrangement of elements that create a visual image. Designing means moving elements like lines, silhouette, colors, texture and details from the state of randomness to the higher state of organizing them in a unique way. Structural designing is a science and an art. It is a tool for modern creator and the world of design. It is a way of getting new ideas and inspirations. Structural design includes all elements of design and follows principles of design at the same design.

Structural components are responsible for original beauty of a form. It includes dart manipulation techniques, layers, pleats, yokes, plackets, pockets frills, tucks, flounces, gathers, bows, fasteners. Elements of basic structural design are derived into four ways. They as follow-

1. Silhouette (Straight, Bell, Bustle Silhouette)
2. Lines (Straight and Curved Lines)
3. Colors (Warm And Cold Colors)
4. Textures (Smooth, Stiff, Rough and Shiny)

Silhouette

A silhouette which defines form or shape of a garment, using different types of lines in it in an arrangements of pattern components. It may be very plain or embellished at the same time using appropriate colors and textures as per the theme. A good structural design gives interest in garment, when it gives balanced and proportionate

look of the finished garment. In order to form structural design it is necessary to combine these elements well, and understand the principles of design.
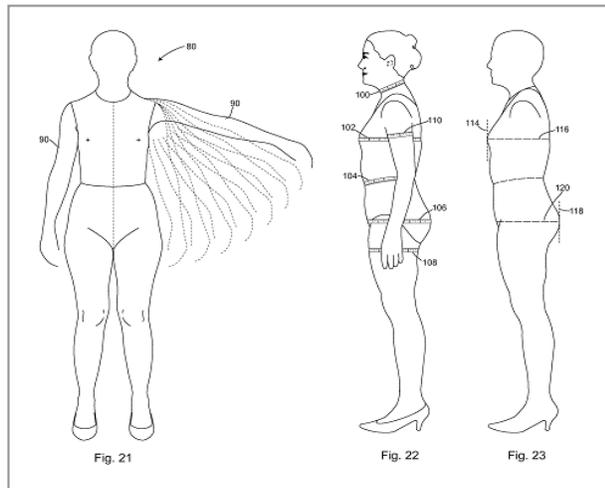
Silhouette (Straight, Bell, Bustle Silhouette)

Lines

Lines play a trick on the eyes. When it is used correctly it becomes potent factor in the development of designer outfit. Generally straight and curved lines are use in garments design.

Colors

Color has greater appeal than other factor. It colors have functional as well as emotional significance. These qualities of colors are very helpful for designing a theme based outfit. The outline of the outfit is noticed very easily, this called shape or form of a garment. To produce harmony in garment, smaller spaces within the silhouette should be related to the larger ones and be in a pleasing proportion.
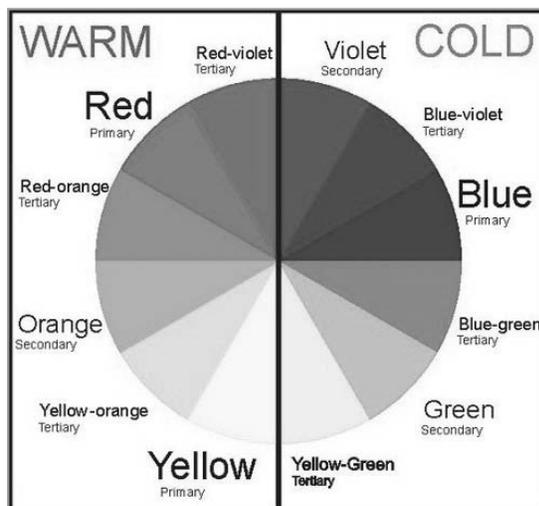
Colors (Warm and Cold Colors)

Textures

Texture is determined by the surface quality and the feel of hand. Some textures of fabric conceal the actual outline of the wear. A well designed garment has a unique structure and appropriateness which make it right for the wearer as well as the theme or the occasion. Desired look of a particular garment can be achieved using these elements in an appropriate way and that designed can be called as structural one.

Classification of Design in Fashion Clothing

Design

A design is an arrangement of elements of design and principles of art like lines, shape, colours, form, fabric, texture, balance, proportion, rhythm and emphasis that create a visual image. For example: to create a new version or a style for garment.

A design which is appropriate for you is fully as important as an appropriate color. If you understand and apply design properly, you are a long step farther along the way to becoming a confidently well **fashion designer** or dress maker.

To create a highest level of design, designers consider carefully all of the art elements and apply his/her knowledgeable manipulation in clothing.

In general, design is the arrangement or putting out creative ideas on paper or any of the three dimensional form.

The nature of design is equally as complex as that of technology.

Archer wrote that: "Design is that area of human experience, skill and knowledge which is concerned with man's ability to mould his environment to suit his material and spiritual needs."

Before designing a garment it is necessary to know, what is design? How to create a good design? Because we spending our lot of time, effort and money only for designing and decorating a garment. To make clothing attractive and pleasing to the eye every **fashion designer** should know about design.

Factors of design

There are four factors that influence design. They are in below:

● Functions
● Materials
● Technology
● Style

Types/Classification of Design in Fashion Clothing

In the **fashion design** area there are two basic divisions of designing. There are two types of design:

Structural Design

Structural design is includes the all over design of a garment. A specific size of dress is expressed by some lines. Each clothes has a specific size and measurement for express the design. Form, shape, color, texture and line involved in assembling the sections of the garment such as dart manipulation techniques, pleats, tucks, layers, yokes, plackets, pockets frills, flounces, gathers, bows, fasteners etc. Structural design details in a dress include collar, sleeves, yokes, pockets, skirts, position of seam lines etc. In **weaving**, different kinds of weave design is use as an example of structural design. The designers in the buying house do these designs.

Structural design in clothing

Structural design may add a decorative quality if emphasized by colour contrast or row of top stitching to outline the basic garment parts. In apparel, structural design is more important because it is the fundamental component of design.

Elements of basic structural design are derived into four ways. They as follow-

- Silhouette (Straight, Bell, Bustle Silhouette)
- Lines (Straight and Curved Lines)
- Colors (Warm And Cold Colors)
- Textures (Smooth, Stiff, Rough and Shiny)

In present day different structural **fashion design** styles are more popular in the world. Most of the famous fashion designers are now create new structural fashion style for runway to show their creativity.

Some popular structural fashion styles are in below:

Luxuriously Ribbed Women's wear

Luxuriously ribbed

Structured Iridescent Fashion

Structured iridescent design

Futuristic Hipster Frocks
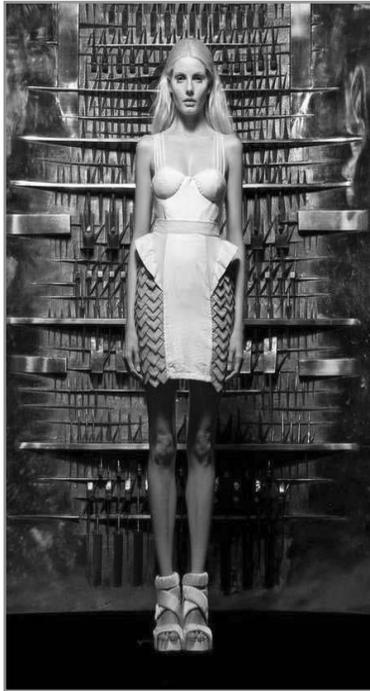
Futuristic hipster frocks

Digitalized 3D Dresses

Digitalized 3D dresses

Abstract Paper Runway Collections

Abstract paper runway

Architectural Fashion Design

Architectural fashion design

Requirements of good structural design:

- It should be well proportion
- It should be suited to the purpose
- It should be suited to the material with which it is made.
- It should be simple.
- It is far more importance than decorative design because it is essential to every object or garment whereas decorative is the luxury of design.

Structural design depends on the form and fabric. It is also created by the construction details as a design. It is inherit in all garments. Because it creates in construction details together including seams, collars, pockets and texture of the fabric. It is an integral part of the garment is a structural design. It may be very simple or to be very elaborate simple or to be very elaborate.

In a garment of a solid colored fabric, its structural design is its silhouette, neckline, placement of the waistline, sleeves, length, location and fitting of darts and tucks.

Decorative design

These designs need the basic form and the designs drawn will be draped over it. It will have more trimmings, prints, embroidery, buttons and tacked on bows. In these designs the fabric, style and colour combinations are described so that one can select the design.

To enhance the beauty and personality of the person, elements of design and its principles should be used appropriately.

Decorative design refers to the surface enrichments of structural design. For the purpose of adding a richer quality, any line, colour of materials that has been applied on structural design is called decorative design.

Decorative design in clothing

Decorative design is drawn by the beginner fashion designer as well as the boutique designers. These drawn will be draped over it. When the design is accepted by the management or senior designer, then they will select the garment that is designed. For these designs the fabric style and color combinations are selected and make a sample for approval. It is the design and outfit is made for an individual customer. Structural designs are more permanent better quality and expensive; and more durable than decorative designs.

Basic beauty is the structure of design. Decorative design is only the luxury. e.g.: After weaving, when the impart design it is express decorative. To increase the garment luxury the outer ornamentations are added. Decorative design may consist of unusual buttons, a belt buckle, a constructing collar and cuffs. Example: Appliqué, printing, embroidery, quilting, painting and any kind of trimmings for clothing decoration.

Requirements of good decorative design:

- Decorative design should be used in moderate the design and quality.
- It should be placed at a structural points and strengthen the shape of the object.
- The decorative design should be suitable for the material and for the type of service.
- There should be enough background space to give an effect of simplicity and dignity to design.
- Surface pattern should cover the surface quietly.

The basic requirements of a good decorative deign for clothing:

Decorative design should reinforce the basic design concept created in the construction of the garment. This is achieved when the placement of trims is created to the structural design. Decorative design is very attractive when it is created in size and structure to the textile of the garment. Suitable combination of textures includes:

- Embroidery designs apply for fine fabric.
- Rickrack applies for medium weight cotton dress.
- Sequence for shiny fine material

Other classification of design for clothing

On the basis of variation of features, sources of beauty, senses, motive and personality design can be classified in different heads. Such as;

Classification of design according to motif-

- **Natural design:** It is the design where motifs are collected from nature. Here flowers, leaves, creepers, animals, hills and mountains, rivers and streams are taken as subject matter.
- **Conventional Design:** When an object from natures adopted to suit the purpose of the object and be decorative the motif ceases to be naturalistic.
- **Geometric design:** In this system motif like circles, triangular, square, rectangle, oval, parallel lines and other shapes are used to perform the design.

- **Abstract design:** It is the design which follows certain complicated motif to sketch anything. Motif which does not have the nature as the source but the combination of lines producing irregular form i.e. not easily recognized. The modern art is an abstract design.

- **Stylized design:** It is the design where the designers are uses his or her personal creative power giving due importance of the time being natural stylized designs are made of through basic system.

Classification of design on the base of beauty-

- **Distinctive design:** This design distinguishes address for its special tracing.

- **Classic design:** The design which helps dresses to be differentiated easily is called classic design.

- **Ordinary design:** In this process dresses are plainly designed, it may be considered as an ordinary one.

- **Poor design:** The design which doesn`t add beauty or increase that it may be considered as an ordinary one.

Classification of design according to sense, motive and personality-

- **Athletic design:** This type of design is use on games, sports and exercises related to dresses like football, cricket, basket ball, swimming and running.

- **Romantic design:** The dress made ready to reveal out or express cheer of mind, emotion and imaging concept is called romantic design.

- **Grammen design:** It is the dress which reveal out over flowing youth after design. The word grammen means-small in size, young in age and friendly casual in manner to en-light these specialties.

Classification of design according to source-

1. **Architectural design:** Architecture and fashion have a lot in common, both **fashion designer** and architect use geometry to generate forms; they create structure, design lines and shapes.

   It is the design where fabrics as a building materials, creating both hard and round lines. Oversize proportions, exaggerated angles. Use strong silhouettes with emphasis on structure, shape and form. Major pleats, folds, pinning, layering, surface texture and three dimensional designs are apply to make this kind of design.

   Fashion can often be ephemeral and superficial, and uses soft, fluid materials; whereas architecture is considered monumental and permanent, and uses strong, rigid materials.

2. **Historic design:** It refers to the famous monuments or building, historical costumes like historic temple, Taj Mahal, different periods costume design and motif of emperors etc.

3. **National design:** National design mainly influenced by the country culture, religion, social commitment, people acceptance etc.

4. **Modern design:** To do this kind of design, **fashion designers** are following the latest trend in the world.

Requirements of Good Decorative Design:

1   It should be used in moderation

2   It should be placed at a structural points and should strengthen the shape of
the object

3   The decorative design should be suitable for the material and for the type of
service it must give.

4   There should be enough background space to give an effect of simplicity and
dignity to design.

5   Surface pattern should cover the surface quietly

Types of Decorative Design

They are 5 types of decorative design.

a.   Naturalistic

b.   Conventional

c.   Abstract

d.   Historic

e.   Geometric

a.   Naturalistic Design: When objects from nature are selected and are reproduced
exactly with photographic correction it is known as naturalistic design. eg:
Flowers, leaves, animals and landscape.

b.   Conventional Design: When an object from nature s adopted to suit the purpose
of the object and be decorative the motif ceases to be naturalistic.

c.   Abstract Design: Motif which does not have the nature as the source but the
combination of lines producing irregular form i.e. not easily recognized. The
modern art is an abstract design.

d.   Historic Design: It refers to the famous monuments or building of historic
importance. e.g.: Temple, Taj Mahal

e.   Geometric Design: It is not derived from nature. It is derived from circles,
rectangle, triangle, parallel lines and so on.

The basic requirements of a good decorative deign for clothing are as follows:

Applied and design should reinforced the basic design concept created in the
construction of the garment. This is achieved when the placement of trims is
created to the structural design.

Decorative design is very attractive when it is created in size and structure to
the textile of the garment. Suitable combination of textures includes:

1.   Fine embroidery for fine fabric

2.   Ricrac for medium weight cotton

3   Sequence for shiny fine material

Types of Decorative Design

There are 5 types of decorative design.

Types of Decorative Design

There are 5 types of decorative design.

They are :

Naturalistic Design

When objects from nature are used as such, it is known as naturalistic design. The designs can be selected and reproduced exactly. Examples: Flowers, leaves, animals and landscape. The inspirations for design selection vary from designer to designer, time to time and place to place. The inspired designs from nature can be applied on textiles and garments in the form of silhouettes, print patterns, textures and colours. The selection of the design varies depending on various factors such as age, sex, body structure, occasions, and purpose. It depends on the preference, mood and interest of a designer.

Example - Sunrise, trees and forest

Naturalistic Design

Conventional Design

When an object from nature is adopted to suit the purpose of the object and be decorative, the motif ceases to be naturalistic.

Example - Fruits – Mango, flowers - hibiscus and animals or birds – Peacock.

Conventional Design

Abstract Design

Motif which does not have nature as a source but the combination of lines producing irregular form. These designs are not easily recognized. The modern art is an abstract design.

Examples: Wavy designs, ripples, designs with lines etc.

Abstract Design

Historic Design

It refers to the designs depicting famous monuments or building of historic importance.

Examples: Temple, Taj Mahal.
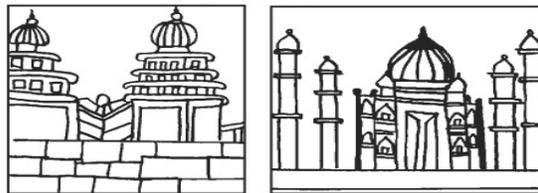
Historic Design

Geometric Design

It is not derived from nature. It is derived from geometric patterns such as circles, rectangle, triangle, parallel lines and so on.
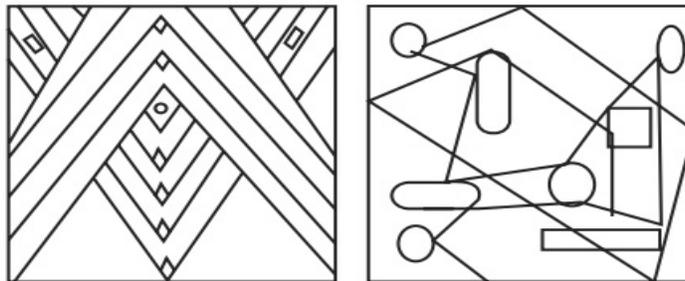
Geometric Design

3.4 TYPES OF LAYOUT AND REPEATS DESIGNS

Types of Layout

Laying out the pattern on the fabric to prepare for cutting is an important step that must be done carefully and accurately for great looking results.

A well sewn garment starts at the cutting table. Laying out your pattern on the fabric to prepare for cutting is an important step that must be done. Layout has to follow a specific pattern which mainly depends upon the type of the garment,

the pattern pieces and the width of the fabric. The types of layout are lengthwise centre fold, off centre lengthwise fold, cross wise centre fold, off centre cross wise fold, combination fold and open layout.

Principles of Pattern Laying

Some of the principles to be followed while laying patterns:

1. Press the fabric as well as the pattern pieces flat before laying the pattern on the fabric.
2. Use a large table or any hard flat surface for accommodating the work.
3. If an open layout is used, place the fabric right side up on the table. For all other layouts fold the fabric right sides facing and wrong sides out.
4. Decide on the best way to fold your cloth this will depend on the width of the cloth, width of your pattern pieces, the type of cloth and design of the garment (whether left and right haves are identical. Whether many pieces have to be cut on fold the garment (whether left and right halves are identical, whether many pieces have to be cut on fold)

Types of Layout Design in Apparel Industry

The way in which machinery, equipment and material are arranged in a working area determines the layout in that area. In the **apparel manufacturing** industry layout is often determined at the outset of operations, i.e. when a plant or even offices starts operating. Even if the infidel layout was well throughout, a re-examination of the utilization of space is often called for because of various factors, among them the following:

● New products are added or product design changes introduced. Both types of action may necessitate a different sequence of operations.

● New equipment or machinery or a different shape and size of materials are introduced.

● Materials-handling equipment that has different shape requirements from the original equipment is acquired.

● Modifications are made to the building to increase shape.

● Temporary arrangements may have been made to cape with an upsurge of demand for a certain product, but these then remain semi-permanent.

● Moves are made by management toward advanced technologies such as the use of robotics, automation, computer networking or flexible manufacturing systems.

When situations like these arise, it is said that the plant or a working area has outgrown is present layout. Operations become cumbersome with either congestion or lengthy and unnecessary movements of products in-progress or operators often with crises-crossing lines of production resulting in loss of time and energy.

Layout design in apparel industry

Types of layout system in garment industry

A layout has to start by distinguishing among four basic types-

1.   Layout by fixed position
2.   Layout by process or function
3.   Layout by product or line layout
4.   Layout making possible group

Layout by fixed position

This arrangement is used when the material to be processed does not travel around the plant but stays in one place; all the necessary equipment and machinery are brought to it instead. This is the case when the product is bulky and heavy and when only a few units are made at a time. Typical examples are shipbuilding or aircraft construction, and the manufacture of diesel engines or large motors.

Layout by process or function

Here all operations of the same nature are grouped together, for example: in the garment industry all the cutting of material is carried out in one area, all the finishing in a third, and so on. This layout is usually chosen where a great many products which share the same machinery are being made and where any one product has only a relatively low volume of output. Other examples are **textile spinning** and weaving, and maintenance workshops.

Layout by product or line layout

Sometimes popularly referred to as "mass production". In this layout all the necessary machinery and equipment needed to make a given product are set out in the same area and in the sequence of them manufacturing process. This layout is used mainly where there is a high demand for one or several products that are

more or less standardized. Typical examples are soft drinks bottling, car assembly and some canning operations.

Layout making possible group

Group layout in practice a combination of two types or more of layout may exist in working area. Recently, in an effort to increase job satisfaction, several enterprises have arranged their operations in a new way, with a group of workers working together on a give product or on a part of a product and having at had all the machinery and equipment needed to complete their work. In such cases the workers distribute the work among them and usually interchange jobs.

This is particular true when a shift is made from a layout by function to a line layout for one or more products whose output has been significantly. In most cases, however, a careful analysis of the flow is called for before any decision is taken to change a give layout, since this is usually a costly process, and management has to be convinced that real savings will result before authorizing the change. If each and every garment factory follows that procedure or system before planning the production then our RMG sector can be more developed.

Repeat

Have you ever tried to sew an item or clothing or make a pair of drapes? Were you able to match fabric pieces so the pattern on them lined up without gaps? The point where an identical design begins again on a textile is called a **repeat**. Textile designers use repeats because they can enable large pieces of fabrics to be printed without breaks or awkward gaps in a pattern. The idea of repeats in textile designs has been around for a long time, and there's an endless variety of them. Why use repeats? The goal is to make a textile design look like it never ends. It can be an effective decorative strategy and can be done on almost any type of fabric. Today, with digital technology, the variety and complexity of repeats can be almost endless. And by the way, if you've ever tried to wallpaper a room and worked to make sure the pattern lined up, that's another example of a decorative material using repeats.
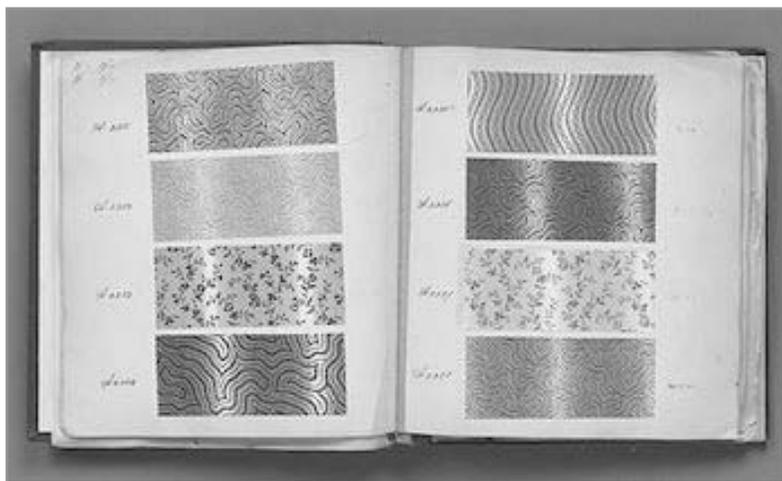
Fabric sample booklet with examples of different kinds of repeats, ca. 1850

Within the textile industry, there's another, more specific meaning for repeat. It's also the distance between identical figures in a repeat pattern, the number of inches before the whole pattern starts over. Small repeats like dots simply cover the fabric for a uniform appearance. Large repeats (for example, paisley prints on drapery fabric) may take up more inches before the pattern repeats. In fact, the standard for upholstery fabric is a 48-inch wide piece of fabric with designs that use a 24-inch horizontal repeat. That means the design starts over every 24 inches.

Different Types of Repeats

Repeat patterns may run horizontal or vertical. Designers have many ways of taking a single figure and covering a textile with it. Now let's look at a few of the most basic types of repeats. For this discussion, the word 'figure' means a single design element. It's this element that will be used to create the repeat.

A **block repeat** takes the figure and places it on a simple grid. The figure, always pointing in the same direction, appears over and over again in rows that line up vertically and horizontally.
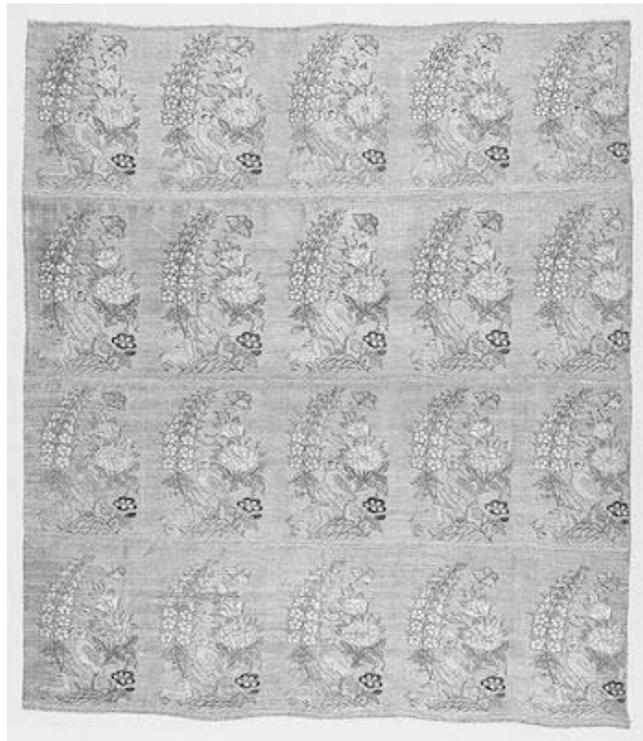
Block repeats on a 17th century silk

A **half-brick repeat** takes each horizontal row and staggers it so that it doesn't line up with the rows above and below it. This repeat pattern gets its name from the resemblance to how bricks are laid to form a brick wall. The figure is placed over and over again along a horizontal row. Then, when the next row is placed, instead of forming a simple grid, the pattern is offset so the figures don't line up vertically.

Fig. Example of a half-brick repeat.
(Notice how each row of figures is offset from those above and below it.)

Now, take that type of offset pattern and make it vertical instead of horizontal. A **half-drop repeat** places the figure over and over again in a vertical column. Then, in the next column, each figure is offset halfway from the ones in the neighboring column so the figures don't line up horizontally. Think of a brick wall placed on its side so that each row of bricks runs in long vertical columns. This kind of repeat, by the way, is one of the most popular in textile design.
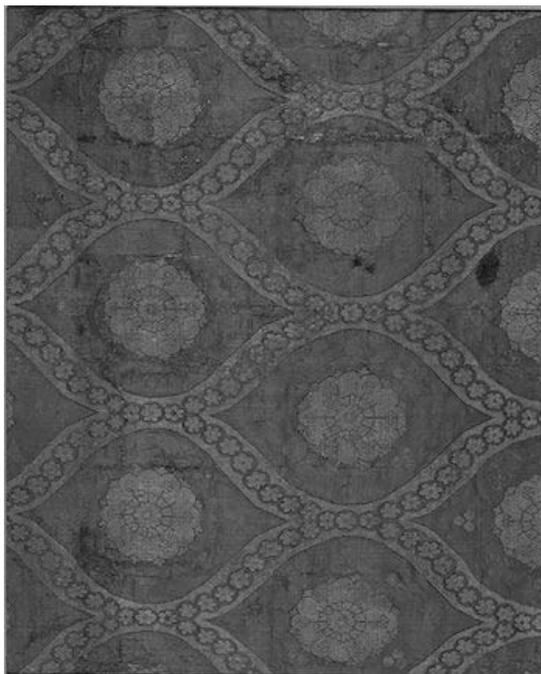
half-drop repeat

Repetition

Repetition is an important design principle that brings an overall movement and progression in your design. Repetition means repeating the same element at a set interval. For example, repeating a certain shape or a color at a regular interval counts as repetition in design.

Now while this may seem counter-intuitive to the layman, it is actually considered one of the design's best practice. Repetition, when done correctly and tastefully, does not look mundane or run-of-the-mill. Instead, it makes the design look unified and cohesive.

Here are some benefits of repetition in your Fashion Clothing logo:

● Repetition makes your fashion logo follow a certain line of thought or theme.

● Repetition allows for a unified visual branding.

● You can safely repeat the same elements in other areas of your branding.

Difference between Repetition And Pattern

While you may also use Pattern in your fashion clothing logo, right now the principle we are discussing is repetition. And it is slightly different from the pattern. A pattern is where a set of elements are repeated throughout the design, instead of the repetition of one single element. For example, this is an example of a pattern:

In the above pattern, you can detect a repetition of three different types of shapes. A regular, set interval of repetition of these multiple elements makes up a pattern.

These icons are an example of repetition where a single shape or element is repeated throughout to create an overall image:
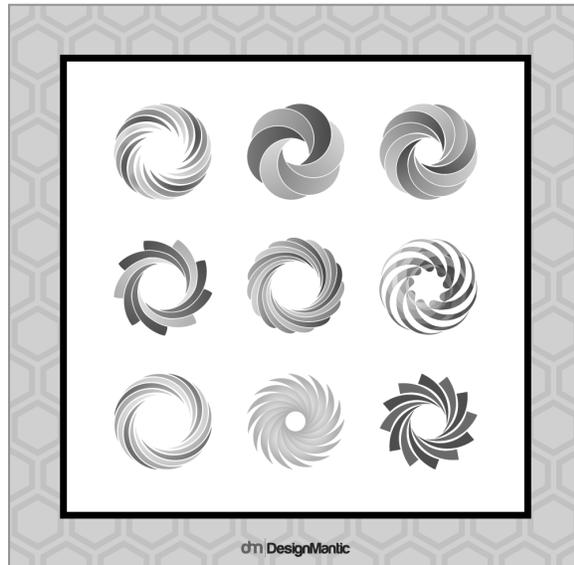
Let's look at some examples to see how some brands have used repetition in their fashion logos.

Using Geometric Shapes To Create Repetition
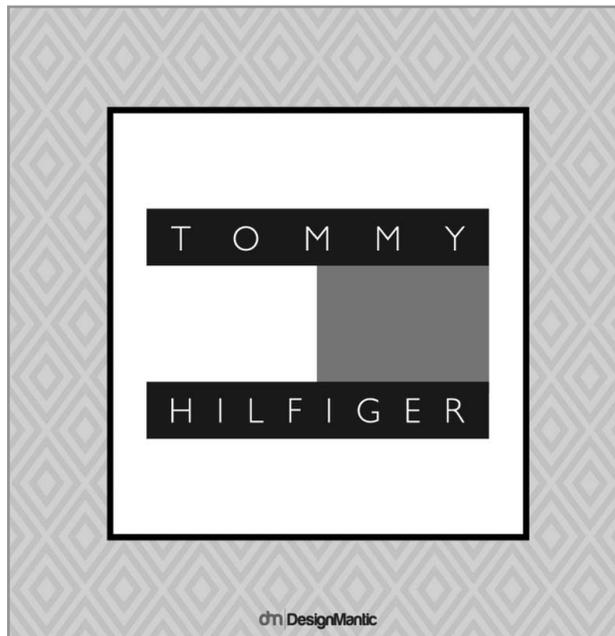
The above logo by Tommy Hilfiger uses a very simplified form of repetition. They repeat two kinds of rectangles to make the overall logo. The rectangles are then rendered in different colors; red, blue and white. A simple sans serif font graces the overall logo and gives it a very modern look. The logo is minimalistic, clean and compelling.

Geometry plays a great part in logo designing, if you want to use this approach, you can make use of circles, triangles, hexagons or any other shape to create a repetition in your logo.
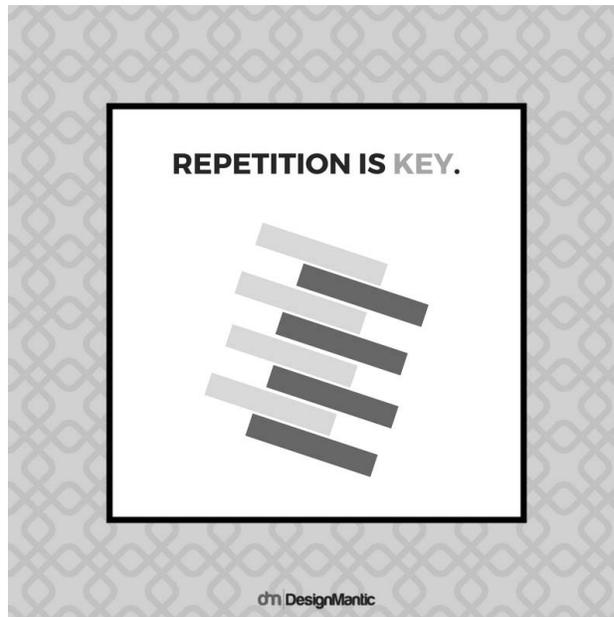
Using Symbols of Font Characters to Create Repetition

Repetition in your fashion clothing logo may also be created using font characters or symbols. For example, in the case of the already discussed Chanel logo, an image is created using the letter 'C'. You can use the initial letter of your brand name for this kind of repetition. Brands love to use this technique in their logos.

Using Organic Elements To Create Repetition

You can also make use of organic shapes to create repetitions. These shapes do not necessarily need to be set, well-defined shapes. It can be anything that you create; a part of an arc, a free flowing curve or even anything else. For example, these fashion boutique logo icons use organic repetition:

3.5   STUDENT ACTIVITY

1.   What is Structural Designing? Explain the Elements of Structural Design in Apparel?

....

....

....

2.   What is Classification of Design in Fashion Clothing? Explain the Requirements of good structural design?

....

....

....

3.6   METHOD OF DESIGNS AND THE PROCESS OF REPEATING PATTERN

The main objective of the project reported on here was to introduce interaction design methods in fashion design teaching to make act design explicit throughout the different stages of the design process in a systematic manner; to develop a general workshop curriculum in experimental fashion design focusing on the expressiveness of wearing and use.

Working with Patterns

First, on a large, flat and uncluttered workspace, take the pattern pieces from the envelope and unfold them, sorting out the ones you'll use. Review the pattern instructions to make sure you understand them.

Perhaps you want to change the pattern. This process is called **pattern alteration**. When you alter a pattern, you revise the drawing you'll use to cut the fabric. To alter patterns, you can redraw seam lines or darts. **Darts** are folds or tucks built into a garment to give it shape.
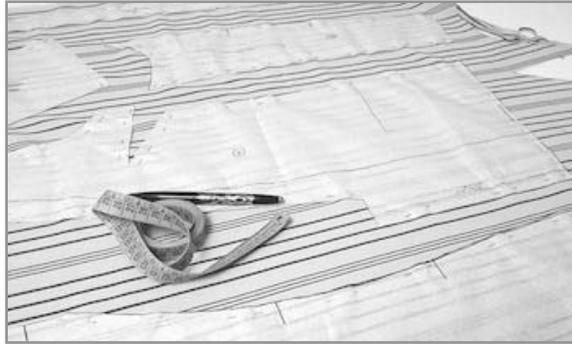
Alterations are often done as changes to the paper pattern before cutting fabric

Other alterations include making certain dimensions larger or smaller, for example shortening a skirt. If you add alternations, make sure to mark the changes on all relevant seams, and mark equal amounts of change for things like sleeves and cuffs. Make sure changes to multiple curved seams maintain identical curving lines. You don't want one half a necklines curving more deeply than the other.

Fabric Preparation

Now prepare your fabric by washing and prepping it. Flat, wrinkle-free fabric will allow more accuracy when you cut the pattern.

The instructions will show various ways to lay out pattern pieces on the fabric. The instructions might include multiple diagrams, because they're used for different sizes and related garment styles. To avoid confusion, circle the diagram or guide for your project.

For instance, the diagram might tell you to place the pattern so it follows the fabric grain. **Fabric grain** refers to the way the threads run in the fabric, often interlaced in vertical and horizontal lines due to the weaving process. These threads are called warp and weft threads. The **warp** runs vertically and the **weft** is perpendicular to it.

Another term to know is selvage. **Selvage** is the self-finished edges of a fabric, and it runs parallel to the warp threads. It's tightly woven to keep fabric from unraveling and difficult to sew through. Often, the selvage includes printed information, so it's easy to identify. When laying out your pattern, stay away from the selvage.

Selvage is the tightly woven edge of fabric, often with written information on it

The pattern might tell you to cut fabric on the bias. The **bias** is a 45-degree angle across the surface. You can determine it by folding a corner of fabric across to the opposite edge. The resulting fold lies along the bias. Cuts along the bias are stretchier because they don›t follow warp or weft threads.

This might sound like lots of technical jargon, but understanding selvage, fabric grain and bias is important. It will help you to cut fabric pieces the right way. They›ll be easier to assemble and will maintain the desired shape in your finished garment.

Pattern (sewing)

In sewing and fashion design, a **pattern** is the template from which the parts of a garment are traced onto fabric before being cut out and assembled. Patterns are usually made of paper, and are sometimes made of sturdier materials like paperboard or cardboard if they need to be more robust to withstand repeated use. The process of making or cutting patterns is sometimes condensed to the one-word **Patternmaking**, but it can also be written **pattern (-) making** or **pattern cutting**.

A **sloper pattern** (home sewing) or **block pattern** (industrial production) is a custom-fitted, basic pattern from which patterns for many different styles can be developed. The process of changing the size of a finished pattern is called **grading**.

Several companies, like Butterick and Simplicity, specialize in selling pre-graded patterns directly to consumers who will sew the patterns at home. Commercial clothing manufacturers make their own patterns in-house as part of their design and production process, usually employing at least one specialized patternmaker. In bespoke clothing, slopers and patterns must be developed for each client, while for commercial production; patterns will be made to fit several standard body sizes.

Pattern making

A **patternmaker** typically employs one of two methods to create a pattern.

The **flat-pattern method** is where the entire pattern is drafted on a flat surface from measurements, using rulers, curves and straight-edges. A pattern maker would also use various tools such as a notcher, drill and awl to mark the pattern. Usually, flat patterning begins with the creation of a sloper or block pattern, a simple, fitted garment made to the wearer's measurements. For women, this will usually be a jewel-neck bodice and narrow skirt, and for men an upper sloper and a pants sloper. The final sloper pattern is usually made of cardboard or paperboard, without seam allowances or style details (thicker paper or cardboard allows repeated tracing and pattern development from the original sloper). Once the shape of the sloper has been refined by making a series of mock-up garments called *toiles* (UK) or *muslins* (US), the final sloper can be used in turn to create patterns for many styles of garments with varying necklines, sleeves, dart placements, and so on. The flat pattern drafting method is the most commonly used method in menswear; menswear rarely involves draping. You can learn pattern drafting on many fashion design courses either on a short further education course or as part of a Fashion degree at a university.

The **draping method** involves creating a muslin mock-up pattern by pinning fabric directly on a form, then transferring the muslin outline and markings onto a paper pattern or using the muslin as the pattern itself.. Designers drafting an evening gown or a sculpted dress which uses a lot of fabric, typically cut on the bias, will use the draping technique, as it is very difficult to produce with a flat pattern.

Pattern digitizing

After a paper/fabric pattern is completed, very often pattern-makers digitize their patterns for archiving and vendor communication purposes. The previous standard for digitizing was the digitizing tablet. Nowadays, automatic option such as scanner and cameras systems are available.

Fitting patterns

Mass market patterns are made standardized, while human bodies vary, so store-bought patterns only fit a small proportion of people well, and an experienced sewist can adjust standard patterns to better fit any body shape.

So, a sewist may choose a standard size (usually from the wearer's bust measurement) that has been pre-graded on a purchased pattern. They may decide to tailor or adjust a pattern to improve the fit or style for the garment wearer, using french curves, hip curves, and cutting or folding on straight edges. There are alternate methods, either directly on flat pattern pieces from measurements, using a pre-draped personalized sloper or using draping methods on a dress form with inexpensive fabrics like muslin.

Creating a muslin (also called toile using calico), similar to a garment template, is one method of fitting. Muslin material is inexpensive and is easy to work with when making quick adjustments by pinning the fabric around the wearer or a dress form. The sewist cuts muslin pieces using the same method that they will use for the actual garment, according to a pattern. The muslin pieces are then fit together and darts and other adjustments are made. This provides the sewer with measurements to use as a guideline for marking the pattern pieces and cutting the fabric for the finished garment.

Pattern grading

Pattern grading is the process of shrinking or enlarging a finished pattern to accommodate it to people of different sizes. Grading rules determine how patterns increase or decrease to create different sizes. Fabric type also influences pattern grading standards. The cost of pattern grading is incomplete without considering marker making.

Standard pattern symbols

Sewing patterns typically include standard symbols and marks that guide the cutter and/or sewer in cutting and assembling the pieces of the pattern. Patterns may use:

● Notches, to indicate:

- Seam allowances. (not all patterns include allowances)
- Centerlines and other lines important to the fit like the waistline, hip, breast, and shoulder tip, etc.
- Zipper placement
- Fold point for folded hems and facings
- Matched points, especially for long or curving seams or seams with ease. For example, the Armscye will usually be notched at the point where ease should begin to be added to the sleeve cap. There is usually no ease through the underarm.

- Circular holes, perhaps made by an awl or circular punch, to indicate:
  - A dart apex
  - Corners, as they are stitched, i.e. without seam allowances
  - Pocket placement, or the placement of other details like trimming
  - Buttonholes and buttons
- A long arrow, drawn on top of the pattern, to indicate:
  - Grainline, or how the pattern should be aligned with the fabric. The arrow is meant to be aligned parallel to the straight grain of the fabric. A long arrow with arrowheads at both ends indicates that either of two orientations is possible. An arrow with one head probably indicates that the fabric has a direction to it which needs to be considered, such as a pattern which should face up when the wearer is standing.
- Double lines indicating where the pattern may be lengthened or shortened for a different fit
- Dot, triangle, or square symbols, to provide "match points" for adjoining pattern pieces, similar to putting puzzle pieces together

Many patterns will also have full outlines for some features, like for a patch pocket, making it easier to visualize how things go together.

Patterns for commercial clothing manufacture

The making of industrial patterns begins with an existing block pattern that most closely resembles the designer's vision. Patterns are cut of oak tag (manila folder) paper, punched with a hole and stored by hanging with a special hook. The pattern is first checked for accuracy, then it is cut out of sample fabrics and the resulting garment is fit-tested. Once the pattern meets the designer's approval, a small production run of selling samples is made and the style is presented to buyers in wholesale markets. If the style has demonstrated sales potential, the pattern is graded for sizes, usually by computer with an apparel industry specific CAD program. Following grading, the pattern must be vetted; the accuracy of each size and the direct comparison in laying seam lines is done. After these steps have been followed and any errors corrected, the pattern is approved for production. When the manufacturing company is ready to manufacture the style, all of the sizes of each given pattern piece are arranged into a **marker**, usually by computer. A marker

is an arrangement of all of the pattern pieces over the area of the fabric to be cut that minimizes fabric waste while maintaining the desired grainlines. It's sort of like a pattern of patterns from which all pieces will be cut. The marker is then laid on top of the layers of fabric and cut. Commercial markers often include multiple sets of patterns for popular sizes. For example: one set of size Small, two sets of size Medium and one set of size Large. Once the style has been sold and delivered to stores – and if it proves to be quite popular – the pattern of this style will itself become a block, with subsequent generations of patterns developed from it.

Pattern

Patterns are simply a repetition of more than one design element working in concert with each other. A <u>seamless pattern</u> is one where every element within a design (no matter how often it's repeated) combines to form a whole. This is most common in backgrounds on web and app pages. It's also popular in carpet and wallpaper design. Look around you: your bed cover, wall, notebook cover. If you see a seamless pattern, look at it closely. Do you see how the elements (circles, spirals, cones, pineapples, etc.) appear again and again in the same way? Sometimes, they touch; sometimes, they have space between them.

As you might expect, designers base most patterns on colors, textures and shapes, rather than words. We can recognize shapes far more quickly than words, which we have to read, no matter how quickly. You can find such patterns in architecture, too. Architects tend to include a unifying motif on the inside and outside of buildings to enhance the aesthetic appeal. This is nothing new. Think of ancient Greek buildings such as the Parthenon. Ancient designers could be ingenious in their use of patterns of such elements as lines and spirals.

When you consider using patterns in your web or app design, you'll want to think about the pattern's complexity. While it might seem like a nice idea to tile a single image as a background, this can make it much harder to read the text that lies over the pattern. If you want to create a design for a site that deals with travel to Greece, you could use the top of an ancient column for your design. At first, it looks great; you've got a beautiful design that features circles and grape leaves.

However, you still have to add text. So, writing over this, you soon notice a problem. The dark writing sometimes falls over the image's dark lines. You could use brighter text, such as white or yellow, but you'll find that the gray stone makes it hard to read, too. *You're* having trouble reading it, and so will your users. They want to engage with your design, not work to try and read text. Simplicity and subtlety are key considerations if you want to maintain the user experience, keeping users *on* your page.

3.7 SUMMARY

The study revealed that weavers are interested to bring new changes that keep the traditional textiles alive. Weavers gave a positive opinion about the concept of weaving the kasuti motifs in Ilkal sarees. They found it more innovative and

expressed that color and yarn combination used for the Ilkal sarees was totally a new concept. They also stated that texture of the sarees were smooth, lustrous, unique, comfortable and easy to maintain. The unique designs will grab the attention of people and will have a good value in the global market.

Although the contemporary designers are working in accordance with a vision, using a wide area of styles, methods and current technology, they usually return to traditional techniques and ethnic folklore motifs, which they convert and resize, integrating them in their contemporary space. The analysis of these forms of cultural expression supports the conclusion, according to which the reuse of these decorative motifs can create products with a great effect in contemporary fashion.

Art from the past is always used by the artists as a foundation for their creativity. The craftsmen of today have become aware that hundreds of motifs that are coming alive are easily adaptable from one craft to another as tradition has shown that it is the form and texture that are pre-eminently important and therefore same motifs and ornamentation may be used very effectively on any material surface.

The variety of the traditional clothing pieces and the complexity of the decorative motifs became very fast inspirational sources for fashion designers. The interest for Romanian tradition and craftsmanship is found also in the Romanian designers collections. They created fashion collections having as an inspiration source the traditional Romanian costume.

3.8 GLOSSARY

- **Bitmapped:** An image that follows a pattern of square shaped pixels.
- **Clickability cues:** A visual indication that a given word or item on a Web page is clickable. Cues that can be used to indicate the clickability of an item include color, underlining, bullets, and arrows.
- **Fold:** The fold is defined as the lowest point where a Web page is no longer visible on a computer monitor or screen. Where on a Web page the fold falls is a function of the monitor size, the screen resolution, and the font size selection. The information that is visible when a Web page first loads is considered to be "above the fold." Those regions of the same Web page that are visible only by scrolling are considered to be "below the fold."
- **Hues:** The frequency of the wavelength of color; what we normally refer to as the "color" of an object.
- **Navigation:** The means by which users to get from page to page on a website.
- **Panels:** Visually and thematically-defined sections of a Web page. Panels are frequently placed in the left and right margins of pages. Panels often contain navigation aids, including related links. Content is not usually placed in left or right panels.
- **Rapid Prototyping:** Quickly generating mockups of what a system will look like to facilitate internal review or testing.
- **Scroll bar:** The scroll bar is visible along the right edge of common browsers. It is defined by a movable box that runs on a vertical or horizontal axis.

- **Style sheet:** A set of statements that specify presentation of a document. Style sheets may have three different origins: they may be written by content providers, created by users, or built into browsers or plug-ins.

- **Task:** A procedure that includes goals, steps, skills, start state, inputs, end state, and outputs to accomplish an activity.

- **Balance** - The elements of design converge to create a design or arrangement of parts that appear to be a whole with equilibrium (a.k.a. **Symmetry**). It is the balancing of the "visual weight" of elements in a design. Balance is related symmetry, asymmetry and radial balance. Symmetrical balance (a.k.a. formal balance) is the even placement of visual weight in a design, where the correspondence between opposite halves of a figure, or form on either side of an axis or set of axes in a design. Asymmetrical compositions (a.k.a. informal balance) are created by uneven spaces and therefore create "tension" in a design. **Asymmetry** gives motion to a composition that wants to be resolved into a balance. Radial symmetry relates to images emitting from a single point like the ripples from a stone thrown into a pond. The symmetry we experience as bilaterally symmetrical beings (two eyes, two ear, two arms etc.) is at the basis of the idea in a "classical" sense of design with a focus toward balance, stability, order and harmony.

- **Unity, Proximity and Variety** - "Gestalt" meaning oneness, harmony, is a condition of completeness with the use of all visual elements within a format. It is a principle focused toward creating a sense of continuity in a design. This is closely related to creating a "rhythm" in a design. Proximity or the closeness of objects creates a bond between those elements in a composition. The relationship of distance between those objects implies their relationship to one another. Unity is commonly achieved by using a "grid" as an underlying foundation throughout a design.

- **Similarity** - The condition of elements being visually grouped according to like features, contours or symmetries.

- **Contrast** - The "automatic principle." Whenever an element is placed within a format, contrast is created in the various elements. Contrast can be emphasized by size, shape, color, texture, etc. Contrast is closely related to the principle of "Emphasis."

3.9 REVIEW QUESTIONS

1. Explain the Structural Designing.
2. What is Structural Design in Garments?
3. Explain the Elements of Structural Design in Apparel.
4. Discuss the Decorative design.
5. Defining the **Requirements of good decorative design.**
6. Explain the **Principles of Pattern Laying**
7. What is **half-brick repeat**?
8. What is the **Fabric Preparation**?

4

FUNDAMENTAL & BASICS OF COLOR

STRUCTURE

4.1   LEARNING OBJECTIVE

After studying this unit you should be able to:

- Explain the meaning and definition of **Basic Color Theory**.
- Describe the **The Color Wheel**.
- Describe the **Color Harmony**.
- Explain the meaning and significance of **Color Context**.
- Explain the procedure of **Prang Colour System**.
- Explain the Color Dimensions.
- Explain the meaning and significance of Psychophysical Effects of Color.

4.2   INTRODUCTION

Basic Color Theory: Color theory encompasses a multitude of definitions, concepts and design applications - enough to fill several encyclopedias. However, there are three basic categories of color theory that are logical and useful : The color wheel, color harmony, and the context of how colors are used.

Color theories create a logical structure for color. For example, if we have an assortment of fruits and vegetables, we can organize them by color and place them on a circle that shows the colors in relation to each other.

The Color Wheel: A color circle, based on red, yellow and blue, is traditional in the field of art. Sir Isaac Newton developed the first circular diagram of colors in 1666. Since then, scientists and artists have studied and designed numerous variations of this concept. Differences of opinion about the validity of one format over another continue to provoke debate. In reality, any color circle or color wheel which presents a logically arranged sequence of pure hues has merit.
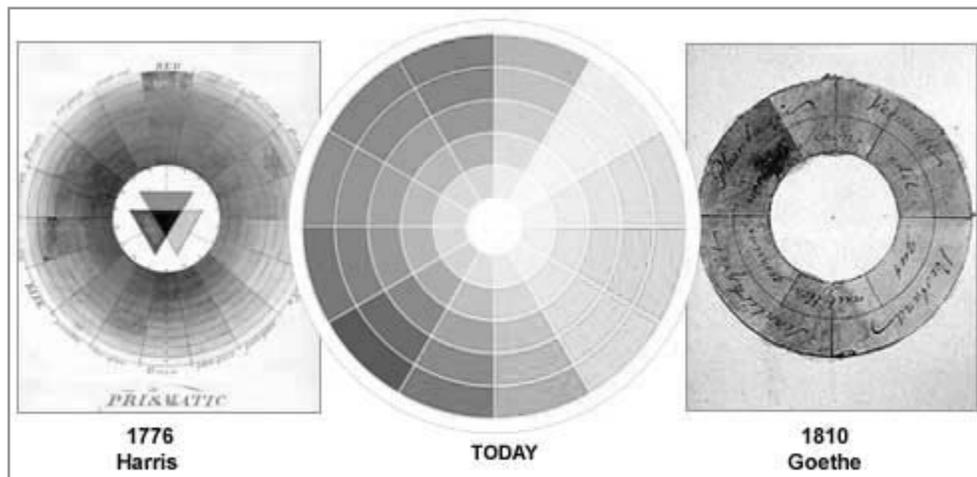
There are also definitions (or categories) of colors based on the color wheel. We begin with a 3-part color wheel.
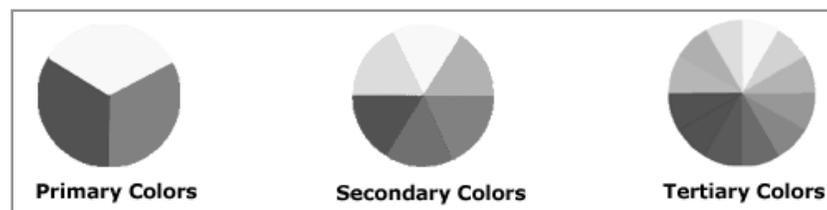
Primary Colors: Red, yellow and blue

In traditional color theory (used in paint and pigments), primary colors are the 3 pigment colors that cannot be mixed or formed by any combination of other colors. All other colors are derived from these 3 hues.

Secondary Colors: Green, orange and purple

These are the colors formed by mixing the primary colors.

Tertiary Colors: Yellow-orange, red-orange, red-purple, blue-purple, blue-green & yellow-green

These are the colors formed by mixing a primary and a secondary color. That's why the hue is a two word name, such as blue-green, red-violet, and yellow-orange.

Color Harmony: Harmony can be defined as a pleasing arrangement of parts, whether it be music, poetry, color, or even an ice cream sundae.

In visual experiences, harmony is something that is pleasing to the eye. It engages the viewer and it creates an inner sense of order, a balance in the visual experience. When something is not harmonious, it's either boring or chaotic. At one extreme is a visual experience that is so bland that the viewer is not engaged. The human brain will reject under-stimulating information. At the other extreme is a visual experience that is so overdone, so chaotic that the viewer can't stand to look at it. The human brain rejects what it cannot organize, what it cannot understand. The visual task requires that we present a logical structure. Color harmony delivers visual interest and a sense of order.

In summary, extreme unity leads to under-stimulation, extreme complexity leads to over-stimulation. Harmony is a dynamic equilibrium.

Some Formulas for Color Harmony: There are many theories for harmony. The following illustrations and descriptions present some basic formulas.

1. A color scheme based on analogous colors

©Jill Morton - Color Matters
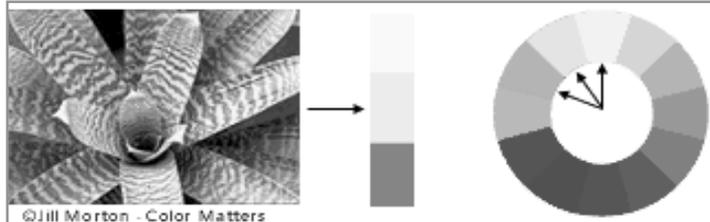
Analogous colors are any three colors which are side by side on a 12-part color wheel, such as yellow-green, yellow, and yellow-orange. Usually one of the three colors predominates.

2. A color scheme based on complementary colors

©Jill Morton - Color Matters
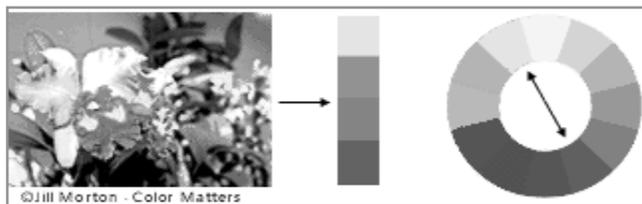
Complementary colors are any two colors which are directly opposite each other, such as red and green and red-purple and yellow-green. In the illustration above, there are several variations of yellow-green in the leaves and several variations of red-purple in the orchid. These opposing colors create maximum contrast and maximum stability.

3. A color scheme based on nature
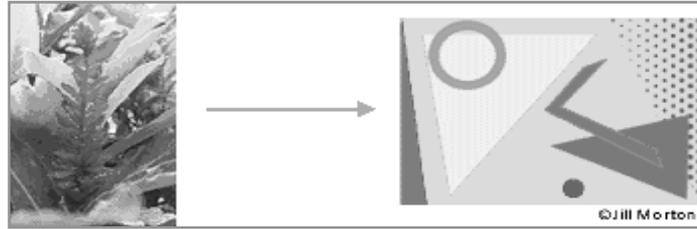
Nature provides a perfect departure point for color harmony. In the illustration above, red yellow and green create a harmonious design, regardless of whether this combination fits into a technical formula for color harmony.

Color Context: How color behaves in relation to other colors and shapes is a complex area of color theory. Compare the contrast effects of different color backgrounds for the same red square.

Red appears more brilliant against a black background and somewhat duller against the white background. In contrast with orange, the red appears lifeless; in contrast with blue-green, it exhibits brilliance. Notice that the red square appears larger on black than on other background colors.

Different readings of the same color

If your computer has sufficient color stability and gamma correction (link to Is Your Computer Color Blind?) you will see that the small purple rectangle on the left appears to have a red-purple tinge when compared to the small purple rectangle on the right. They are both the same color as seen in the illustration below. This demonstrates how three colors can be perceived as four colors.

Observing the effects colors have on each other is the starting point for understanding the relativity of color. The relationship of values, saturations and the warmth or coolness of respective hues can cause noticeable differences in our perception of color.

4.3 COLOUR THEORY (PRANG COLOUR CHART, MUNSELL SYSTEM)

Knowing how to use color theory in fashion is huge to looking good! Easily do this by becoming friends with the color wheel. It may seem a little intimidating at first but don't worry, you don't need to go to art school to do it! There are just a few main points to learn (and eventually memorize) that you can immediately start using when getting dressed every day. Reference the color wheel here as needed, or order a color wheel to keep in your closet (this one is good and cheap).

Pigment/Prang colour theory

The Prang color system was developed by David Breweser based on three primary colors. The fundamental or primary colors such as Red, yellow, and blue which can be mixed so as to form all the other colors, but which cannot themselves be made by mixing any other colors. The secondary colors, orange, green, and purple, are made by mixing two primary colors; orange is a mixture of red and yellow, green is a mixture of yellow and blue, purple is a mixture of red and blue. A tertiary or intermediate color is made by mixing primary color with its adjoining secondary color. The six colors yellow, green, blue, purple, red, and orange, are called the standard colors. The pigment theory is the simplest basis for mixing paints.

Psychologist's theory

The psychologist's theory is based on the visual perception of color. The four primary or fundamental colors are: red, green, yellow, and blue. The secondary colors are orange, yellow-green, blue-green, and violet. The complementary colors are opposite to each other on the diagram.

Physicist's Theory of Colour

In the physicist's scientific theory the primary colors in light are red, green and blue-violet. The secondary colors, yellow, blue, and red-violet are produced by combining two of the primary colors in light.

Color Theory

Color theory is the collection of rules and guidelines which designers use to communicate with users through appealing color schemes in visual interfaces. To pick the best colors every time, designers use a color wheel and refer to extensive collected knowledge about human optical ability, psychology, culture and more.

> "Color! What a deep and mysterious language, the language of dreams."
>
> — Paul Gauguin, Famous post-Impressionist painter

Color is in the Beholders' Eyes

Sir Isaac Newton established color theory when he invented the color wheel in 1666. Newton understood colors as ***human perceptions***—not absolute qualities—

of wavelengths of light. By systematically categorizing colors, he defined three groups:

1. Primary (red, blue, yellow)
2. Secondary (mixes of primary colors)
3. Tertiary (or intermediate – mixes of primary and secondary colors)

Following Newton's findings, the study of color advanced to cover the properties of color in its two forms—i.e., print/paint and screen/light—and in a variety of fields, from art to astronomy. A color's properties are:

-   Hue – How it appears (e.g., "is green").
-   Chroma – How pure it is: i.e., if it has shades (black added), tints (white added) or tones (grey added).
-   Lighting – How pale or saturated it appears.

In user experience (UX) design, you need a firm grasp of color theory to craft harmonious, meaningful designs for your users.

Use a Color Scheme and Color Temperature for Design Harmony

In screen design, designers use the additive color model, where red, green and blue are the primary colors. Just as you need to strategically place images and other elements in visual design, your color choices likewise should optimize your users' experience in attractive interfaces that have high usability. When starting your design process, you can consider using [DHM3] any of these main color schemes:

-   Monochromatic – Take one hue and create other elements from different shades and tints of it.
-   Analogous – Use three colors located beside one another on the color wheel (e.g., orange, yellow-orange and yellow to show sunlight). A variant is to mix white with these to form a "high-key" analogous color scheme (e.g., flames).
-   Complementary – Use "opposite color" pairs—e.g., blue/yellow—to maximize contrast.
-   Split-Complementary (or Compound Harmony) – Add colors from either side of your complementary color pair to soften contrast.
-   Triadic – Take three colors which are equally distant on the color wheel (i.e., 120° apart: e.g., red/blue/yellow). These colors may not be vibrant, but the *scheme* can be as it maintains harmony and high contrast. It's easier to make visually appealing designs with this than with a complementary scheme.
-   Tetradic – Take four colors that are two sets of complementary pairs (e.g., orange/yellow/blue/violet) and choose one dominant color. This allows rich, interesting designs. However, watch the *balance* between warm and cool colors.
-   Square – A variant of tetradic; you find four colors evenly spaced on the color wheel (i.e., 90° apart). Unlike tetradic, square schemes can work well if you use all four colors evenly.

Your colors must reflect your design's goal and brand's personality. You should also apply color theory to optimize a positive psychological impact on users. So,

you should carefully determine how the color temperature (i.e., your use of warm, neutral and cool colors) reflects your message. For example, you can make a neutral color such as grey warm or cool depending on factors such as your organization's character and the industry.

Use Color Theory to Match What Your Users Want to See

The right contrast is vital to catching users' attention in the first place. The vibrancy you choose for your design is likewise crucial to provoking desired emotional responses from users. How they react to color choices depends on factors such as gender, experience, age and culture. In all cases, you should design for **accessibility** – e.g., regarding red-green color blindness. Through UX research, you can fine-tune color choices to resonate best with specific users. Your users will encounter your design with their own expectations of what a design in a certain industry *should* look like. That's why you must also design to meet your market's expectations geographically. For example, blue—an industry standard for banking in the West—also has positive associations in other cultures. However, some colors can evoke contradictory feelings from certain nationalities (e.g., red: good fortune in China, mourning in South Africa, danger/sexiness in the USA). Overall, you should use usability testing to confirm your color choices.

Color Theory – The Basics

This lesson is your introduction to Color Theory: The Basics. Lots of people think color is a mysterious intuitive force that they can never understand. They think that only some people can be "good" at using it, and others can only guess. Marcie Cooperman, author of *Color: How To Use It*, will teach you that there are actually color rules and color relationships – and these are tools that you can use are tools that help you make color decisions. When you learn them, you can feel confident about using color in your fashion designs.

The lesson begins with a brief history of color theory, so that you have a context for what will be discussed. You will learn about Sir Isaac Newton and his major contribution to the study of color and light and about Michel Chevreul, the father of color theory, who gave us the Laws of Simultaneous Contrast. Then you will learn the two systems of color – the subtractive system, which involves using pigments… and the additive system, which is color produced by sunlight. Moving on to the human component of seeing color, you will learn the three factors that allow us to see: Rods and cones in our eyes; our psychological ability to perceive and comprehend color; and lighting. And finally, you will learn about the three elements of color – Hue, Value and Intensity.

Prang Colour System

Prang has classified the colour into five sections:

(1) Primary colours

(2) Secondary or Binary colours

(3) Intermediate colours

(4) Tertiary colours

(5) Quaternary colours
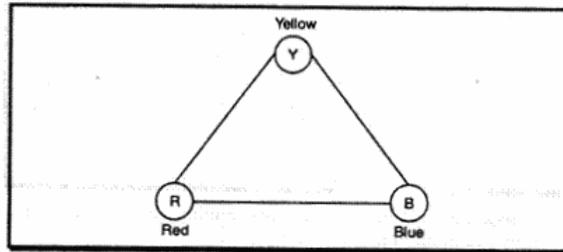
Primary colours

The three colours Yellow, Red and Blue are the primary colours. All other colours are made by mixing one or more of these three colours in various proportions. These three are the basic or fundamental colours. Y-Yellow, R-Red, B-Blue.

Secondary or Binary colours

When two primary colours are mixed in equal proportion a secondary or binary colour results.

These are:

●   Red + Yellow = Orange

●   Yellow + Blue = Green

●   Blue + Red = Purple or Violet
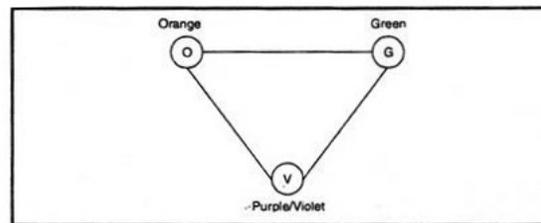
Three primary and three secondary colours are known as "Six standard colours"

Prang Colour Chart
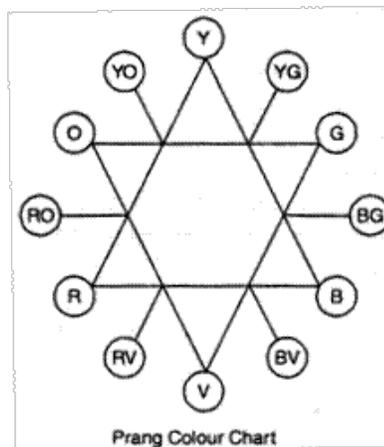
Intermediate colours

When one primary and a neighbouring secondary colours are mixed, an intermediate colour results.

These are:

- Yellow + Green = Yellow Green
- Blue + Green = Blue Green
- Blue + Violet = Blue Violet
- Red + Violet = Red Violet
- Red + Orange = Red Orange
- Yellow + Orange = Yellow Orange

The Primary, secondary and intermediate colours constitute the outer circle in the Prang Colour chart.

Tertiary Colours

When two secondary or binary colours are mixed, a tertiary colour results.

These are:

- Green + Orange = Tertiary Yellow
- Green + Violet = Tertiary Blue
- Orange + Violet = Tertiary Red

Quaternary Colours

A mixture of two tertiary colours results in Quaternary colour.

These are:

- Tertiary yellow + Tertiary blue = Quaternary green
- Tertiary blue + Tertiary red = Quaternary violet
- Tartiary yellow + Tartiary red = Quaternary orange

In the Prang Colour chart the colours are arranged in a circle. The yellow colour is at the top centre and violet falls directly opposite to it. Blue lies on the right side and Red colour on the left side of the colour wheel.

If the colour wheel is split vertically down the centre, the colours will be seen to fall into two groups:

(1) Warm Colours.

(2) Cool colours.

The colours at the left side of the colour wheel are warm colours. For example, Red, Orange, Yellow etc. But the colours at the right side of the wheel are the cool colours. For example Blue, Green, Violet etc. Generally Red and Orange colours are the warmest and Blue the coolest colour. Green is in between warm and cool colours. Warm colours are cheerful and bright whereas cool colours are soothing and calm.

Dimensions or Properties of Colour

Colours have three dimensions or properties:

(1) Hue or the actual name of the colour: Warmth or coolness of the colour

(2) Value of the Colour: Lightness or darkness of the colour.

(3) Intensity of the Colour: Brightness or dullness of the colour.

1. **Hue:** Hue refers to the actual name of the colour like Red, Yellow, Orange, Blue, and Green etc. There is a difference between hue name and colour name. The hue name of a colour is more distinct and clears the colour name. For example, the hue name of the sky is 'sky blue' whereas its colour name is "azure". The hue name of fire is 'golden' whereas its colour name is 'flame'.

2. **Value:** Value is the lightness or darkness of the colour. One colour has so many values ranging from light to dark. The lightest value of all colours is white and darkest value is black. Black, white and grey are neutral colours. In between white and black there are number of values which are known as 'middle value' or 'normal values'. The light value of one colour is called as 'tint' and the dark value as 'shade'.

   For example, the tint of red colour is 'pink' whereas the shade is 'Maroon'. In order to get light value of one colour, white is added and to get dark value, black is mixed. All colours have a number of values. White is also known as highest value as no hue is as light as white. Black is the lowest value as no hue is as dark as black. Light values increase the size of the object and dark values decrease it.

3. **Intensity:** Intensity is the brightness or dullness of a colour. Intensity of a colour is usually achieved by mixing it with its complement and sometimes by addition of grey colour. The colours in the outer circle of the Prang Colour Chart are of high intensity and those inside it are of low intensity. Objects with colour of full intensity are striking and brilliant and of low intensity are sober and dull. Intensity is more in smaller space whereas it is less in large space.

Colour Schemes or Colour Combinations

Certain colour combinations are pleasing and attractive to the eyes. Colour scheme may be Related or Contrasting.

Related Colour Scheme

This colour scheme is produced by combining colours which are related to each other or neighbouring colours in the colour wheel.

These are of two types:

(1) Monochromatic Colour Scheme.

(2) Analagous Colour Scheme.

Monochromatic Colour Scheme

This colour scheme can be produced from one colour. Several values and intensities of the same colour may be used. Neutral colours like black and white may be added.

This kind of colour scheme is quiet, restful and makes a good background for accessories. For example, Pink, Maroon and Red may be combined in producing Monochromatic colour scheme. This colour scheme is known as one hue or one mode harmony. Here the major colour is allowed to predominate. 'Shades' and 'tints' are gradual. It is a colour harmony of the judicious and harmonious use of different values of a single colour.

The advantages of this scheme are:

(1) Unity and harmony are obtained.

(2) There is spaciousness and continuity.

(3) The effect is restful.

(4) It is easier to plan and carry out.
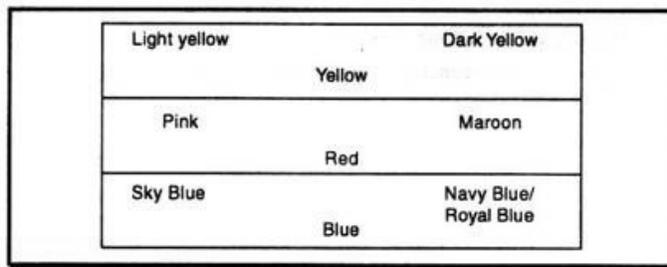
Fig. Monochromatic colour scheme

Analogous Colour Scheme

When the colours which are neighbouring or adjacent in the Prang Colour Chart are used, it is known as Analogous Colour Scheme. Adjacent colours are harmonious, because they have one hue in common. For example, Yellow Green, Green and Blue Green or Red Purple, Blue Purple and Purple etc..
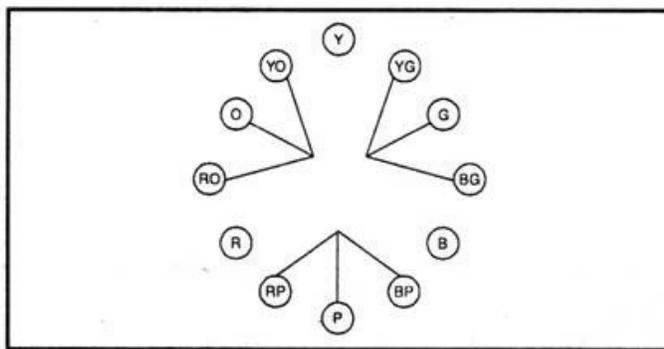
Fig. Analogous colour scheme

The colours used should be of different intensities and values. This colour scheme provides a greater and more interesting variety than Monochromatic Colour Scheme. Analogous harmonies are quiet and useful.

The advantages of Analogous Colour Scheme are:

(1) Unity in variety is achieved.

(2) It allows for greater choice of colours.

Contrasting Colour Scheme

Contrasting Colour Scheme can be obtained by combining colours which are contrasting to each other in the colour wheel.

There are four ways of contrasting colour scheme:

(1) Direct complementary colour scheme

(2) Double complementary colour scheme

(3) Split complementary colour scheme

(4) Triads.

Direct Complementary Colour Scheme

This colour scheme can be obtained by mixing the colours which are directly opposite to each other in the Prang colour wheel. For example, Yellow and Purple, Red and Green, Blue and Orange etc.. They create an attractive harmony in interior decoration.
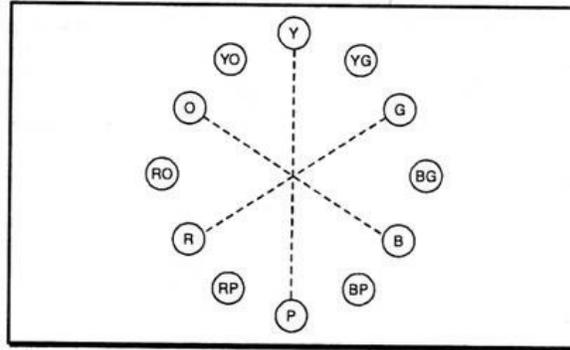
Direct complementary

Double Complementary Colour Scheme

When two neighbouring colours and their complementary are used together, they form double complementary colour scheme. For example, Yellow and Yellow Orange to Purple and Blue Purple or Green and Yellow Green to Red and Red Purple. In this
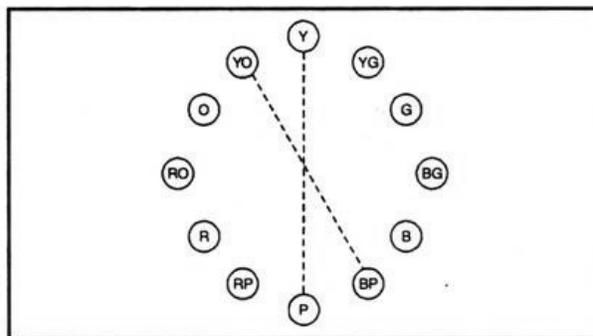
Double complementary colour scheme

Split Complementary Colour Scheme

In this colour scheme one colour is combined with the two colours on either side of its complement. For example, Yellow with Red purple and Blue purple or Red with Yellow green and Blue green or Blue with Yellow orange and Red orange.
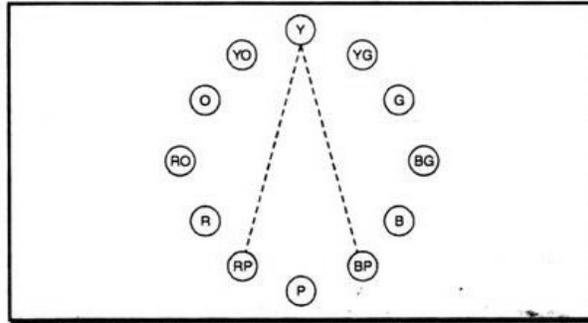
Split complementary colour scheme

Triads

Triads can be obtained by combining three colours which form a triangle in the colour wheel. This is a well balanced colour scheme. Four equilateral triangles can be formed within the Prang colour chart.

a. **One Primary Triad:** Three primary colours

Yellow, Red and Blue.

b. **One Secondary Triad:** Three secondary colours

Green, Orange and Purple.

c. **Two Intermediate Triads:** Six intermediate colours.

   (i) Yellow green: Red orange and Blue purple.

   (ii) Red purple: Blue green and Yellow orange.

This type of colour scheme may be used in choosing colours for the room and the furnishings.

The advantages of this scheme are:

1. Triads form the richest of all colour harmonies.

2. It presents a variety of combinations and yet balance is there.
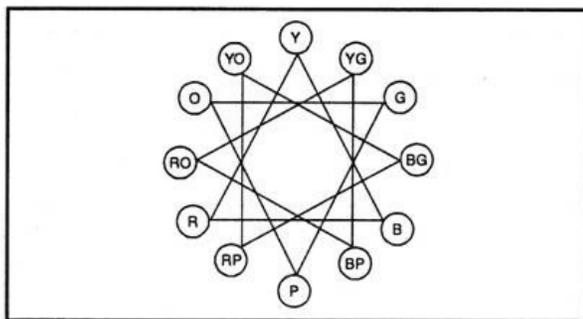
Triads

It is useful to choose one colour as a starting point while selecting colour scheme for interior decoration. Then the supporting colours may be selected.

Factors affecting the Choice of Colour Scheme

A colour scheme is most probably based on personal choice. Various factors are there for an effective and aesthetically pleasing colour scheme for different rooms.

1. **The Room:** Size, shape and direction of the room.
2. **The Mood:** The kind of expression to be created for example, feminine, masculine, elegant, grand, imposing etc.
3. **Personal preferences of members:** Old, young and teenagers.
4. **Fashion:** Current trends.
5. **Possessions:** The furniture and accessories at the disposal of the family.
6. **The Activities of the room:** Living, sleeping, entertaining etc.
7. **The Texture:** The choice of colour depends upon the texture of various materials used. Lighter shades may be used in thinner materials and darker shades on thicker materials.
8. **The Occasion:** It depends upon the occasion. For festival occasions bright warm colours are attractive.
9. **The Light:** Light plays an important role in the choice of colour.
10. **The Seasons:** It depends upon the seasons. Cool colours should be used in summer season and warm colours in winter season. The choice of colour not only reflects one's personality and taste, but also creates an emotional feeling about the home.

Effects of Colours

A magical effect can be produced by colours since they can transform darkness into light, dullness into brightness, gloominess into cheerfulness and drabness into beauty. Colour scheme has certain psychological effect on one's life. The selection and use of different colours and coloured materials in the home expresses the character and individuality of the inmates.

Warm hues are stimulating, cheerful and seem to advance. Cool colours are restful. Complementary hues, when placed next to each other, seem to become more intense. Smooth textures brighten the effect of colours, while coarser textures make them dull. Lighter colours give an illusion of space while dark colours reduce the space.

The followings are some of the psychological effects of commonly used colours:

- **Red:** It is a forceful colour. It expresses stimulation, vigor, passion and aggression.
- **Yellow:** It has the effect of prosperity, amusements, glory, cheerfulness.
- **Blue:** It is one of the vast colours of nature. It expresses depth, distance, spaciousness, dignity, coolness, reserve, formality, happiness, truth, honour etc.
- **Orange:** It is a warm colour. It expresses spirit, hopefulness and courage.

- **Green:** It is found in nature. It is associated with rest, cool, shade, shelter, refreshment, giving positive effect. Its negative qualities are envy, jealousy and ill health.
- **Purple/Violet:** It is a symbol of royalty and associated with mystery, dignity, mourning etc.

Neutral colours

Black, white and grey are neutral colours. Black is associated with death, darkness, evil, mystery and wisdom. In interiors black can be used in luxurious settings. While is the symbolic of innocence, purity, faith, peace and surrender. Grey is associated with masculinity, dignified, sadness, sincerity, modest, gentle etc.

Monochromatic colour scheme is quite and restful. It makes a good background for different accessories. Analogous colour scheme is comfortable and cheerful. Complementary colour scheme is a stimulating type. These are lively and vibrant.

Principles of Colour Scheme

All the principles of design are the principles of colour combination.

These are:

(1) Balance

(2) Rhythm

(3) Emphasis

(4) Proportion

(5) Harmony.

Balance

There should be balance in the use of colours. Larger areas of a colour should be quiet, whereas smaller areas should show strong contrast which may be in hue, value and intensity. Balance can be achieved by the selection of both bright and dull hues and by repeating some colours in various parts of arrangement.

Rhythm

Balance and rhythm are closely related. Rhythm can be produced by using colour skilfully in lines or slopes. It can also be achieved through the use of gradations in hue, value and intensity.

Emphasis

When we use the colour in interior decoration, there should be a point of emphasis. A main colour should be used clearly in various values and intensities. The background must be less emphatic than the objects.

Proportion

Proportion plays an important role in colour combination. Colour scheme will be monotonous if equal proportions are used always. The Greek proportion of 2:3, 3:5:7 will produce a pleasing effect.

Harmony

The standard colour harmonies are:

(1) Harmony of Related Colours.

 These are:

 (a) Monochromatic harmony: In this harmony, one hue is used. There may be difference in values and intensities.

 (b) Analogous harmony: In this harmony colours which are adjacent or neighbouring in the Prang colour chart are used.

(2) Harmony of Contrasting colours.

 These are:

 (a) Direct complementary harmony: When colours which are directly opposite to each other in Prang colour chart are used, direct complementary harmony will be produced.

 (b) Double complementary harmony: This harmony can be achieved by using two adjacent colours and their complements.

 (c) Split complementary harmony: In this harmony, one colour is used with the colours on either side of its complement.

 (d) Triads: In this harmony, colours are combined which form a triangle. Primary colours form Primary Triad, Secondary colours form Secondary Triad and Intermediate colours form Intermediate Triads. Triads form the richest of all harmonies.

4.4 DIMENSIONS OF COLOUR – HUE, VALUE INTENSITY, TINT, SHADE AND TONE

Color Dimensions

All pigment color systems recognize that three dimensions describe color-hue (the name), intensity (brightness/dullness), and value (lightness/darkness). All three dimensions are present in every color and every color starts with hue. Value and intensity are adjectives that describe variations of any hue (light bright green, or deep dull red, for instance).
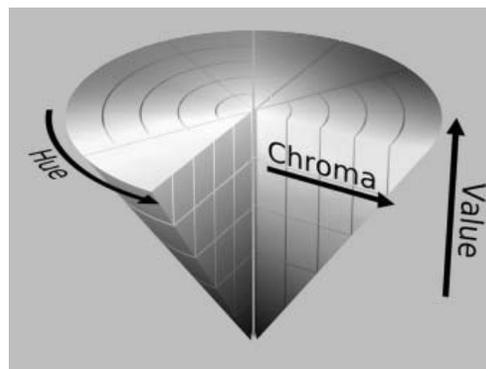
Hue, chroma (intensity) and value map

Hue

The name of the color as designated on the color wheel is its hue-the visual sensation of blue, for example. Each hue has an individual physical character: primary pigment hues are red, yellow, and blue. No other colors combine to make them, but these colors combine to make all other hues. The secondary hues, orange, green, and violet are mixtures of the adjacent primary hues; orange is a mixture of red and yellow; violet is a mixture of red and blue. The hue spectrum runs from red to violet, and is usually depicted as a circle of hues with the primary hues separated by the secondary. Tertiary hues (sometimes called intermediate) result from mixing a primary and a secondary, that is, red-orange or blue-violet.

Groups or categories of colors that share common sensory effects are often called families. Related hues (sometimes called analogous) such as blue-violet, violet, and red-violet, are adjacent on the color wheel and constitute a color family. Contrasting colors are separated from each other on the color wheel. Contrasting color schemes include complementary and split-complementary. Hues opposite each other, such as yellow and purple-blue, are called complementary because they complete the spectrum; each contains primaries the other lacks. Complementary hues can produce an afterimage of each other. If you stare at one hue for several seconds, when you glance away to a neutral surface, you will see an image of its complement. In a split-complementary scheme the color on either side of the complement is selected, green, red-orange, and red-violet, for example.

Value

Each hue has a specific normal or home value; the home value of yellow is close to white or light gray, and violet is as dark as very dark gray. Values have an effect upon colors in combination. For example, the complements red and green have similar values, offering hue contrast but not value contrast. However, the complementary hues of yellow and violet at normal value offer both hue and value contrast.

Contrasting values can affect the perception of edge in adjacent surfaces. A light value surface placed next to a dark one offers a strong visual pull to the difference between the two surfaces. Applications can be found in the value contrast between a white shirt and black trousers, light skin and dark hair, or dark hair and skin and pastel suit.

Intensity

The relative purity or saturation of a color is its intensity, sometimes referred to as chroma. This dimension describes the strength of a color. Saturated colors are primary and secondary hues at their purest and strongest on the color wheel. Each hue has a range of saturation from full intensity to neutral gray. Intensity provides hue with its vividness or neutrality. Intensity yields a variety of expressions. A saturated hue is intense and usually evokes a response of excitement or energy. Less saturated hues range from nearly bright to almost muted incorporating many moods. Hues in the lowest intensities are neutral colors and often are the

foundation of a wardrobe. If used together at full strength, complementary colors can vibrate. The addition of a hue's complement lowers its saturation toward neutral gray and can increase its livability.

Intensity is influenced by surface texture. Even minor surface irregularities reflect minute areas of light that cast miniature shadows; this has the effect of dulling the intensity of a color. If a fabric with a distinct weave or surface were dipped into the same dye bath as a smooth material, it would appear duller in color because of the softening effect of the napped texture. Conversely, a smooth shiny surface will make a soft color appear stronger (Goldstein and Goldstein 1960, pp. 184-185).

Psychophysical Effects of Color

Psychophysical effects can be tied to hue characteristics. The temperature of a hue, the space from which it is viewed, and the color combinations used to create it can influence perception.

Color for the Individual
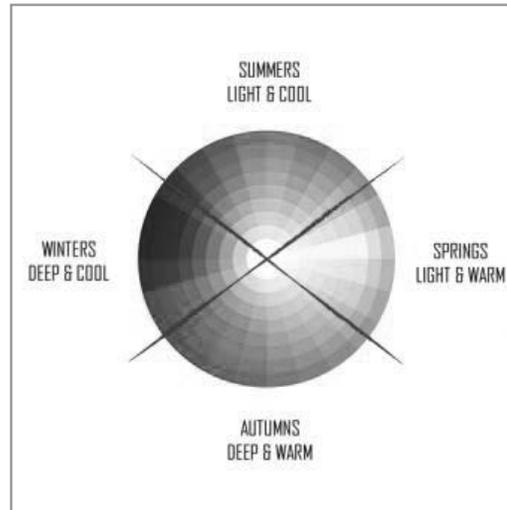
Seasonal color wheel

Packaging of colors for individual selection has been used to market color (Jackson 1981; Pinckney and Swenson 1981). Color selection for clothing is based upon colors that are grouped according to some easily remembered system, such as nature's seasons. Winter and spring colors are described as clear, vivid, and bright, while summer and fall are less intense. Winter and summer colors are cool; spring and fall colors are warm. Personal color analysis systems range from offering small pre-packaged color palettes, to specifically selected colors for each individual.

The Color Key systems categorizes color according to warm or cool overtones that contain all basic hues, values, and intensities (Brannon 2000). Color Key 1 consists of cool, clear colors and Color Key 2 includes warm, earth tone colors; each has a corresponding color fan of paint chips that can be used to coordinate paint for

interiors and apparel colors. This color key system implies that people will look and feel better when surrounded by colors that reflect their personal coloring.

Warm and Cool

Warm hues, light values, and strong intensities seem to advance while cool hues, dark values, and desaturated hues recede. Hues that advance also expand a shape. Warm colors and dark values are perceived as dense or solid and are often associated with muted earth tones such as brick or red-orange, ocher, or golden brown. Cool colors seem to reduce a shape. Cool hues and light values are associated with air, distant mountains, and water and may present an appearance of distance, depth, shadow, coolness, and lightness.

Warm hues, light values, and saturated colors such as bright orange or shocking pink can seem loud or noisy. Cool hues, dark values, and desaturated colors like deep taupe or dark violet are quiet by comparison.

Spatial Position

Hues viewed singly can produce an afterimage and this affects colors on the body. When the viewer concentrates on a clothing surface and then glances at the face, the skin can appear to take on tinges of the complement to the hue of the clothing. Thus after looking intensely at a green sweater, a viewer who glances up at the face may find it tinged with the complement, red.

Whether a hue is directly surrounded by another hue or is separated in some way will influence its perceptual effect. When individual colors are separated by black or white, both their singleness of character and their inter-action are suppressed somewhat. Black causes adjacent hues to seem lighter and more brilliant; a surround of white often appears to darken them.

Visual Mixing

Colors combined in very small patterns or woven together appear to mix visually. When two or more colors are interwoven onto one surface the result can be more vibrant than a surface of just one color. Complementary hues or black and white threads woven together will create a surface that appears gray or neutral when viewed from a distance. If the size of the black and white threads is increased, a salt-and-pepper effect is created.

Color and the Body

Color and dress enter a relationship with color and the body. As a composite of colors, human coloration can be analyzed in the same way as other pigments to predict the effects of color in dress. Similarity of any of the attributes of colors placed upon the body can form a powerful visual relationship with the body.

A person's appearance is a combination of the surfaces placed upon the body and the individual's personal body coloring. Included in appearance are the body colors of skin, hair, and eyes. What surrounds a particular color affects how it appears. The pre-existing colors of the body are influenced by other colors placed upon it, so

the body colors affect the surfaces placed upon it and the reverse is also true. In addition, the clothed body can be greatly influenced by colors of the surrounding environment and by lighting effects.

By matching, naming, and locating personal body colors, an individual can begin to understand color relationships. Intensity is a difficult dimension of color to describe when applied to body colors because the skin surface requires noting small and subtle differences. "Highlights" in one's personal coloring may include areas of the hair, skin, or eyes that seem more intense than other areas. "Undertone" is used to describe underlying colors of skin and hair. Identifying both highlights and undertones for an individual helps in placing colors on the body that are related by similarity or contrast.

Color Matching by Body Colors

	Lightly Tanned	Darkly Tanned	Medium Brown	Deep Brown
Red Hair				
Blond Hair				
Brown Hair				
Black Hair				
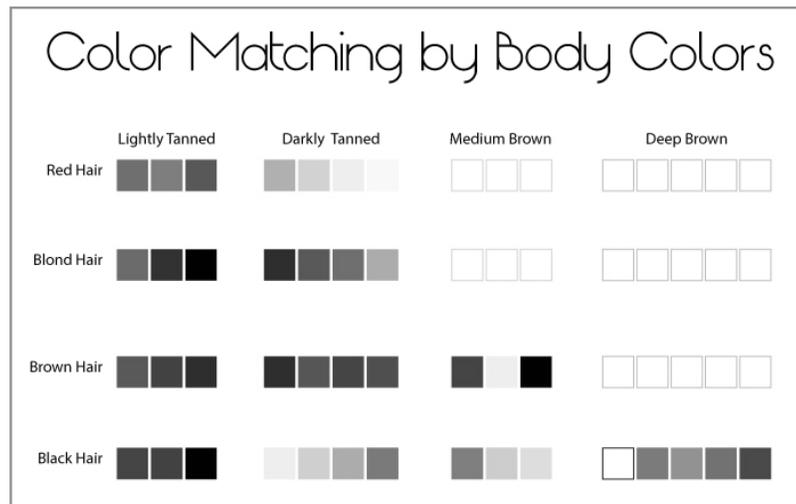
Color as a Source of Association

Color is associated with many natural objects of similar color and therefore can acquire similar meaning according to that association. Sunshine is yellow and warm: yellow is warm. Blue is cool and distant as the mountains and water. Red is exciting like fire and in many cultures red signals danger. Mood is associated with color, too; we have the "blues," or we are "green" with envy.

Colors may be associated symbolically with specific peoples or historic periods. In the 1960s in the United States, psychedelic colors were symbolic of the decade and included combinations of intense hues of pink, yellow, blue, green, and purple. Koreans favor celadon green, a pastel blue-green, because of its traditional association with pottery and ceramics, and white is used for mourning dress in Korea (Geum and DeLong).

Color Preferences

Human response to colors can be measured and identified both collectively and individually, and psychologists have studied the formation of and reaction to color preferences. Eysenck (Brannon 2000) published research in 1941 that showed a consistent order of color preferences in adults: blue, red, green, and purple, yellow, orange. According to Itten (1973) people have subjective individual preferences

that include dimensions of hue, value, and intensity. The Lüscher Color Test (1969) links personality to color preferences. Subjects are asked to arrange color chips in order of preference and the results are analyzed to take into consideration both the meaning and impact of the colors as selected.

Color Marketing

Color is rated as the most important aesthetic criterion in consumer preference. Because color is a complex phenomenon, marketers can present merchandise in coordinated colors in an effort to help the consumer select purchases. When a line of clothing is color coordinated, wardrobe planning may seem less difficult to the consumer. Designers and manufacturers may coordinate colors within a season or from one fashion season to another so that colors of a suit from the past season will coordinate with a shirt the next season. Selections of cosmetics are a part of color coordination of the body in a clothing ensemble and may be linked to personal coloring or to one's wardrobe colors.

Fashion in Colors

Color has had a fashionable aspect historically. Editors of contemporary fashion often cite a color for a season as a means of marketing clothing. History is often recognized by the colors or color combinations fashionable at the time. Examples include the raspberry pink and lime green of mid-twentieth century, or the pastels and filmy light tints at the end of the nineteenth century.

Forecasters take advantage of the importance attached to color by advancing a color palette for a given season. Color forecasting began in 1915 (Brannon 2000) and is based upon analysis of cultural demographics and color patterns. A cyclical pattern of color coordination occurs from High Chroma, Multicolored, Subdued, Earth Tones, Achromatic, Purple, and then back to High Chroma.

Target Markets

Color is used for brand identification. Conceived broadly, this could include a designer's line of clothing or the introduction of a single color. Ralph Lauren tends to select middle value hues of low intensity for his depiction of "traditional" values. Elsa Schiaparelli introduced a single identifier, "shocking pink."

Hue, Value, and Chroma, the Three Dimensions of a Color

Robie is an artist who loves sharing what she's learned about art and painting in the hope that it might help other creatives.

How do you describe a color?

When talking about color, there are some terms that in current language are used as synonyms, however, in a more technical language have very different meanings.

In 1905, artist and teacher Albert H. Munsell experienced the confusion from using common color names to describe a color.

- One person maroon is someone else's burgundy.

- Navy blue may be one of a number of different dark blue colors, as anyone who's tried matching a blue jacket with blue pants knows.

Albert Munsell devoted his life to developing a color identification and notation system that prevents confusion and makes communication easier. To describe a color, there are some attributes that can be specified in mathematical detail and clarify exactly what color you are referring to:

- Hue,
- Value,
- Chroma.

The Three Dimensions of a Color

Dimension	Definition
Hue	Name of a color family
Value	Lightness or darkness of a color
Chroma	Strength or intensity of a color

The main attributes that define a color in all its endless variations are hue, value, and chroma.

Color Dimension 1: Hue

You can think of hues as the colors of the rainbow. If we arrange them in a circle, in a sequence from yellow, yellow-red, red, red-purple … We end up with a color wheel of the hues.

Each hue includes the different colors that vary in value (dark/light) and chroma (intensity) but are part of the same hue family.

For example, in the blue hue, you can find a wide range of blues. Of course, there will be pure blue, but also light blue and dark blue, intense (high chroma) blue, and dull (low chroma) blue, and all combinations in between.

All Hues Are Colors, Not All Colors Are Hues

While all the hues on the color wheel are also colors, some colors are not hues and are not included in the color wheel.

Think of brown for example. Brown is a color, but it does not appear on the color wheel because it's not a hue. In fact, brown is a dull color under a hue. Depending on the kind of brown, it could be a dull red, orange, or even purple.

Color Dimension 2: Value and the Munsell Value Scale

Value is the degree of lightness or darkness of a color.

Munsell has divided the gap from black to white in ten equal steps, called the value scale.

Black has value zero, and pure white has value 10, the values in between are gradually lighter grays of values 2, 4, 6, and 8.

Every color can be associated with a specific value. You can see the real value of a color by squinting.

When squinting, your eyelashes filter, and somehow block, the colored light, letting you see the color-less grayish version of an object.

While you squint, you may hold a value scale in the line of vision next to the color you are evaluating. This way it's easier to compare and determine the exact value.
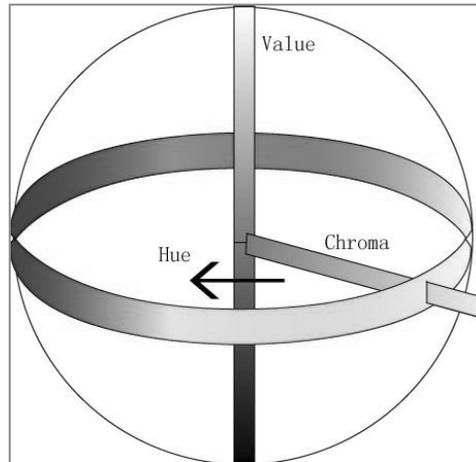
Fig. Structure of the Munsell color system in space

Color Dimension 3: Chroma

Chroma refers to the strength or intensity of a color. A high chroma color is pure from any presence of gray or white. For example, lemon yellow has a high chroma, while a banana yellow has lower chroma.

Colors with strong chroma are often referred to as bright or saturated; however, the term brightness is also used to describe the intensity of light and, therefore, indicates a combination of value (lightness) and chroma.

Croma is represented by the horizontal scale on Munsell's color chart in Fig. above
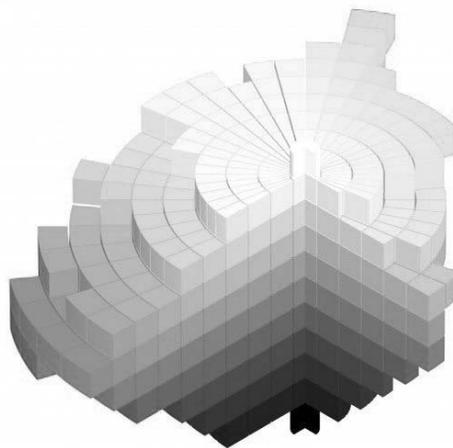
A Representation of the Munsell Color Solid Cylindrical Coordinates. sRGB approximations of the 1943 Munsell color notations.

The Color Solid

Because each color has three dimensions, an arrangement of all colors takes a three-dimensional form. The gray scale serves as the center pole, with white at the top and black at the bottom.

● The Munsell color solid cannot take the shape of a perfect sphere because hue families contain different numbers of steps in chroma.

A Visual Representation of the Munsell Color Tree of Hues Munsell Notation

The Munsell notation of a color is written as a whole number, followed by a letter and a fraction.

● Hue number and letter designation

● Value number/chroma number

Example: 5R 4/14

● 5 Red

● Value 4

● Chroma 14

● This is a "pure" red, medium dark, and very strong.

Other Interesting Terms and Notes

● A tint is usually intended as a lighter version of a color, obtained adding white to the color.

● Shade: A darker version of a color is usually referred to as shade. Generically speaking, it can be obtained adding black to a hue, even though sometimes the mix may need adjustments because black may change the hue.

● Pigments are particles of colored material that, when suspended in a liquid or a medium, become paint.

● Black is a neutral color that has no chroma.

Several editions of the Munsell Book of Color, the color atlas of the Munsell color system sold by the Munsell Color Company, perched behind several of the book's removable pages of color swatches.

The New Munsell Student Color Set

All these info on color, and much more, are included in a wonderful book that is actually a small three-ring binder with removable pages. It goes into detail into all kinds of knowledge about color.

The Circuit of Hues

The hue of any colour is its closest match in the circuit of «pure» or «saturated» colours known to artists as the colour wheel. Thus the hue of a brown object is the particular orange-yellow to orange-red that it most closely resembles.

A perennial question from students in classes and on internet forums runs along the lines of «why do we bend the linear scale of colours in the spectrum into a circular colour wheel?». The assumption is that hues reside in the linear sequence of wavelengths of the spectrum and must be bent into a circle, but according to the widely held model of colour vision called colour opponency, proposed in the late 19th century by Ewald Hering, hues are produced by the visual system with an intrinsically circular range, only part of which can be evoked by single wavelengths of light. But before the recognition of colour opponency the question was indeed a baffling one, and the best explanation that Newton could offer was his rather optimistic suggestion of an analogy with a circle of musical notes.

The scientific definition by the CIE attributes the cycle of hues to successive combinations of four hues identified in a separate definition as the «unique» or «unitary» hues in acknowledgment of the concept of colour opponency. Colour opponency is also explicitly acknowledged in the hue circle of the Scandinavian Natural Colour System (NCS).

Hue: "attribute of a visual perception according to which an area appears to be similar to one of the colours: red, yellow, green, and blue, or to a combination of adjacent pairs of these colours considered in a closed ring" (CIE, 2011 17-542).

Unique hue: «hue that cannot be further described by the use of hue names other than its own. Equivalent term: «unitary hue».

NOTE : There are 4 unique hues: red, green, yellow and blue forming 2 pairs of opponent hues: red and green, yellow and blue.» (CIE, 2011, 17-1373).
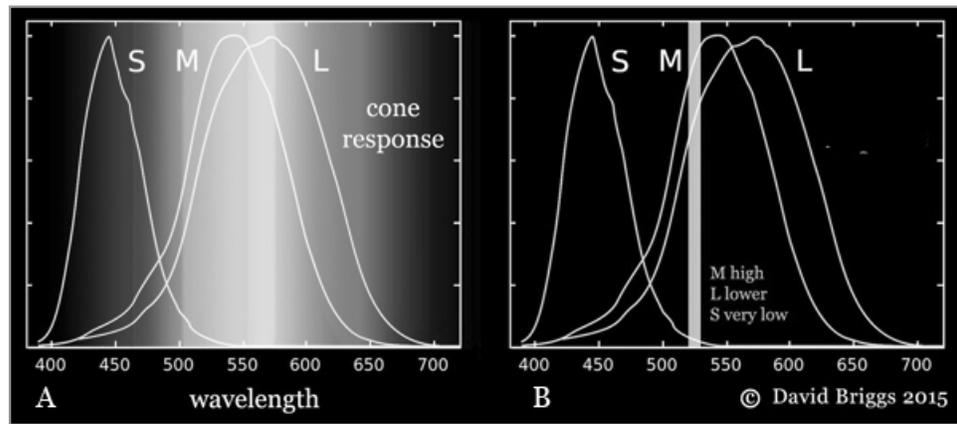
Fig. A. Normalized responses of human S, M and L cone types to different wavelengths of light. Note that the M and L cones do not "detect" green and red wavelengths respectively, as is often claimed in popularized explanations. They both respond to photons through virtually the entire spectrum, and if they are hit by a photon they cannot distinguish what part of the spectrum it came from, they simply respond more strongly to photons from some parts than others. B. The mixture of wavelengths in daylight stimulates all three cone types strongly, and the light is seen as colourless (white), but any single wavelength must result in unequal cone responses, which are experienced as different hues.

Hue is how we perceive the direction of bias of the spectral power distribution of a light (its distribution of energy through the spectrum) or of the spectral reflectance of an object (its reflectance through the spectrum). Conversely, absence bias in either of these is perceived as absence of hue. Perception of a circle of hues is specific to organisms whose colour vision involves three receptor (cone cell) types processed in a cone-opponent fashion, that is, by comparing the responses of the three cone cell types with each other at an early stage of visual processing. When the energy of an isolated light is distributed throughout the spectrum in a balance similar to that of daylight, the responses of our long-, medium- and short-wavelength (L, M and S) cone cell types are mutually balanced and cancel each other out chromatically, and the light is perceived as colourless , that is, "white". Single wavelengths on the other hand necessarily evoke an unequal response from the cone cell types. Beginning at the short wavelength end these unequal cone responses are successively S, S+M, M, M+L and L dominant. An L+S dominant response, which completes the cycle of possible cone responses, can be evoked only by lights containing mixed wavelengths predominantly from the two ends of the spectrum.
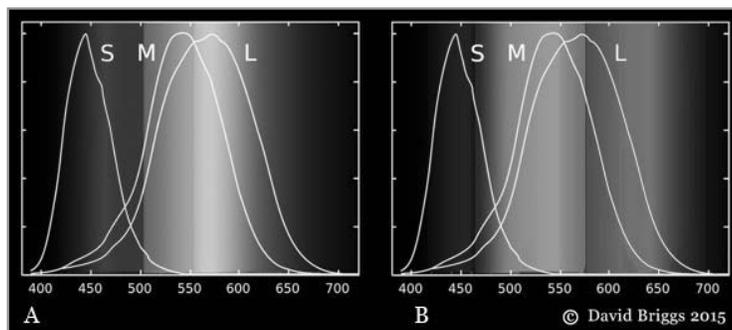
Fig. (A) yellow/blue and (B) red/green colour-opponent hue perceptions evoked by different wavelengths, based on the hue cancellation experiments of Hurvich and Jameson.

We perceive this cycle of possible cone responses as a cycle of hues comprising successive combinations red, yellow, green and blue, apparently organized as a yellow or blue and a red or green colour-opponent pairs. It remains controversial how these colour-opponent perceptions (or «signals») arise from the circuit of trichromat cone-opponent responses, but in general terms a yellow vs blue perception is evoked by long or middle vs short wavelength dominance, while a red vs green perception is evoked by long OR short vs middle wavelength dominance. Note that by this model, «red» is not a property of light that our visual system detects, it is a perception that our visual system creates in response to two distinct bands of wavelengths that have nothing in common except that they occupy opposite ends of the range visible to humans. For a dichromatic species having only two cone types, say L and S cones, the range of relative responses is confined to just L dominant and S dominant, which can be perceived as just two hues. Human dichromats are believed to perceive colour something like this, though there is evidence that colour perception in dichromatic-testing individuals of a trichromatic species can be more complex.
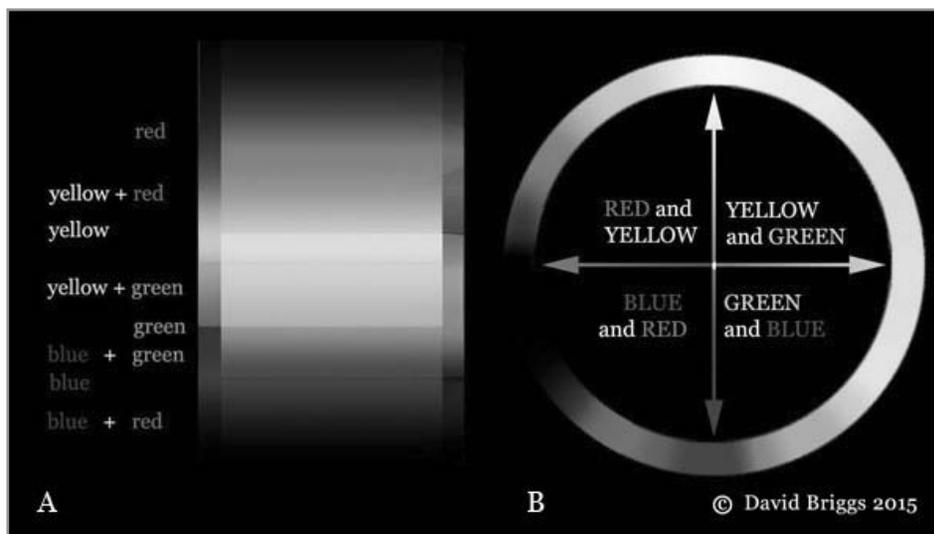
Spectral hues explained as successive combinations of yellow/blue and red/green colour-opponent hue perceptions.

The cone responses evoked by single wavelengths (S, S+M, M, M+L and L dominant) are experienced as successive combinations of these colour-opponent pairs, forming the the spectral hues spectral red, orange, yellow, green, cyan, blue, and violet. Middle ("pure") yellow and blue are experienced where the red/green perception is at zero, and middle green is experienced where the yellow/blue perception is at zero. The non-spectral S+L dominant response, requiring mixtures of wavelengths from the two ends of the spectrum, is seen as the range of non-spectral hues from purple to magenta and middle red. Broadband lights containing a mixture of wavelengths evoke a cone response and perceived hue that depends on the overall balance of wavelengths present.
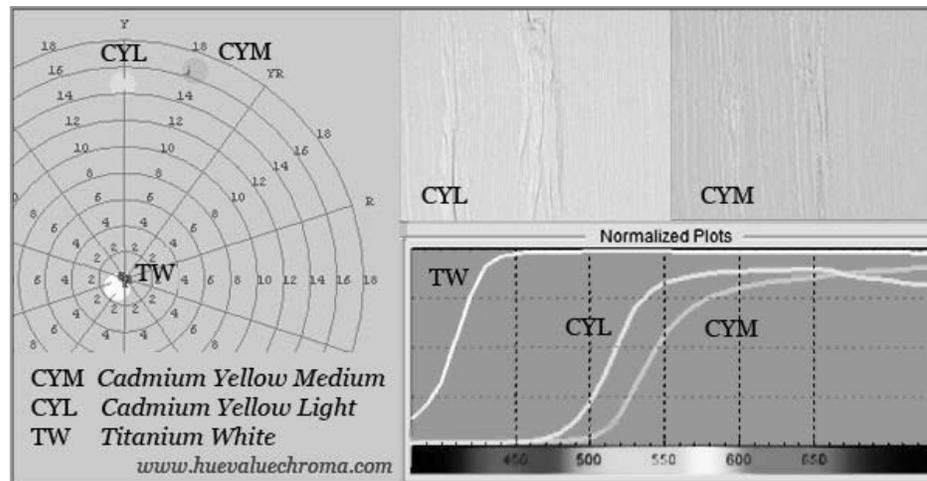
Comparison of spectral reflectance curves of Gamblin Cadmium Yellow Light, Cadmium Yellow Medium and Titanium White oil paint. Munsell plot and spectral reflectance curves for Gamblin Conservation Colours.

The colours we see as belonging to objects at least to a degree relate to their characteristic spectral reflectance, rather than to the wavelengths that they happen to reflect under a particular illuminant, and the hues of these object colours depend on the the direction of bias of these spectral reflectances. Paints that strongly reflect the middle and long wavelength parts of the spectrum are seen as strongly yellow, and either slightly greenish, slightly reddish, or neither depending on the relative size of the middle and long wavelength contributions. In Gamblin Cadmium Yellow Light these contributions are approximately evenly balanced and the paint is seen as middle yellow, neither greenish nor reddish, while in Gamblin Cadmium Yellow Medium the contribution from the middle (green-evoking) part of the spectrum is smaller, and so the paint colour is seen as having a red component. Titanium White is seen as being white because its spectral reflectance has no substantial bias.

Despite a broadly based scientific consensus to the contrary, the view that hues like red and green are properties or "things" physically residing in objects is still alive and well in traditional colour theory accounts of "colour mixing", which take the seemingly logical additional step of assuming that when we mix paints the hues residing in the paints themselves mix. The traditional doctrine that red, yellow and blue are primary colours that "can't be mixed from other colours» proceeds from these assumptions: we can›t make a red mixture without using paint that already «contains red» (such as magenta), similarly we can›t make a yellow or blue mixture without using paints that already «contain» yellow and blue respectively, but the colour green is not a primary colour but a mixture of colours because we can make a green mixture from middle yellow and middle blue paints that don›t «contain» green.

Unfortunately, many popularized explanations of colour vision also encourage the idea that hues exist outside us by speaking of cone cell types that «detect red, green and blue wavelengths» respectively, especially when they take this to mean that humans really only see red, green and blue, that mixtures of red and green

lights just «make you think you›re seeing yellow», or that the colour magenta/pink/ purple alone is «made up» by our brain, because it doesn›t «exist» in the spectrum! Although the colour-opponent model has been widely accepted alongside trichromacy in vision science and psychology for many decades, most popularized explanations of colour vision still omit it completely and explain only the trichromatic model at the level of the retina.

Measures of Hue
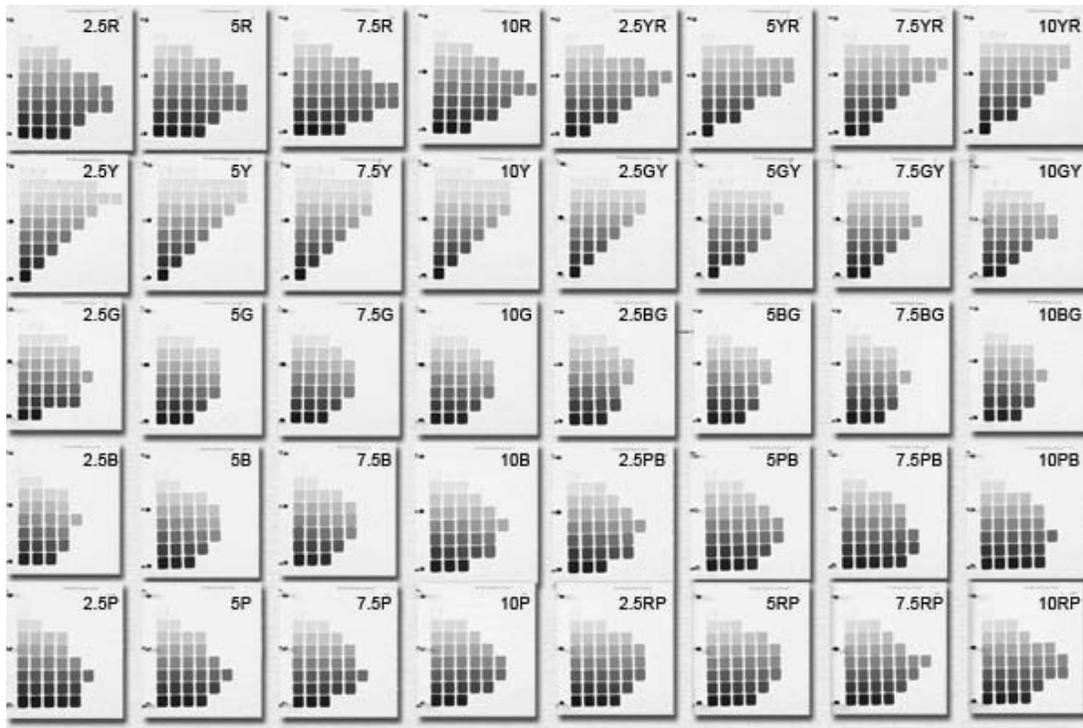
he forty hue pages of the Munsell Book of Color.

Hue systems differ among themselves by the criterion used for placing hues opposite each other, which affects the spacing of the hues, and by which hues that are treated as "primary" or principal in anchoring the circular scale. More incidental differences are the sequential direction of the hues (i.e. clockwise or counterclockwise spectral sequence), whether the continuous loop of hues is represented the form of a circle, hexagon, triangle, star, or other closed geometrical figure, and the conventional orientation (i.e. a specific hue placed at the top of the figure or treated as the first in the sequence).

Hue systems are classified on this site according to the criterion used to place hues opposite each other, and hue systems based on the historical primaries and their complementaries.
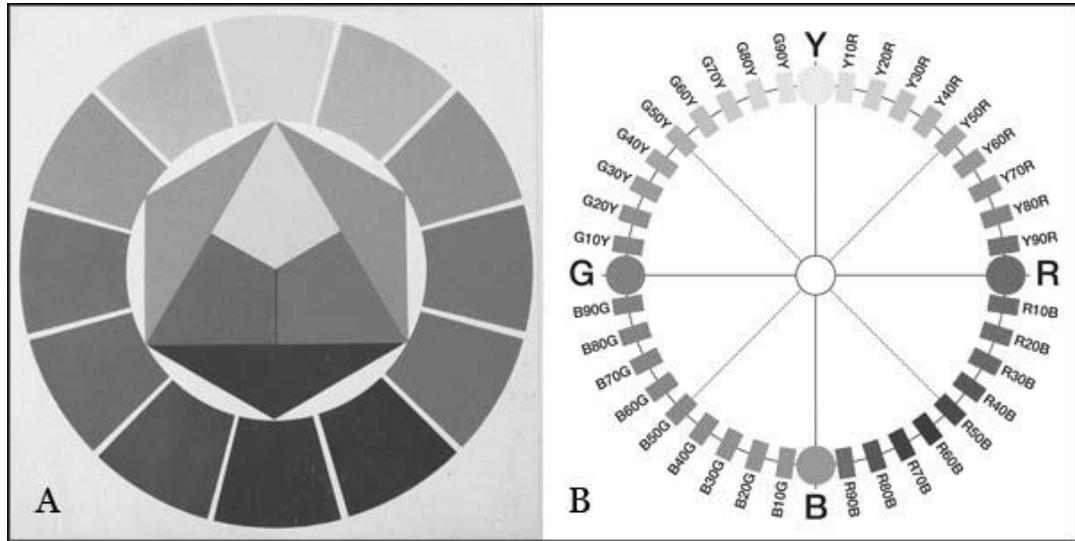
Fig. A. Hue circle based on the historical primaries red, yellow and blue from The Art of Color (1961) by Johannes Itten. The graphic visually encapsulates Itten›s view that his secondary colours green, orange and violet each «contain» two of the primaries. B. Hue circle based on opponent hue relationships from the Natural Colour System (NCS) by the Scandinavian Colour Institute.

Hue systems based on the historical primaries are organized around the conventional complementary pairs red-green, orange-blue and either yellow-purple or yellow-violet. They include numerous 18th-21st century examples of the «artists› color wheel» of traditional colour theory. These hue systems reflect historical confusion of colourant-mixing and opponent hue relationships.

In traditional colour theory the concept of warm and cool colours is commonly used to label distinctions of hue, for example warm yellow for reddish yellow and cool yellow for greenish yellow. These warm/cool associations could be considered a mild but widespread form of synesthesia. As is typical of that condition, individuals who perceive warm/cool associations of colours can be adamant that the association they perceive is objective and obvious, yet other individuals can perceive the precisely opposite association. A striking example concerns the colour blue, where different camps within traditional colour theory regard a reddish blue like ultramarine as a warm and a cool blue respectively. Even if one feels strong warm/cool associations of colours, in the interests of clear communication it is wiser to speak of reddish or greenish blue rather than warm or cool blue, and so on.

Hue systems based on opponent hue relationships are organized around the opponent hue pairs red-green and yellow-blue, and include some historical examples and the modern Natural Colour System or NCS. Different individuals show a rather wide range of variation in the colour chips they select as representative of the four opponent hues, but the averages for most studies show a reasonable range of 2 or 3 Munsell pages. These studies show that the average determinations for the unique hues are not perceptually equally spaced.

HY   *Hansa Yellow Light* (Hansa yellow 10G) PY3 (Golden Heavy Body Acrylics)
CadYM   *Cadmium Yellow Medium* PY35 (Golden Heavy Body Acrylics)
YO   *Yellow Ochre* PY43 (Golden Heavy Body Acrylics)
CadO   *Cadmium Orange* PO20 (Golden Heavy Body Acrylics)
CadRM   *Cadmium Red Medium* PR108 (Golden Heavy Body Acrylics)
AC   *Alizarin Crimson* PR83:1 (Daler Rowney Georgian Oil Colors)
QM   *Quinacridone Magenta* PR122 (Golden Heavy Body Acrylics)
QBV   *Quinacridone Blue Violet* PV19 *beta* (Liquitex Heavy Body Artist Acrylics)
DV   *Dioxazine Purple* (Dioxazine violet) PV23 (Golden Heavy Body Acrylics)
UB   *Ultramarine Blue* PB29 (Golden Heavy Body Acrylics)
CoB   *Cobalt Blue* PB28 (Golden Heavy Body Acrylics)
PBGS   *Pthalocyanine Blue Green Shade* PB15:3 (Golden Heavy Body Acrylics)
CoT   *Cobalt Teal* PG50 (Liquitex Heavy Body Artist Acrylics)
PGBS   *Phthalocyanine Green Blue Shade* PG7 (Golden Heavy Body Acrylics)
PGYS   *Phthalocyanine Green Yellow Shade* PG36 (Golden Heavy Body Acrylics)
COG   *Chromium Oxide Green* PG17 (Golden Heavy Body Acrylics)

Munsell hue-chroma plane showing colours for sixteen common artists' pigments as pure paints and as 1:1 mixtures with Titanium white paint, calculated using Zsolt Kovacs-Vajna's program drop2color. The coloured circles around the circumference show average determinations of positions of unique red, yellow, green and blue from four studies using Munsell chips cited by Kuehni (2012); studies involving conversion from spectral data, NCS hues etc show further spread.

Hue systems based on perceptually uniform spacing oppose hues that are separated by an equal number of perceptual steps in either direction around the hue circle. They include the Munsell system and CIE L*a*b* system. Broadly speaking, opposite hue pairs in these systems are close to additive complements, especially compared to other systems. The Munsell hue circle is based on five principal hues, red, yellow, green, blue and purple (R, Y, G, B and P) and five intermediate hues (YR, GY, BG, PB and RP). Each of these ten hues was originally intended by Albert Munsell to have ten numbered divisions, with the fifth division, for example 5R, being regarded as the typical version of the hue. The Munsell Book of Color however has always had only four hue pages for each principal and intermediate hue, for example 2.5R, 5R, 7.5R and 10R, making a total of 40 hues.
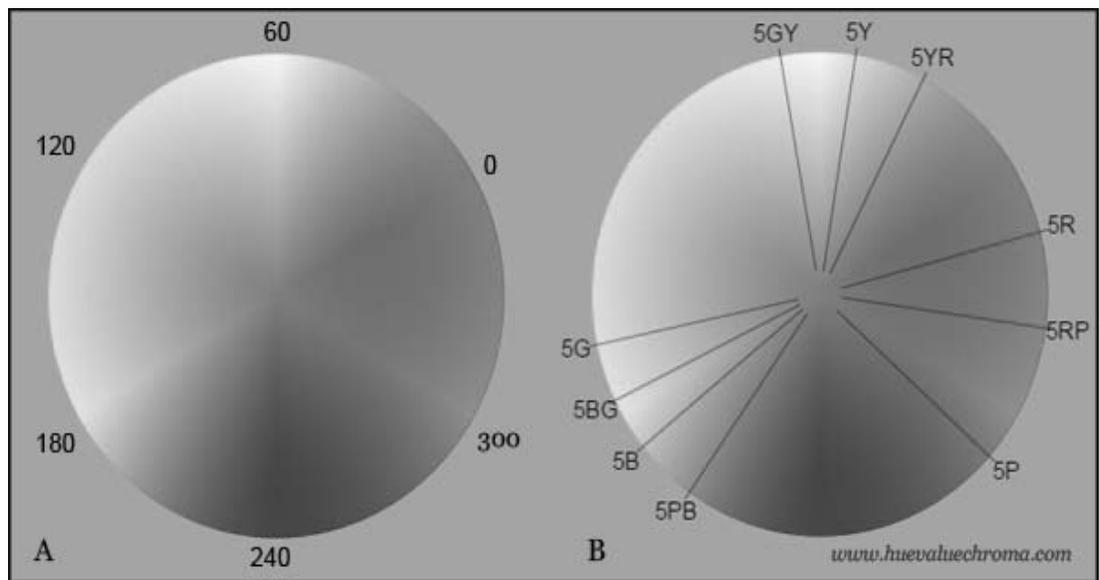
Hue circle showing hue angle (H) used to specify hue in HSB, HLS and HSI digital colour spaces. The circle arranges the additive complementary pairs digital red-cyan (0o-180o) , yellow-blue (60o - 240o) and green magenta (120o-300o) opposite each other.

Hue systems based on additive complements oppose hues of lights that make white light when mixed. They include systems by Newton, Helmholtz, Rood and Ostwald, and the CIE L*u*v* system. Examples of additive complementary pairs are familiar to many from the major hue axes in the HSB hue system used in graphics programs: the digital hues going by the names of magenta/green, red/cyan, and yellow/blue. HSB hue angle (H) is calculated from the ratios of the (nonlinear) RGB primaries by a simple formula, and is highly uneven perceptually.
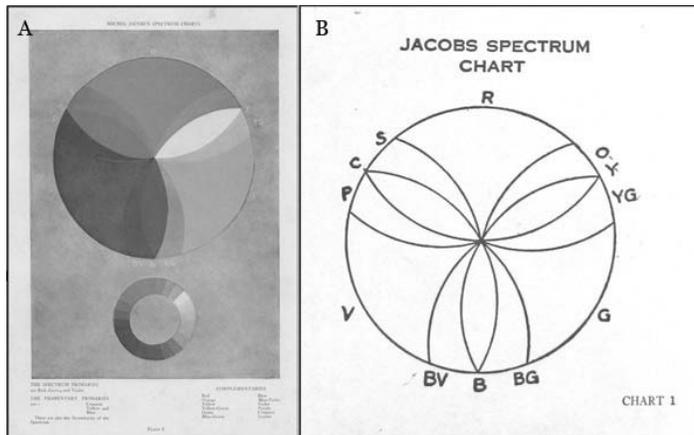
Colour circle diagrams by Michel Jacobs from (A) The Art of Colour (1923) and (B) The Study of Colour (1925).

Hue systems based on colourant-mixing complementaries oppose hues of paints or dyes that make a neutral grey or black when mixed. The regular succession of hues in the traditional artists colour wheel promotes the assumption that paint-mixing complementary pairs succeed each other in an orderly succession of straight lines forming diameters of the hue circle. Many painters evidently paint for years without questioning this assumption, but in reality mixing paths show markedly different patterns for paints that are close to the ideal subtractive primary hues compared to paints that are far from these hues. Paints close to orange-red, yellow-green and blue-violet in hue each neutralize or nearly neutralize paints of a remarkably large spread of opposing hues, so that to make a hue circle that places paint-mixing complementaries approximately opposite each other it is necessary to expand the sectors occupied by these hues and contract the ranges of the remaining hues. Michel Jacobs used a diagram of precisely this sort in his once popular books The Art of Colour (1923) and The Study of Colour (1925), both of which were republished in numerous editions until 1956.

Subdividing the Hue Page
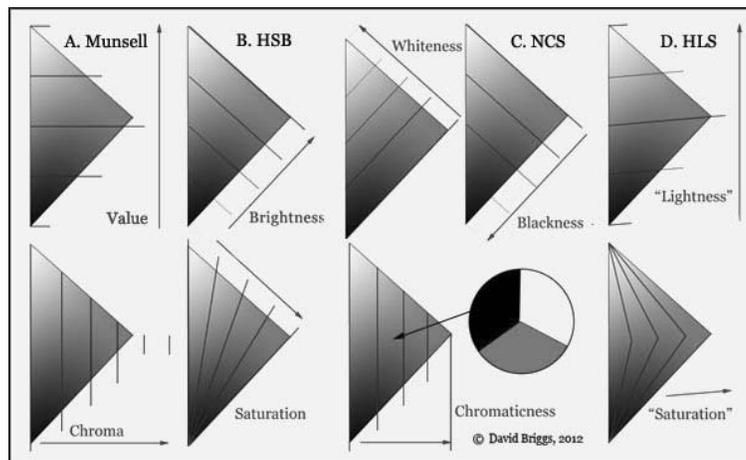
Four approaches to dividing up a hue page.

In three-dimensional colour systems each hue corresponds to a two-dimensional array of colours that can be called a hue page. Hue pages in different systems, such as Munsell, NCS and digital hue angle H, typically drift through each other to some extent. We've seen that hue pages in the Munsell system are divided up according to value and chroma, but the same array of colours can be classified in many alternative ways for different purposes. Thus the digital colour space HSB divides up a hue page according to measures of saturation and relative brightness, while the digital colour space HLS divides up a hue page according to rather arbitrary measures of relative lightness and relative chroma, confusingly called "lightness" and "saturation". Several important systems including the historical Ostwald system and the modern Scandinavian NCS divide up a hue page (in different ways) into white, black and coloured components.

Tints and shades

In color theory, a **tint** is a mixture of a color with white, which reduces darkness, while a **shade** is a mixture with black, which increases darkness. Both processes affect the resulting color mixture's relative lightness. A **tone** is produced either by mixing a color with grey or by both tinting or shading. Mixing a color with any neutral color (including black, gray, and white) reduces the chroma, or colorfulness, while the hue (the relative mixture of red, yellow, green, etc. depending on the colorspace) remains unchanged.

In the graphic arts, especially printmaking and drawing, "tone" has a different meaning, referring to areas of continuous color, produced by various means, as opposed to the linear marks made by an engraved or drawn line.

In common language, the term *shade* can be generalized to furthermore encompass any varieties of a particular color, whether technically they are shades, tints, tones, or slightly different hues. Meanwhile, the term *tint* can be generalized to refer to any lighter or darker variation of a color (e.g. tinted windows).

When mixing colored light (additive color models), the achromatic mixture of spectrally balanced red, green, and blue (RGB) is always white, not gray or black. When we mix colorants, such as the pigments in paint mixtures, a color is produced which is always darker and lower in chroma, or saturation, than the parent colors. This moves the mixed color toward a neutral color—a gray or near-black. Lights are made brighter or dimmer by adjusting their brightness, or energy level; in painting, lightness is adjusted through mixture with white, black, or a color's complement.

In art

It is common among some artistic painters to darken a paint color by adding black paint—producing colors called *shades*—or to lighten a color by adding white—producing colors called *tints*. However, this is not always the best way for representational painting, since one result is for colors to also shift in their hues. For instance, darkening a color by adding black can cause colors such as yellows, reds and oranges to shift toward the greenish or bluish part of the spectrum. Lightening a color by adding white can cause a shift towards blue when mixed with reds and oranges.

Another practice when darkening a color is to use its opposite, or complementary, color (e.g. violet-purple added to yellowish-green) in order to neutralize it without a shift in hue, and darken it if the additive color is darker than the parent color. When lightening a color this hue shift can be corrected with the addition of a small amount of an adjacent color to bring the hue of the mixture back in line with the parent color (e.g. adding a small amount of orange to a mixture of red and white will correct the tendency of this mixture to shift slightly towards the blue end of the spectrum).

The Four Dimensions of Tone of Voice

A quick Google search for "tone-of-voice words" will surface lists of hundreds of words used to describe literary tones. (Most of them come from websites for undergraduate English courses). You'll quickly notice that most of those words have very specific meanings and connotations (e.g., "vexed" or "cynical"), and couldn't be used to describe the tones of many (if any) websites. You'll also notice that many of these lists are huge, some with hundreds of words.

We decided to design a manageable web-specific tool that content strategists could use to create simple tone profiles for a company's online presence. Our goal was to identify several tone-of-voice dimensions that could be used to describe the tone of voice of any website.

We began with a long list of literary tone words. We then eliminated any words that wouldn't be realistic content goals for normal websites (like "guilty"). That process produced a list of 37 website-specific tone words.

We then iteratively refined that list, by:

- clustering any words that were similar (e.g., "upbeat" and "cheerful")
- removing words that had no obvious antonyms, so wouldn't work as dimensions (e.g., "nostalgic")
- removing words too specific to be widely applied to a variety of websites and topics (e.g., "romantic")
- At the end of this process, we identified 4 primary tone-of-voice dimensions.
- Funny vs. serious: Is the writer trying to be humorous? Or is the subject approached in a serious way? (Note that for our purposes, this dimension was only the attempt at humor. We didn't evaluate if the writers successfully landed their jokes.)
- Formal vs. casual: Is the writing formal? Informal? Casual? (Note that casual and conversational are not necessarily synonymous, but they do often appear together.)
- Respectful vs. irreverent: Does the writer approach the subject in a respectful way? Or does she take an irreverent approach? (In practice, most irreverent tones are irreverent about the subject matter, in an effort to set the brand apart from competitors. They are not usually intentionally irreverent or offensive to the reader.)
- Enthusiastic vs. matter-of-fact: Does the writer seem to be enthusiastic about the subject? Is the organization excited about the service or product, or the information it conveys? Or is the writing dry and matter-of-fact?

Tones could fall at either extreme of each dimension, or somewhere in between. Each website's tone of voice could be expressed as a point in the 4-dimensional space described by these dimensions.

One Message, Many Possible Tones

To see how these 4 dimensions of tone can be varied to create different effects, let's consider a small piece of copy that almost every content team has to consider at some point — an error message.

At the core of every piece of writing is the message — the information we're trying to communicate to our user. In this case, our message is, "An error has occurred." Our tone will be how we communicate that message.

First, let's try a serious, formal, respectful, and matter-of-fact error message.

"We apologize, but we are experiencing a problem."

We're not trying to make users laugh, or using any strong emotion in the message. It's a fairly traditional, straightforward message.

Now, what if we tweak one of the 4 dimensions? Let's make this same message a little more casual.

"We're sorry, but we're experiencing a problem on our end."

The message is still serious, respectful, and matter-of-fact. But the message becomes more casual with a few small changes:

- "We are" becomes "we're"
- "Apologize" becomes "sorry"
- The addition of the expression "on our end"

Let's add a little more enthusiasm to the message. In this case, "enthusiasm" means emotion more than excitement, since the subject is a negative one for both the site and the user.

"Oops! We're sorry, but we're experiencing a problem on our end."

Now we've taken the error message's tone to casual and enthusiastic. If we add an attempt at humor and a little irreverence, we'll have taken the same message to a totally different tone of voice. (Remember, the irreverence here is the speaker's attitude towards the subject, not necessarily towards the audience.)

"What did you do!? You broke it! (Just kidding! We're experiencing a problem on our end.)"

Which of these versions of the same message would work best? For your organization, that will depend on:

- Your brand personality. For example, if you work in a large traditional financial institution, an enthusiastic and irreverent error message might be out of character for your brand. The formal error message could work, but maybe you'll opt for a casual message if you've decided that a personal, conversational feel would be best for your content.
- Your users. Consider the characteristics and preferences of your users, but also their emotions and information needs for each piece of content. If your users

are frustrated when they arrive to this error message, or they see it frequently, a humorous tone might be irritating. The best way to know which tones will work with your users is to test.

Users Notice Variations in Tone-of-Voice Dimensions

We wanted to make sure changes in the 4 tone-of-voice dimensions would be noticeable to our users, and not just theoretical concepts. In preparation for an upcoming study, we used these 4 dimensions to create paired tone-of-voice samples for made-up websites from 4 industries (2 samples per industry). Both of the samples within in each pair were nearly identical in everything from visual design to message. The only variable we varied was the tone of voice: the two samples in a pair corresponded to different combinations of tone-of-voice dimensions. For example, in the security industry, one sample was funny, casual, irreverent, and enthusiastic; and the other one was serious, neutral on the casual scale, respectful, and matter-of-fact.

In an online survey of 50 American respondents, we asked users to rate the friendliness and formality of each sample on 5-point Likert scales.

The differences within each pair were statistically significant at $p < 0.05$. The differences were also consistent with what we would expect, based on each tone profile. For example, the funny, casual insurance company sample was found to be friendlier but less formal than the serious insurance company sample.

The actual differences in the ratings were rather small, around 0.5–1 point on a 5-point scale. Our samples used realistic tones that we could reasonably expect to find in real sites. For all but the most extreme and exaggerated tones, you should expect to find similar effect sizes in your own tone variations. It would be rare for a writing style to collect scores at the outermost limits of our tone scales and still be effective for business purposes: you want to emphasize your chosen tonal qualities without making them dominate your writing to the extent that the content becomes excessive and stops communicating the underlying meaning in favor of pure style.

These findings confirmed our hypothesis that variations along the 4 tone dimensions would produce measurable differences in users' impressions of the sites.

Applying the Four Dimensions

Use these dimensions to identify your tone-profile goals. Decide what combination of dimensions makes sense best for your company and think about strategies to implement this tone of voice. When you're defining your tone for a whole site or a specific piece of content, start with these four high-level dimensions first. For example, first decide if a funny, casual tone will work for your brand and your users. Then you can refine your tone strategy by choosing more specific tone target words like "playful," "quirky," or "sarcastic."

Use these dimensions to evaluate your tone. Test with your users to determine whether the tone of any new piece does conform to the chosen profile. You can do this by:

- Using product-reaction testing to see if your users choose tone words that correspond to your target tone profile. For example, let's say you want your

users to view your brand as funny but respectful. If users choose "humorous" to describe your content, you could consider that it matches your goal. However, if many of your users choose "snarky" to describe your content, you might interpret that as being slightly off your goal, since "snarky" humor feels irreverent.

- Ask your users to rate your content on one or more of the tone dimensions, by asking them to complete a 3-point or 5-point Likert scale with each extreme of the tone dimension at opposite ends of the scale (for example, "funny" vs. "serious").

Remember that you can always vary your tone to fit the situation. Keep your personality consistent, but vary the tone to fit the user's emotional state and the topic. (For example, a company's financial report will need to sound different than the same company's careers page targeted at university students.) You might decide on a casual tone for your site-wide content strategy, but vary the amount of humor in your copy across the site.

Tone is about more than just content. The visual design and interaction design contribute strongly to the overall 'feel' of a website, as well as to the construction of the brand personality. All members of the digital product team need to think about how their piece fits within the whole.

Tone applies to all channels and touch points. As our example with an error message shows, tone of voice applies to all touch points, not just to your homepage copy. Your tone of voice should be part of your omnichannel strategy and be used when creating writing and other communications for all channels, including email (whether promotional, informative, or transactional), physical products, and the in-store experience.

4.5   STUDENT ACTIVITY

1.   What is Colour Theory? Explain the Pigment/Prang colour theory?

....

....

....

2.   What is Prang Colour System? Explain the Use a Color Scheme and Color Temperature for Design Harmony?

....

....

....

4.6   COLOUR SCHEMES AND HARMONY

Definition: A color scheme created by putting together different values, hues, tints, and shades from the same color.

Explanation: This picture is an example of a monochromatic color scheme because

each of the outfits are orange; however, all of the colors of orange in the outfits are different shades, values, hues, or tints.

Neutral Color Scheme

Definition: A color scheme created by putting together colors from the neutral palette like black, white, beige, etc.

Explanation: This outfit is an example of a neutral color scheme because the designer put together the outfit using only white and creme.

Accented Color Scheme

Definition: A color scheme created by putting together an outfit made up of neutral colors and adding an colored accessory to it.

Explanation: These outfits are examples of an accented color scheme because they consist of mostly neutral garments and have a colored accessory like an orange bag for example.

Triadic Color Scheme

Definition: A color scheme created by using three colors that are an equal distance apart from each other on the color wheel.

Explanation: This outfit is an example of a triadic color scheme because blue, yellow, and the shade of red are all the same distance apart from each other.

Complementary Color Scheme

Definition: A color scheme created by putting together two colors from the opposite sides of the color wheel.

Explanation: This is an example of a complementary color scheme because the colors of the garments, blue and orange, are from opposite sides of the color wheel.

Split Complementary Color Scheme

Definition: A color scheme created by combining three colors and taking one color, such as red, looking at it's complimentary color, then using the two colors right next to the compliment.

Explanation: This outfit is an example of a split complementary scheme because the pants are a red-orange, and then green and blue are the colors right next to its compliment.

Analogous Color Scheme

Definition: A color scheme created by combining 3 or more colors that are adjacent to each other into an outfit.

Explanation: This is an example of an analogous color scheme because the model is wearing purple, purple-red, and red, which are all next to each other or adjacent to each other on the color wheel.

Color scheme

In color theory, a **color scheme** is the choice of colors used in various artistic and design contexts. For example, the "Achromatic" use of a white background with black text is an example of a basic and commonly default color scheme in web design.

Color schemes are used to create style and appeal. Colors that create an aesthetic feeling when used together will commonly accompany each other in color schemes. A basic color scheme will use two colors that look appealing together. More advanced color schemes involve several related colors in "Analogous" combination, for example, text with such colors as red, yellow, and orange arranged together on a black background in a magazine article. The addition of light blue creates an "Accented Analogous" color scheme.

Use of the phrase **color scheme** may also and commonly does refer to choice and use of colors used outside typical aesthetic media and context, although may still be used for purely aesthetic effect as well as for purely practical reasons. This most typically refers to color patterns and designs as seen on vehicles, particularly those used in the military when concerning color patterns and designs used for identification of friend or foe, identification of specific military units, or as camouflage. In hotel room designs, the relationship between preferences of color schemes and gender was detected. Male guests tend to prefer masculine color schemes, while female guests favor feminine color schemes.

A color scheme in marketing is referred to as a **trade dress** and can sometimes be protected by trademark or trade dress laws, as is the pink color of Owens Corning fiberglass.

Color schemes are often described in terms of logical combinations of colors on a color wheel. Different types of schemes are used.

Types

Monochromatic

Monochromatic colors are all the colors (tints, tones, and shades) of a single hue. Monochromatic color schemes are derived from a single base hue, and extended using its shades, tones and tints (that is, a hue modified by the addition of black, gray (black + white) and white. As a result, the energy is more subtle and peaceful due to a lack of contrast of hue.

Complementary

For the mixing of colored light, Newton's color wheel is often used to describe complementary colors, which are colors which cancel each other's hue to produce an achromatic (white, gray or black) light mixture. Newton offered as a conjecture that colors exactly opposite one another on the hue circle cancel out each other's hue; this concept was demonstrated more thoroughly in the 19th century.

A key assumption in Newton's hue circle was that the "fiery" or maximum saturated hues are located on the outer circumference of the circle, while achromatic

white is at the center. Then the saturation of the mixture of two spectral hues was predicted by the straight line between them; the mixture of three colors was predicted by the "center of gravity" or centroid of three triangle points, and so on.

Split-Complementary

The Split-Complementary (also called 'Compound Harmony') color scheme is a three-color combination consisting of base color and two colors that are 150 degrees and 210 degrees apart from the base color. The Split-Complementary color scheme has the same sharp visual contrast as the complementary color scheme but has less pressure.

Achromatic

Any color that lacks strong chromatic content is said to be '**unsaturated, achromatic, or near neutral'**. Pure achromatic colors include black, white, all grays and beiges; near neutrals include browns, tans, pastels and darker colors. Near neutrals can be of any hue or lightness.

Neutrals are obtained by mixing pure colors with white, black or gray, or by mixing two complementary colors. In color theory, neutral colors are colors easily modified by adjacent more saturated colors and they appear to take on the hue complementary to the saturated color. Next to a bright red couch, a gray wall will appear distinctly greenish.

Black and white have long been known to combine well with almost any other colors; black decreases the apparent *saturation* or *brightness* of colors paired with it, and white shows off all hues to equal effect.

Analogous

Analogous colors (also called **Dominance Harmony**) color scheme are groups of colors that are adjacent to each other on the color wheel, with one being the dominant color, which tends to be a primary or secondary color, and two on either side complementing, which tend to be tertiary.

The term analogous refers to the having analogy, or corresponding to something in particular. An analogous color scheme creates a rich, monochromatic look. It's best used with either warm or cool colors, creating a look that has a certain temperature as well as proper color harmony. While this is true, the scheme also lacks contrast and is less vibrant than complementary schemes.

Red, reddish-orange, orange, yellow-orange is one example of a set of analogous colors.

Accented analogous

An accented analogous complementary scheme utilizes related hues lying adjacent on the color wheel with a hue directly opposite to these. This direct complement becomes the accent color, used to create a dominant color grouping of three similar colors accented with the direct complement (or the near complement) of one of them. The complementary accent color creates an interesting contrast against the

dominant color grouping. This scheme is frequently used to put a warm accent color with a cool analogous color palette, or a cool accent color with a warm palette.

Triadic

The Triadic color scheme is a three-color combination consisting of a base color and two colors that are 120 degrees and 240 degrees apart from the base color. Triadic color schemes tend to be quite vibrant. Even when using pale or unsaturated versions of hues, it offers a higher degree of contrast while also retaining the color harmony. This scheme is trendy among artists because it provides sharp visual contrast while maintaining balance, and color richness. The triadic scheme is not as contrasting as the complementary scheme, but it is easier to accomplish balance and harmony with these colors.

Tetradic

The Tetradic (also called 'Double Complementary') color scheme is considered the richest because it uses four colors arranged into two complementary color pairs. This scheme is hard to harmonize and requires a color to dominate or subdue the colors; if all four colors are used in equal amounts, the color scheme may look unbalanced.

Rectangle (Tetradic)

The Rectangle color scheme is a four-color combination consisting of a base color and three colors that are 60 degrees, 180 degrees, and 240 degrees apart from the base color. Rectangle color schemes work best when one color is dominant.

Square (Tetradic)

The Square color scheme is a four-color combination consisting of a base color and three colors that are 90 degrees apart from the base color. Square color schemes are rich in color and offer variations.

Polychromatic

The term **polychromatic** means having several colors. It is used to describe light that exhibits more than one color, which also means that it contains radiation of more than one wavelength. The study of polychromatics is particularly useful in the production of diffraction gratings.

In Maps and Data Visualization

Thematic maps, charts, Data science, spreadsheets and other tools use graphical means to visualize quantitative data. Color is often used as one of these graphical tools, due to its aesthetic appeal, its intuitive contrast (i.e., people can instantly differentiate a large number of colors), and its multidimensional richness, which allows variations in color to carry a great deal of meaning.

A variety of color schemes for representing quantitative variation have been developed by cartographers to represent quantitative variable ranges intuitively,

especially for choropleth maps. These have generally been adopted for other forms of visualization as well, such as the Heat map. These fall into several categories:

- **Sequential Schemes** use color value to represent quantitative or ordinal values. It is commonly assumed that the darkest shade intuitively represents the largest value, but on a dark background, a light shade may be more intuitive because it contrasts more. Two subtypes exist, depending on how Hue may also be used:

  - **Monochrome Schemes** use tints of a single hue, or shades of gray. Studies have shown that while humans are capable of seeing hundreds of shades of most colors, they can only distinguish 5-8 for practical use (i.e., matching a shade on the map to the corresponding shade in the legend).

  - **Part-Spectral Schemes** use a range of hues in addition to value, generally incorporating a partial segment of the Color wheel, such as a light yellow to a dark green, or a light orange to a dark red. The advantage of this approach is that the hue differences add contrast, enabling users to distinguish a larger number of distinct colors, up to 12-15.

- **Divergent Schemes** use two sequential schemes (monochrome or part spectral), sharing a common (usually the lightest) color in the center and the darkest at the two ends. Their primary use is to emphasize (by the principles of visual hierarchy) the extreme values at both the high and low ends.

- **Spectral Schemes** use a large segment or even the full range of Hue to represent the range of quantitative values, with no variation in value. This can be difficult to interpret with most data, because hues do not naturally look like "more" or "less" than other hues. It can be useful, however, for representing cyclical variables, which can map directly onto a Color wheel, such as the terrain aspect, wind direction, or Seasonality.

- **Bivariate** or **Trivariate Schemes** use two or three orthogonal monochrome sequential schemes to represent separate (but usually related) variables, with the various blended colors representing different combinations of values. This scheme tends to work best when the hues for each axis are primary colors: RGB on a black background, CMY on a white background, so that the mixed colors are as clear as possible. When crafted well, and with an advantageous geography (in which the variables tend to have broadly consistent patterns), these color schemes are very effective at visualizing correlations and other patterns between the variables. In other situations, they can produce a seemingly random confusion of color.

Cynthia Brewer performed a number of experiments on various color schemes for data visualization in maps, especially working with those with color blindness. Eventually, this work led to a palette of several dozen color schemes designed to be reproducible on multiple devices and usable by the color-vision-impaired, which was collected into an interactive tool known as ColorBrewer in 2002. This palette quickly gained wide acceptance due to its reliable usability by non-experts, and has become a standard built into GIS and mapping software and other visualization tools.

Harmony (color)

In color theory, **color harmony** refers to the property that certain aesthetically pleasing color combinations have. These combinations create pleasing contrasts and consonances that are said to be harmonious. These combinations can be of complementary colors, split-complementary colors, color triads, or analogous colors. Color harmony has been a topic of extensive study throughout history, but only since the Renaissance and the Scientific Revolution has it seen extensive codification. Artists and designers make use of these harmonies in order to achieve certain moods or aesthetics.

Types

Several patterns have been suggested for predicting which sets of colors will be perceived as harmonious. One difficulty with codifying such patterns is the variety of color spaces and color models that have been developed. Different models yield different pairs of complimentary colors and so forth, and the degree of harmony of sets derived from each color space is largely subjective. Despite the development of color models based on the physics of color production, such as RGB and CMY, and those based on human perception, such as Munsell and CIE L*a*b*, the traditional RYB color model (common to most early attempts at codifying color) has persisted among many artists and designers for selecting harmonious colors.

Complementary colors

Complementary colors exist opposite each other on the color wheel. They create the most contrast and therefore greatest visual tension by virtue of how dissimilar they are.

Split-complementary colors

Split-complementary colors are like complementary colors, except one of the complements is split into two nearby analogous colors. This maintains the tension of complementary colors while simultaneously introducing more visual interest with more variety.

Color polygons

Triads

Similarly to split-complementary colors mentioned above, color triads involve three colors in a geometric relationship. Unlike split-complementary colors, however, all three colors are equidistant to one another on the color wheel in an equilateral triangle. The most common triads are the primary colors. From these primary colors are obtained the secondary colors.

Analogous colors

The simplest and most stable harmony is that of analogous colors. It is composed of a root color and two or more nearby colors. It forms the basis for a color scheme, and in practice many color schemes are a combination of analogous and

complementary harmonies in order to achieve both visual interest through variety, chromatic stability, and tension through contrast.

Relationship

It has been suggested that "Colors seen together to produce a pleasing affective response are said to be in harmony". However, color harmony is a complex notion because human responses to color are both affective and cognitive, involving emotional response and judgement. Hence, our response to color and the notion of color harmony is open to the influence of a range of different factors. These factors include individual differences (such as age, gender, personal preference, affective state, etc.) as well as cultural, sub-cultural and socially-based differences which give rise to conditioning and learned responses about color. In addition, context always has an influence on responses about color and the notion of color harmony, and this concept is also influenced by temporal factors (such as changing trends) and perceptual factors (such as simultaneous contrast) which may impinge on human response to color. The following conceptual model illustrates this 21st century approach to color harmony:

Wherein color harmony is a function (*f*) of the interaction between color/s (Col 1, 2, 3, …, *n*) and the factors that influence positive aesthetic response to color: individual differences (*ID*) such as age, gender, personality and affective state; cultural experiences (*CE*); contextual effects (*CX*) which include setting and ambient lighting; intervening perceptual effects (*P*); and temporal effects (*T*) in terms of prevailing social trends.

In addition, given that humans can perceive over 2.8 million different hues, it has been suggested that the number of possible color combinations is virtually infinite thereby implying that predictive color harmony formulae are fundamentally unsound. Despite this, many color theorists have devised formulae, principles or guidelines for color combination with the aim being to predict or specify positive aesthetic response or "color harmony". Color wheel models have often been used as a basis for color combination principles or guidelines and for defining relationships between colors. Some theorists and artists believe juxtapositions of complementary color will produce strong contrast, a sense of visual tension as well as "color harmony"; while others believe juxtapositions of analogous colors will elicit positive aesthetic response. Color combination guidelines suggest that colors next to each other on the color wheel model (analogous colors) tend to produce a single-hued or monochromatic color experience and some theorists also refer to these as "simple harmonies". In addition, split complementary color schemes usually depict a modified complementary pair, with instead of the "true" second color being chosen, a range of analogous hues around it are chosen, i.e. the split complements of red are blue-green and yellow-green. A triadic color scheme adopts any three colors approximately equidistant around a color wheel model. Feisner and Mahnke are among a number of authors who provide color combination guidelines in greater detail.

Color Harmony: Why Hulk Wears Purple Pants

Color harmony is the theory of combining colors in a fashion that is harmonious to the eye. In other words, what colors work well together? It is the reason the

Hulk wears purple pants. It is the reason the original X-Men had yellow and blue uniforms. It is the reason behind almost all color design decisions.

Color Wheel

Color harmony is based on the concept of a color wheel. You can study up on the history of it here. Essentially, it is a wheel with all the colors formed in a circle. Primary colors are on three equally distanced points of the wheel. Typically these are Red, Blue and Yellow. In the field of painting, where the color wheel originated, these three primary colors were used to mix almost all other colors. In modern printing these are replaced with Magenta, Cyan and Yellow. Black is thrown in to create darker colors, thus C, M, Y, K.

Between the three primary colors on the wheel are their mixed colors—purple between red and blue, orange between red and yellow, green between yellow and blue. Theoretically, all colors feels somewhere on the wheel.

The wheel represents color in a circle. Closer to the middle of the circle, colors are less pure. At the outer edge of the circle, they are more pure and more saturated. In 3D representations of the color wheel, one might add darkness and lightness separate from saturation. The thing that is important to know in color harmony is that how dark or light or how saturated colors are does not affect their position on the wheel. Orange can range from a dark brown, to a bright orange to a pale skin tone. All of these are ORANGE when it comes to the color wheel.

Key Color

After the color wheel itself, the next important thing to understand is the key color. The key color is the most important color of your design. It is the color you can't change or the color of the element you want to draw attention to. If you are doing a painting of the Hulk, your key color is green as it is the color you can't change. If you are doing a photograph of a person, then their skin tone is your key color.

When determining your color harmony, you need to first determine your key color. From there, you can look at the various types of harmony and see which one you like best or which best suits your design.

Types of Harmony

There are 5 types of color harmony:
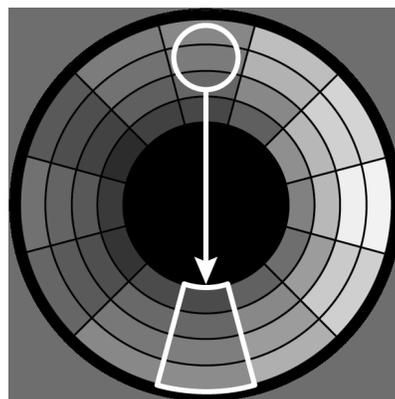
1) Direct Harmony: This is the most basic harmony. It is a point opposite to the key color on the wheel. This "opposite" color is referred to as the complementary color and thus the direct harmony can also be called the complementary harmony. Virtually all color harmonies (except Analogous) are a variation of the direct harmony. It is the reason the wheel exists as opposed to a different kind of chart.

The high contrast of complementary colors creates a vibrant look especially when used at full saturation but can be jarring if not managed properly. This is the most common color scheme and is easy to find in all sorts of designs. Hulk's green color has purple as its complementary color—which is the reason he wears purple shorts. Red and green are the Christmas colors and also happen to be complementary colors to each other. In photography, blue is considered the best color to put behind a person as it is the complementary color to skin tone.

Complementary color schemes are tricky to use in large doses, but work well when you want something to stand out. Complementary colors are really bad for text as both colors have a similar "strength" and will fight for attention.
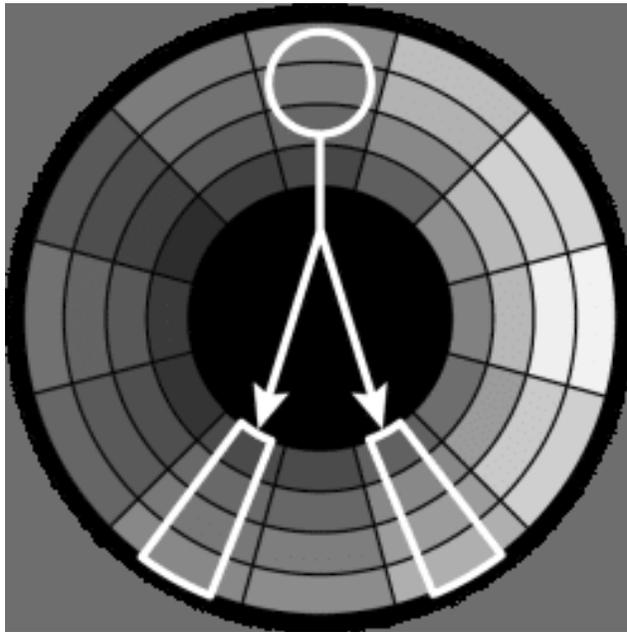
2) Split Complementary: Rather than the point opposite the key color on the wheel, the split complementary takes the two colors directly on either side of the complementary color. This allows for a nicer range of colors while still not deviating from the basic harmony between the key color and the complementary color.

This color scheme has the same strong visual contrast as the complementary color scheme, but has less tension. The split complimentary color scheme is a safe choice for virtually any design as it is near impossible to mess up and always looks good.
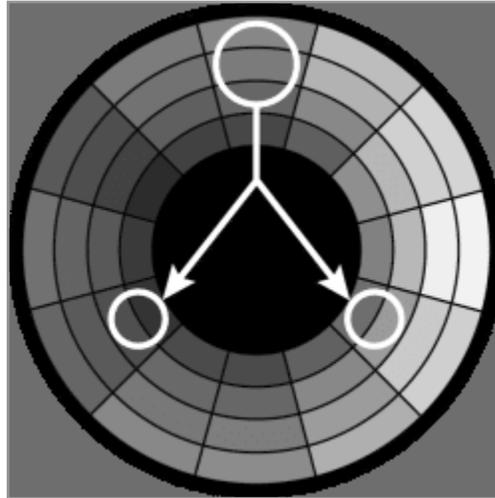
3) Triadic Harmony: Also called Triadics or Triads. This refers to the color two spaces to either side of the key color's complement. Essentially, with the triadic harmony, you are using three equally distanced colors on the color wheel. As such, you're stretching the basic idea of color harmony and thus this harmony is best used with only touches of color.

Too much of each color and your design appears to have too many colors and can be too vibrant.

To use a triadic harmony successfully, the colors should be carefully balanced—let one color dominate and use the two others for accent. Or, desaturate all your colors and only use the triadic colors in small spots or touches.
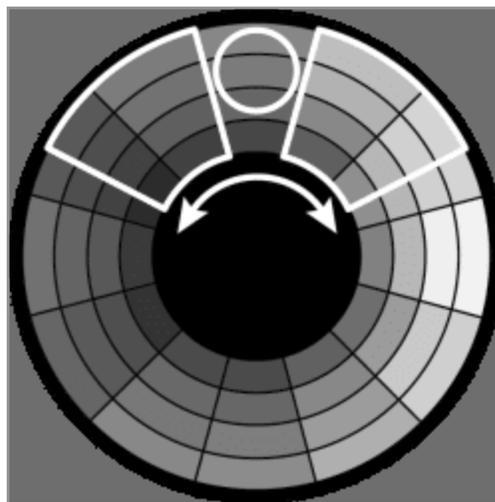
4) Analogous Harmony: Also referred to as related colors, these are the colors directly on the left and right of your key color. They usually match up quite well and create a serene and comfortable design. While this color harmony can be pleasing to the eye, it can also come across as monotone. If you are going for a design that's primarily one color, this is a good choice.
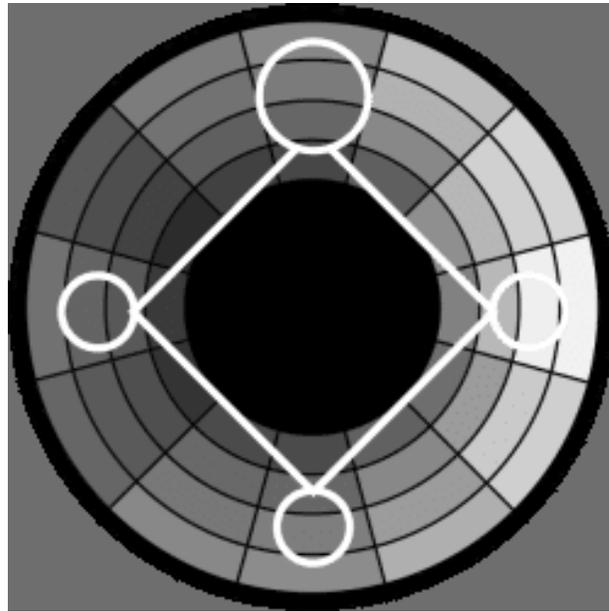
5)   Tetradic Harmony: Similar to the Triadic, except that there are four points, all equally distanced on the color wheel. This is a color harmony I've only seen mentioned in more recent texts on the subject of color harmony. A design using this isn't really using color harmony and is instead using every color on the color wheel. Or, where done more subtly, it is a design simply using two sets of complementary colors.

That being said, this harmony is good when you have numerous elements that all need to stand out on their own—such as a poster that features 4 or more characters. By using colors equally distant on the color wheel, each character gets equal attention.

Color Harmony in Clothes

Color coordination is one of the most important things when it comes to style. Understanding color theory can make life easier when matching clothing. Since colors are related, understanding their relationship makes mixing & matching clothing easy and fun.

All you need to get started is a Color wheel!!

Color wheel is the key tool for any color coordination. Break the routine, and instead of using the same combination over and over again, experiment new options. Give a splash of color and creativity with these basics theories.

There are basically 3 types of color theories. They create a Color harmony which engages the viewer and makes a balance in the visual appearance and bringing it catchy to the eyes.

Analogous Colors
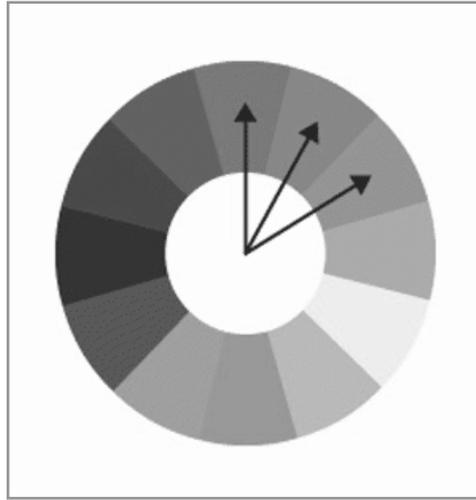
Analogous colors are neighbors on the color wheel they flow effortlessly together. A group of analogous colors consist three colors; with one of the colors being the dominant color. Red, orange, and red-orange are examples. This scheme looks stunner in nature too! It appears in Sunset as well as in the shades of Ocean.

To rock this scheme, let one color take the lead, and give the others supporting roles.

– Why use this combination?

● Analogous combinations are more harmonious

● Gives more sophisticated look

For instance, try the look below.
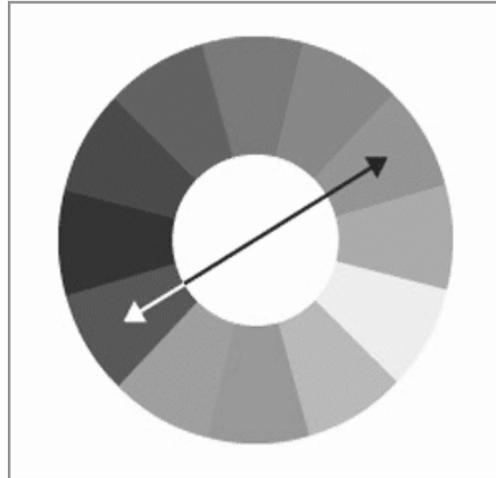
Complementary Colors

A combination of complementary colors involves choosing two colors that are found on exact opposite sides of the color wheel. These colors are highly contrasting and look very bold if put together. Such combinations usually draw the eye and stand out very well.

Every color has a complementary color. It's just whatever is on the opposite side of the color wheel. However, True complementary colors are equidistant from the center of the wheel.

To give you a few examples of such combinations, we can mention: red- green, yellow-purple as true complementary colors whereas red-blue, yellow-purple as artificial complementary colors.

These colors are not true complementary colors but if put in a combination, they go well together.

– Why use this combination?

● Make a statement with big contrast

● You are tall and want to break the height

For instance, the look below represents a true complementary combination.

This look represents an artificial complementary combination.

You can tone the color up or down in order to get a better effect.

Monochromatic Colors
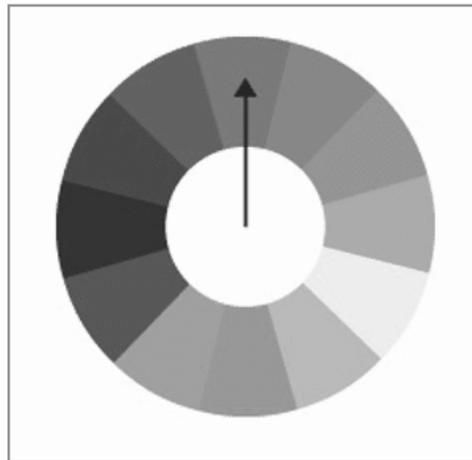
A monochromatic color scheme is a scheme where you use only one color. You can use it in the same shade or you can use variations of that color. Light and dark variations of one color blend beautifully. Such combinations are very hard to pull off, but if you manage to do it, you will look extremely subtle and elegant.

Wear dark on the parts you would like to downplay and lights, on the areas you want to play up. You can even mix textures, for example denim with a satin top or cotton dress with a satin scarf.

Why use this combination?

● For a more professional look

● If you are petite, monochrome combinations will help you add visual length

Pairing a light blue top with a dark blue bottom can be called a monochromatic matching. A color will always match a whiter, greyer, or blacker version of itself.

For instance, you can try the monochromatic combination below.

Monochromatic

Wearing colors is something that anyone can do with a little time and effort. Take these examples and create your own style, own identity and experiment with different combinations so that you discover what you like and what you don't!! In fact, that's what style is all about!

Bonus Tip –

● When adding colors in your Outfit, minimize them to three and take care they are in a ratio of 50:35:15.

● When you are putting together an outfit, it is recommended to have three colors at the most. If you want to add any other color. The safe bet is to wear neutral colors. Neutral colors are black, white, gray, khaki, etc.

4.7 SUMMARY

Color attracts attention, creates an emotional connection, and leads the consumer to the product. Color is often a primary reason why a person is attracted to and buys a particular item of clothing. A new T-shirt in a different color can help transform the look of a product year after year. Color captures a viewer's interest because it is both easily recognizable and distinctive. We often describe clothing in terms of color, such as "a blue suit."

The study of color is complex and involves light, vision, and pigment as well as science, technology, and art. In addition, colored pigment behaves differently than colored light. Although there are many models of color classification, the Munsell color system with its numeric notation for each color is widely used and accepted to describe color pigments and the color properties that relate to dress.

● Color Dimensions: All pigment color systems recognize that three dimensions describe color-hue (the name), intensity (brightness/dullness), and value

(lightness/darkness). All three dimensions are present in every color and every color starts with hue. Value and intensity are adjectives that describe variations of any hue (light bright green, or deep dull red, for instance).

- Hue: The name of the color as designated on the color wheel is its hue-the visual sensation of blue, for example. Each hue has an individual physical character: primary pigment hues are red, yellow, and blue. No other colors combine to make them, but these colors combine to make all other hues. The secondary hues, orange, green, and violet are mixtures of the adjacent primary hues; orange is a mixture of red and yellow; violet is a mixture of red and blue. The hue spectrum runs from red to violet, and is usually depicted as a circle of hues with the primary hues separated by the secondary. Tertiary hues (sometimes called intermediate) result from mixing a primary and a secondary, that is, red-orange or blue-violet.

Groups or categories of colors that share common sensory effects are often called families. Related hues (sometimes called analogous) such as blue-violet, violet, and red-violet, are adjacent on the color wheel and constitute a color family. Contrasting colors are separated from each other on the color wheel. Contrasting color schemes include complementary and split-complementary. Hues opposite each other, such as yellow and purple-blue, are called complementary because they complete the spectrum; each contains primaries the other lacks. Complementary hues can produce an afterimage of each other. If you stare at one hue for several seconds, when you glance away to a neutral surface, you will see an image of its complement. In a split-complementary scheme the color on either side of the complement is selected, green, red-orange, and red-violet, for example.

- Value: Each hue has a specific normal or home value; the home value of yellow is close to white or light gray, and violet is as dark as very dark gray. Values have an effect upon colors in combination. For example, the complements red and green have similar values, offering hue contrast but not value contrast. However, the complementary hues of yellow and violet at normal value offer both hue and value contrast.

Contrasting values can affect the perception of edge in adjacent surfaces. A light value surface placed next to a dark one offers a strong visual pull to the difference between the two surfaces. Applications can be found in the value contrast between a white shirt and black trousers, light skin and dark hair, or dark hair and skin and pastel suit.

- Intensity: The relative purity or saturation of a color is its intensity, sometimes referred to as chroma. This dimension describes the strength of a color. Saturated colors are primary and secondary hues at their purest and strongest on the color wheel. Each hue has a range of saturation from full intensity to neutral gray. Intensity provides hue with its vividness or neutrality. Intensity yields a variety of expressions. A saturated hue is intense and usually evokes a response of excitement or energy. Less saturated hues range from nearly bright to almost muted incorporating many moods. Hues in the lowest intensities are neutral colors and often are the foundation of a wardrobe. If used together at full

strength, complementary colors can vibrate. The addition of a hue's complement lowers its saturation toward neutral gray and can increase its livability.

Intensity is influenced by surface texture. Even minor surface irregularities reflect minute areas of light that cast miniature shadows; this has the effect of dulling the intensity of a color. If a fabric with a distinct weave or surface were dipped into the same dye bath as a smooth material, it would appear duller in color because of the softening effect of the napped texture. Conversely, a smooth shiny surface will make a soft color appear stronger.

- Visual Mixing: Colors combined in very small patterns or woven together appear to mix visually. When two or more colors are interwoven onto one surface the result can be more vibrant than a surface of just one color. Complementary hues or black and white threads woven together will create a surface that appears gray or neutral when viewed from a distance. If the size of the black and white threads is increased, a salt-and-pepper effect is created.

Use of the phrase **color scheme** may also and commonly does refer to choice and use of colors used outside typical aesthetic media and context, although may still be used for purely aesthetic effect as well as for purely practical reasons. This most typically refers to color patterns and designs as seen on vehicles, particularly those used in the military when concerning color patterns and designs used for identification of friend or foe, identification of specific military units, or as camouflage. In hotel room designs, the relationship between preferences of color schemes and gender was detected. Male guests tend to prefer masculine color schemes, while female guests favor feminine color schemes.

A color scheme in marketing is referred to as a **trade dress** and can sometimes be protected by trademark or trade dress laws, as is the pink color of Owens Corning fiberglass.

Color schemes are often described in terms of logical combinations of colors on a color wheel. Different types of schemes are used.

Color combination formulae and principles may provide some guidance but have limited practical application. This is because of the influence of contextual, perceptual and temporal factors which will influence how color/s are perceived in any given situation, setting or context. Such formulae and principles may be useful in fashion, interior and graphic design, but much depends on the tastes, lifestyle and cultural norms of the viewer or consumer.

As early as the ancient Greek philosophers, many theorists have devised color associations and linked particular connotative meanings to specific colors. However, connotative color associations and color symbolism tends to be culture-bound and may also vary across different contexts and circumstances. For example, red has many different connotative and symbolic meanings from exciting, arousing, sensual, romantic and feminine; to a symbol of good luck; and also acts as a signal of danger. Such color associations tend to be learned and do not necessarily hold irrespective of individual and cultural differences or contextual, temporal or perceptual factors. It is important to note that while color symbolism and color associations exist, their existence does not provide evidential support for color psychology or claims that color has therapeutic properties.

4.8 GLOSSARY

- Achromatic: free of color, without color, colorless. Achromatic is used to describe the absence of any hue. Examples of achromatic schemes -- black and white, black and gray, gray and white, or black, gray and white.

- **Achromatic Simultaneous Contrast:** simultaneous contrast occurring between white, black, and gray. See Simultaneous Contrast

- **Admixture:** means the act of mixing or the state of being mixed. It also describes anything added; any alien element or ingredient. When used in the context of color it often refers to similar colors with one having a small amount of another color mixed into it. For example, the first swatch is gray and the second an admixture with blue.

- **Additive Color System:** the color system that uses light rather than pigment to create color. It is the system of digital media and computer screens. The additive primary colors are red, green, and blue and are often referred to by their initials RGB. It is called the additive color model because red, green and blue light are added together in various combinations to reproduce a broad array of colors.

- **Afterimage, Negative:** is an optical illusion that refers to an image continuing to appear after exposure to the original image has ceased. For example, prolonged viewing of a yellow square on a white background can induce a bluish square afterimage on the surface when the yellow square is removed from view. The afterimage is produced because the color receptors (cones) in the retina of your eyes become fatigued when you stare at a particular color for too long. When you look away from that color, the fatigued receptors are not working as well as are normal. Therefore, the information from all of the color receptors is out of balance and you see only the remaining colors as an afterimage.

- **Afterimage, Positive:** by contrast to negative afterimage, appear the same color as the original image. They are often very brief, lasting less than half a second. An example is the white spot you continue to see after a flashbulb goes off.

- **Aging eye:** The eye's clear lens can darken and yellow over time, which can cause older adults to have problems seeing dark colors.

- **Analogous Colors:** are colors two or more color that are side-by-side on the color wheel. To select an analogous color scheme, find any color on the color wheel. Then, choose two to four more colors directly to the left or right of your color without skipping over any colors; also called adjoining colors.

- **Bounded field/Unbounded field:** An unbounded field is a free form entry field; a bounded field sets the parameters for selection or entry for the user.

- **Color depth:** How many colors a computer screen can display, based on the number of bits per pixel.

- **Design validation:** An assessment of a website's functions and elements correspondence as identified initially with the design and the end users' actual needs.
- **Font color:** The color of the text.
- **Graphic elements:** An element of a user interface that displays information or can be manipulated by the user to pursue a task.
- **Hues:** The frequency of the wavelength of color; what we normally refer to as the "color" of an object.
- **Icon graphic:** An image that is usually interactive and represents an object or action or marker for entry into information.
- **Interface:** A view or presentation of an object or program.
- **Tone/Value** - Another word for the lightness or darkness of an area, a color, or black and white. Both tone and value are interchangeable terms that refer to the relative lightness or darkness creates as light reflects off the surface of an object. Brightness is measured in relationship to a graded scale from white to black. The contrast of values is used to give the illusion of space and three-dimensionally on a two-dimensional surface.
- **Pattern** - The emphasis of a visual form relationship through the repetition of tone or more visual elements. Many textures have or create a specific pattern. Pattern is related to the principles of Repetition, Rhythm and Consistency.
- **Density -** (Opaque/Transparent)
- **Ground** - That which is behind a figure, without dominant form.
- **White Space** - The space between objects in a composition; sometimes referred to as "positive/negative space."
- **Color Cast:** an overspread of a color or modification of the appearance of a substance by a trace of some added hue; also referred to as cast.
- **Color Combination:** is a general term used to describe two or more colors or color families that are used together.
- **Color Forecasting:** a process to determine upcoming consumer interest in certain colors and color palettes with the goal of predicting color trends and providing guidance that manufacturers and vendors can use in producing and marketing goods and services.
- **Color Marketing Group (CMG):** a globally recognized non-profit organization of color professionals who forecast color and design trends.
- **Color Palette:** is a planned arrangement or group of colors meant to be seen as a whole; also called color scheme, color plan or color composition.
- **Color Proportion:** The relationship between colors in an image or design.
- **Color Scheme:** is a planned arrangement or group of colors meant to be seen as a whole; also called color palette, color plan or color composition.
- **Color Spaces:** Refer to the type and number of colors that originate from the combinations of color components of a color model. Examples include: sRGB, CIE, HSB, Pantone, etc.

- **Color Temperature:** The warmth or coolness of a color.
- **Color Theory:** The study of color, types of order, observations, scientific facts, and psychology to explain color and the interactions of colors.
- **Color Vision Deficiency:** often referred to as Color Blindness, describes a number of different problems people have with their color vision, which means their perception of colors is different from what most of us see. Color vision deficiency is inherited and more common among men than women -- about 8% of males and less than 1% of females. This condition makes it difficult to distinguish certain colors or different shades of the same color.

4.8 REVIEW QUESTIONS

1. Explain the **Color Theory**.
2. What is **Color Harmony**?
3. Explain the **Color Context**.
4. Discuss the Prang colour theory.
5. Use a Color Scheme and Color Temperature for Design Harmony
6. Use Color Theory to Match What Your Users Want to See
7. Defining the **Colour Schemes or Colour Combinations.**
8. Explain the Color Dimensions.
9. What is **Color scheme**?

UNIT

5

COLOR WHEEL AND COLOUR SCHEMES

STRUCTURE

5.1   Learning Objective
5.2   Introduction
5.3   Grey scale Color
5.4   Tints and Shades Color
5.5   Student Activity
5.6   Effect of the colour tones on personality of the wearer
5.7   Colour Gradation
5.8   Summary
5.9   Glossary
5.10   Review Questions

5.1   LEARNING OBJECTIVE

After studying this unit you should be able to:

● Describe the Grey Scale Color.

● Describe the **Tints Color**.

● Explain the meaning and significance of **Shades Color**.

● Explain the procedure of **Romantic Fashion Personality**.

5.2   INTRODUCTION

The Color Wheel, which was developed by Sir Isaac Newton in 1666, is the basis for all color theory. The 12 basic colors are called 'hues'.
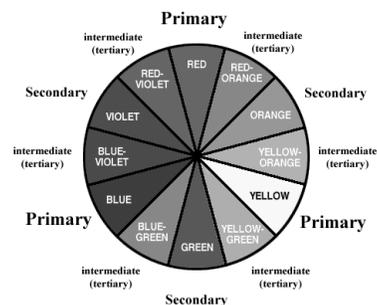
Most clothing comes in a more muted form of the true hues — either they are lightened by adding white (called a 'tint') or darkened by adding black (a 'shade').
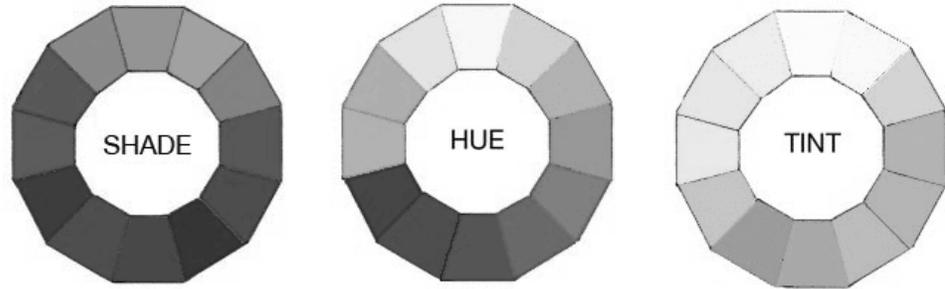
Any outfit will be a combination of these colors and the 'neutrals' — white, black, and the two combined to make grays of varying darkness. Brown is sometimes described as a 'neutral' base for an outfit as well, but it is still a combination of color wheel hues, and usually reads closest to orange or red-orange in outfits.

Understanding which relationships on the color wheel look "good" to human eyes and which seem bland or garish is the key to using the color wheel in coordinating your outfits.

The 3 Primary Colors
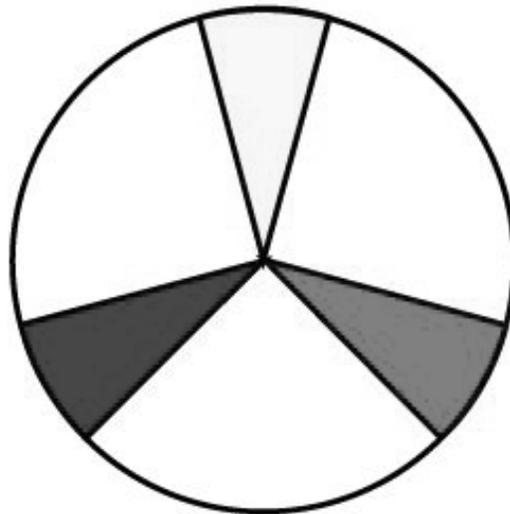
primary

Red, yellow, blue.

These are the only colors that can't be made by adding or mixing other colors together. All the other hues can be created by combining primary colors.

In their natural hue (without shading or tinting), they read as very bright, vivid colors to the human eye.

You use them when you want to grab the viewer's eye. As a result, you'll usually only see small accents in unaltered primary colors — a red tie or a yellow pocket square, but never a suit in that pure, bright blue.

The 3 Secondary Colors
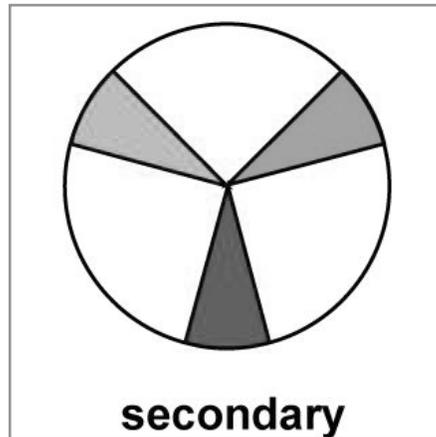
Green, orange, violet.

These are each created by combining two primary colors — red and blue to make violet, yellow and blue to make green, and red and yellow to make orange.

Each secondary color is directly opposite a primary color on the wheel. That relationship — opposite on the wheel — is called "complementary."

Human eyes notice the contrast between complementary colors more than other combinations. A complementing outfit will always read as bright and attention-getting.

As a result, many outfits combine a primary color (usually a shade or a tint of one) and a secondary color for the basic contrast.

The 6 Tertiary (Or Intermediate) Colors
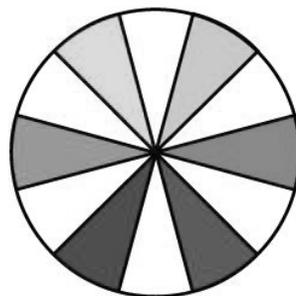
These are found between the primary and secondary colors. It's important to remember that they are distinct hues and not just shades or tints of the primaries and secondaries — a violet shirt isn't the same thing as a the deeper blue-violet.

It's a different color rather than a darker form of the same color, with a different complementary color on the other side of the wheel and so on.

Treating the intermediate colors as their own distinct hues will make a serious improvement in your understanding of your wardrobe colors.

Mixing Colors in a Man's Outfit: Mixing colors is an essential skill for any man who hopes to dress well. Mixing colors can create two effects — harmony or disorganization. When we mix colors in an outfit, we want to use colors that work with each other to create an appearance that's pleasant to look at, not a mash of color that looks chaotic.

If we don't mix colors or use any variety, the end result is most likely going to be bland or boring, which people don't want to look at. If we mix too many colors or mix colors in a non-harmonious way, it leads to a chaotic and disorganized appearance.
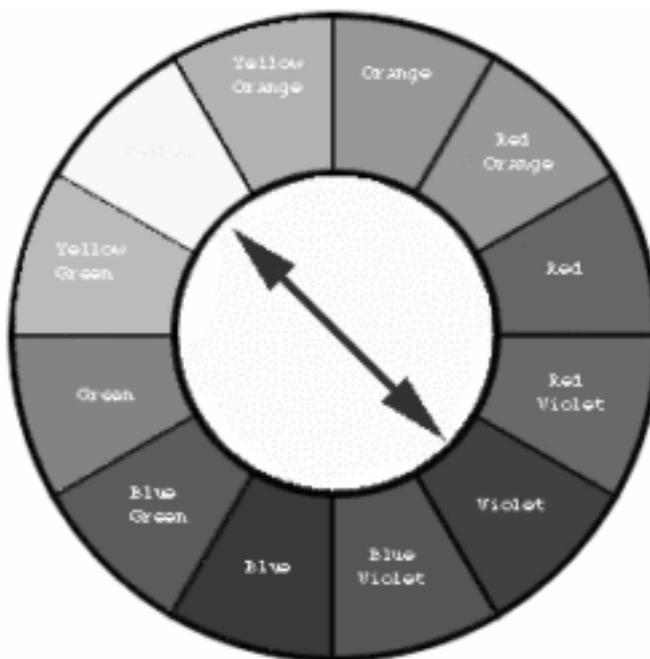
This is why it is essential to know how to properly coordinate the colors of an outfit. There are three color schemes that register as the most organized with human eyes — complementary colors, triad colors, and analogous colors.

Complementary colors, as discussed above, are directly opposite one another on the color wheel. This creates the most vivid contrast in an outfit.

It's most common to see a complementing color scheme on someone who needs strong contrast to stand out.

TV commentators like complementing colors since television has a hard time projecting closely-related colors without turning washed-out.
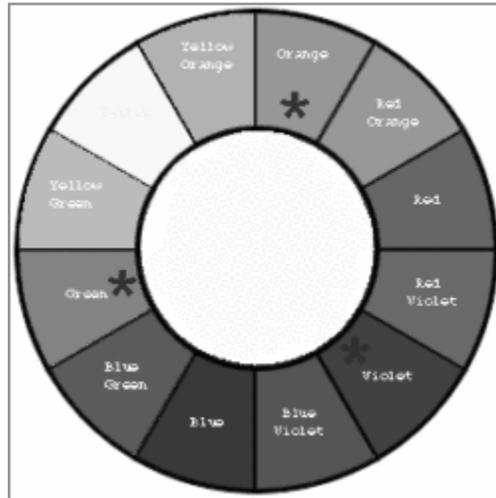
A small accent in a complementary color is a great touch on a suit or sport coat — pocket squares and boutonnieres in complementary colors always make an attention-getting splash of color.

Triad Colors are equidistant from one another on the color wheel. This creates the most balanced form of contrast.

Triad colors are a good scheme for an outfit with lots of pieces. A man trying to balance a suit, shirt, tie, belt, shoes, cufflinks, etc. might want to be thinking in terms of triads.

Some accents in neutral colors, such as black shoes and a black belt, will of course work with any color scheme.

Analogous Colors are directly adjacent on the color wheel. This creates a minimized contrast, giving a very consistent look. Analogous color schemes are great for looking a little more restrained.
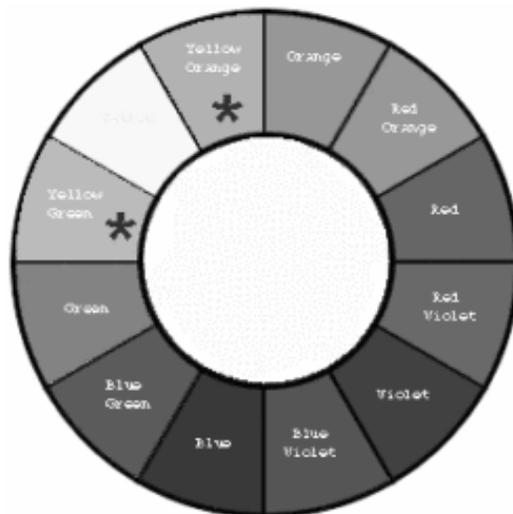
They make good office outfits. Some fancy occasions also call for analogous color schemes, such as a wedding party with a unified color scheme, but be aware

that fancy isn't the same as formal. For that you'll still need a standard black tie ensemble, which uses very little color at all.

Conclusion: Using The Color Wheel In Your Wardrobe: The relationship between colors is a science — you can get advanced degrees in it, as a matter of fact. Don't let that intimidate you. The three basic relationships outlined above are always good staples for your wardrobe.

And remember that you also have tints and shades to play with — a deep burgundy shirt reads just the same as a vivid red one for purposes of contrast and relationships on the color wheel, even though it appears much more restrained (and more socially-acceptable) in outfits.

Not all your outfits will follow the color wheel relationships rigidly. Don't worry too much if they don't. Look for combinations that you feel comfortable in, using the color wheel schemes as a very basic guideline. A splash of difference here or there is what makes the outfit yours.

5.3   GREY SCALE COLOR

Greyscale coloring pages vs. greyscale drawing vs. black and white photography

Adult coloring has acquired a huge following all around the world in the past few years. Today, a new coloring book comes out every month, including some published by yours truly. While some artists enjoy this trend by exercising their skills and delivering a high-quality product, others ride the fashion wave and throw everything but the kitchen sinks at their audience and calls it "adult coloring books". In the spectrum that ranges from professional artists to imbeciles there is a huge grey area in-between. This area is filled with artistically inclined people with, usually, honorable motivations to create and publish coloring books. However, many, even if somewhat skilled, are not in tune with their audience. They don't consider the colorists when they deliver the product. Their sole objective is to be recognized as a published artist.

A lot of work and care goes into the creation of a book. A book, first and foremost, is always created for the audience, not the author. Coloring books are particularly personal because they are interactive. One must consider a multitude of elements in creating, formatting and releasing a coloring book. Things like subject matter, story line, continuity, consistency in style, thickness of line, amount of detail, element of surprise, originality, print quality, current interests and trends, all need to be accounted for in the creation of each and every page. Will a colorist enjoy working with this page? Will she learn something new during the process? Will coloring this page allow someone to lose themselves for a few hours and just relax, forgetting about their trouble? I aim to achieve all these things every time I sit down to draw a coloring page or compile an entire new book. This, of course, is a never ending learning experience. My audience guides and adjusts me, while also strengthening my style. I look at my work and I do not see perfection, but rather a journey to perfection. I am honored that my audience enjoys this journey with me.

There are truly professional and talented coloring book authors that I admire greatly. There are also those who, for the lack of a better term, are artistic criminals and should not be allowed to interact with people. The giant grey area, however, is of the most interest to me. Many of the individuals in that grey pool have actual potential to create good art, if only they had the artistic integrity to care about the needs of their clients. One of the styles of coloring pages that reveals a great deal about the integrity of the artist/author is the greyscale coloring pages.

There are three major types of greyscale images that colorists find themselves working with: greyscale coloring pages specifically designed for that purpose, greyscale drawings, and black and white photography.

Greyscale coloring pages are designed with the colorist in mind

Bennet Klein page colored by Laurie Gregory

Many successful and professional coloring book artists have well established artistic careers behind them already. These tend to be individuals who have been practicing various forms of art throughout their lives and are now applying their skills to this new book trend. These individuals have a clear and recognizable drawing style and have much to offer their audience. Some experiment with different presentations of coloring pages, some offer greyscale coloring pages in the likeness of their original art.

The greatest example of such art is the work of Bennett Klein. Whatever one might think of Bennett's subject matter or composition, one cannot deny that he is a talented artist with a great sense of presentation. One cannot look at his coloring page and not have an emotional response to it. Whether it's your style of not, it is well crafted illustration. So what makes Bennett's greyscale so desirable? How did he achieve such a huge following?

Bennett Klein is a huge coloring world success because he knows how to please his audience. No matter who colors one of his pages, the result will be stunning, because the drawing is stunning, and because his placement of delicate

shadows guides the colorists instead of limiting them. The shadows are there as mere suggestions of where the darker tones should be. An expert colorist will use these shadow suggestions to increase color saturation in those parts and to play with realistic shadow effects. An amateur colorist will simply apply a thin layer of transparent color, revealing all the grey shadows and still keeping Bennett's beautiful sketch style image. It is virtually impossible to make a Bennett Klein look bad. For the colorist, working with a Bennett Klein page is constant reassurance of their skill, wether they are actually learning and improving or just playing around.

That is the whole point of adult coloring. The majority of the coloring world uses these interactive pages as therapy of one kind or another. Most use it as stress relief or a form of concentration practice. A professionally created line art coloring page allows the colorist to fill in the empty spaces in any media and practice different styles of coloring. A professionally created greyscale coloring page should offer the same without limiting the colorist. Ideally it should offer just enough information to allow the colorist to achieve the effect of a 3D drawing while not interfering with the quality and the saturation of their color.

Greyscale drawings are finished works of art

Illustrations that are drawn by artists in black and white as finished works of art are often appealing to colorists, but they are not suited for coloring, not without some minor but tedious modifications anyway. Before we continue, let's take a look at the color wheel.
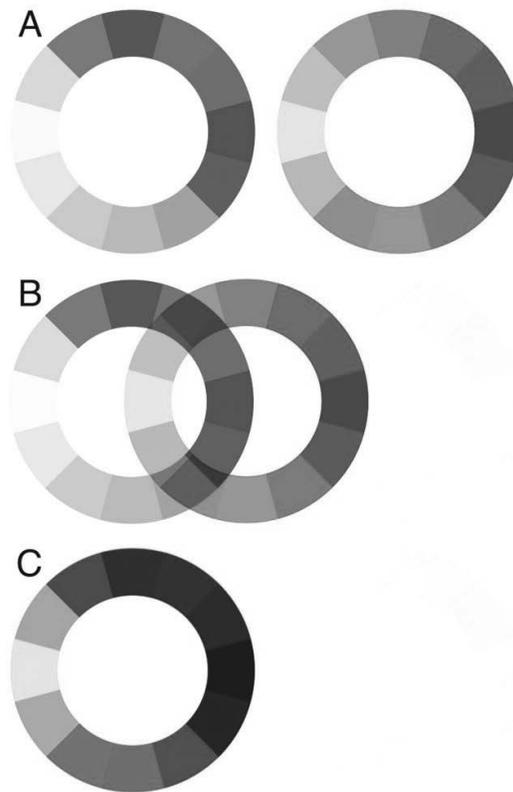
The greyscale color wheel on the left in example A represents the shades of grey used in a greyscale drawing. The colorful wheel on the right in the same example represents the hypothetical colors of that image had it been drawn in full color. When drawing a black and white image from scratch an artist imagines the picture in full color, or even draws from life which is in full color.

When I draw in greyscale I automatically translate the colors as I see them to their matching shades of grey. I do this in my head. This comes from years of practice and understanding of light and shadow and color saturation. When you look at a red shawl draped over a woman's body, you see a solid red color, and the reason you perceive it as three-dimensional and draped over a body is because you can see the shadows on it. You examine the shadows and discover that they are a deeper tone of red. Perhaps a colder tone even, maybe deep burgundy or violet, depending on the light. They are not however grey or black. When drawing this shawl in black and white I, as the artist, will select a grey tone that is just as dark as the burgundy that you see to represent that shadow. Once it is set in that dark grey color, it cannot be made burgundy again.

In example B on my color wheel illustration I suggest placing color over greyscale. In example C you can see the colorful wheel laid over the greyscale one. If working with pencils, markers, or watercolors (the most popular coloring media choices) one simply cannot achieve the original level of saturation when laying that color over the greyscale version. Furthermore, one cannot achieve a pure saturation of any color when trying to use pencils over black and grey illustration. In example C you can clearly note that all colors become muddy and dark.

One might say that he is content simply filling in the lightest or the white areas of the greyscale drawing, allowing all shadows to be grey and black, but that won't work. The reason it won't work is because he will attempt to fill in the lighter areas with highly saturated vibrant colors where in reality those colors are delicate and muted. The real place for highly saturated colors has already been occupied by the dark grey and black shadows, leaving him with nothing to color. He is therefore not creating a color version of the same image because his shadows are not natural and his saturation levels are unrealistic.

Let's take a look at this greyscale drawing that I made a while back as a gift for an artist friend of mine. When I shared this image online, I got bombarded with requests to color it. While flattering, I had to patiently explain that this image is not a coloring page. It is a complete and finished work of art. Every shadow is where it is because that's where it needs to be. The depth of every shade of grey is what it is because that's what I want it to be. If I wanted to paint this subject matter in full color, all of the darkest and highest in saturation colors would be where the darkest greys are, and the face and the beads and the hands and the shiny locks of hair would remain nearly white, because that is the level of contrast that I wish for this drawing to convey. Some colorists got offended, thinking that I am overprotective of my art or that I deprived them of a chance to "bring some life and color" to the image." What they failed to see is that I was thinking of them and their experience. I cannot, in good conscience, give my audience an inferior image to color. This image is impossible to color successfully. It's a trap.

One would suggest simply making the image lighter and THEN it would be suitable for coloring, but that too is lie. It is not enough to make an image lighter. One must restyle the entire structure of darkness and contrast for the image to become suitable for coloring. The main outline, for instance, needs to be a full saturation black, and clean and solid. The shadows and the details then need to be redone to be gentle suggestions of where your contrast areas are to be worked on. Simply making the whole thing lighter will result in a complete loss of the current delicate details, not leaving the colorist enough information to make shadow choices. This image, the way it is, is not capable of guiding the colorist on a journey to creation of a colorful image, as a coloring page should. As an experiment I allowed one of my colorist friends to color a scan of this drawing. A very talented colorist, she struggled a great deal and in the end came to the same conclusions. She could not eloquently explain why it felt wrong exactly, but she described it as an "uncooperative" coloring page. I don't think she ever even finished it.

A black and white photograph is NOT a coloring page

While some artists struggle to achieve the perfect greyscale effect in their illustration to be enjoyable to the colorists, others take a shortcut. Black and white photographs, or photographs made to look black and white by a single click of a button in Photoshop are an insult to the colorist. Every colorist wishes to complete a page and have it look amazing. One looks at a coloring page and tries to imagine what it will look like in full color. Some line art is beautiful but it is difficult for the colorist to foresee what can be done with it. Some line art is intimidating for that reason. The colorist struggles. Where do I begin? How do I select the right colors? What if it doesn't look right in the end? Most colorists are not artists. It is our job as artists to guide them.

A photograph is an appealing goal for a colorist. Especially if a photograph has a familiar setting, like a landscape, or if a color version of a photograph is also provided. Colorists get excited about these images because they can clearly visualize all the colors that they need to use and because they believe that in the end they will produce a work of art comparable to a color photograph. Wrong! So wrong. I see

colorists fall for this trap day after day. I see their mudded and faded grey-smear images, and their confusion at why this happened, and I can't help but blame those who deliberately give them false hope that these images can be made beautiful.
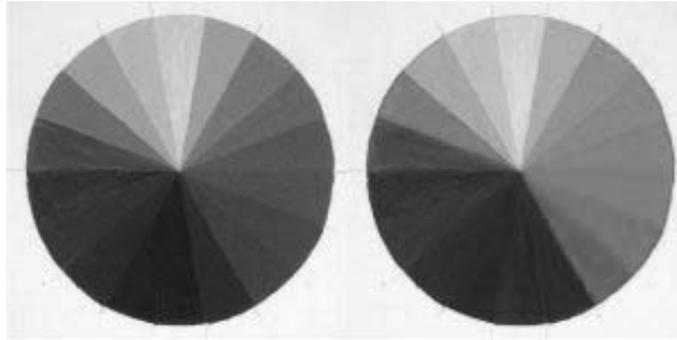
Let's take a look at the color wheel again; same concept. Your greyscale on the left and its matching color version on the right. When one makes a photograph black and white by sliding the saturation level all the way to the bottom in their digital program, of clicking "black and white" or simply setting their printer to "print in black only" and then scanning the image to use in a book (a terrible, cheap, unprofessional trick), one does not change the light and darkness of the image. All color levels remain the same as they were in the colorful image. Except now instead of color, you have the matching tones of grey. How on earth is one supposed to color that unless they paint over the image with acrylic or oil paints?

My favorite is the complete lie that is the greyscale photography cover art on such books. They always present the before and after version of the photograph. Except it is really in reverse. It's actually "now" and "before" and the "after" is not even represented. The true representation of after would be overlaying the color version onto the greyscale version and seeing if it makes any artistic sense at all. Look at the red on the color wheel, and now look at its matching shade of grey on the left. Does a pencil or a marker exists that will allow you to paint over that shade of grey and achieve the red on the right? No. It does not. Now look at the yellow, the green, the various shades blue… Get the picture?
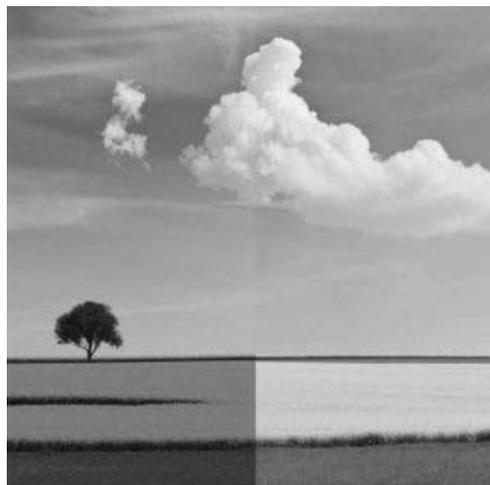
Let's examine this photograph proposal. Do you think you can color this grey sky and achieve the same shade and saturation of blue as on the colorful version? You would if the sky was left blank, but it is not. How about that vibrant yellow of the wheat? Are you even given a chance to achieve this color? No, you are not. You are given a black and white photograph and told that you can do magic and transform it back to the original.

One could make this photograph into a coloring page if one had the artistic talent and the time and the care to do so. Clearly one does not when one publishes photography books, usually filled with not even their photography, and collects royalties for a coloring book. There is a place in the art world for beautiful black and white photography, but it is not here.

Grayscale

Grayscale is a range of shades of gray without apparent color. The darkest possible shade is black, which is the total absence of transmitted or reflected light. The lightest possible shade is white, the total transmission or reflection of light at all visible wavelength s. Intermediate shades of gray are represented by equal brightness levels of the three primary colors (red, green and blue) for transmitted light, or equal amounts of the three primary pigments (cyan, magenta and yellow) for reflected light.

In the case of transmitted light (for example, the image on a computer display), the brightness levels of the red (R), green (G) and blue (B) components are each represented as a number from decimal 0 to 255, or binary 00000000 to 11111111. For every pixel in a red-green-blue (RGB) grayscale image, R = G = B. The lightness of the gray is directly proportional to the number representing the brightness levels of the primary colors. Black is represented by R = G = B = 0 or R = G = B = 00000000, and white is represented by R = G = B = 255 or R = G = B = 11111111. Because there is 8 bit s in the binary representation of the gray level, this imaging method is called 8-bit grayscale.

In the case of reflected light (for example, in a printed image), the levels of cyan (C), magenta (M), and yellow (Y) for each pixel are represented as a percentage from 0 to 100. For each pixel in a cyan-magenta-yellow (CMY) grayscale image, all three primary pigments are present in equal amounts. That is, C = M = Y. The lightness of the gray is inversely proportional to the number representing the amounts of each pigment. White is thus represented by C = M = Y = 0, and black is represented by C = M = Y = 100.

In some systems that use the RGB color model, there are 2^{16}, or 65,636, possible levels for each primary color. When R = G = B in this system, the image is known as 16-bit grayscale because the decimal number 65,536 is equivalent to the 16-digit binary number 1111111111111111. As with 8-bit grayscale, the lightness of the gray is directly proportional to the number representing the brightness levels of the primary colors. As one might expect, a 16-bit digital grayscale image consumes far more memory or storage than the same image, with the same physical dimensions, rendered in 8-bit digital grayscale.

In analog practice, grayscale imaging is sometimes called "black and white," but technically this is a misnomer. In true black and white, also known as halftone, the only possible shades are pure black and pure white. The illusion of gray shading in a halftone image is obtained by rendering the image as a grid of black dots on a white background (or vice-versa), with the sizes of the individual dots determining the apparent lightness of the gray in their vicinity. The halftone technique is commonly used for printing photographs in newspapers.

In some cases, rather than using the RGB or CMY color models to define grayscale, three other parameters are defined. These are hue, saturation and brightness. In a grayscale image, the hue (apparent color shade) and saturation (apparent color intensity) of each pixel is equal to 0. The lightness (apparent brightness) is the only parameter of a pixel that can vary. Lightness can range from a minimum of 0 (black) to 100 (white).

5.4 TINTS AND SHADES COLOR

Tints

You get tints when you add white to any hue on the color wheel. This lightens and desaturates the hue, making it less intense. Tints are often called pastels, and they strike many people as calmer, quieter colors. To make the tints below, use the hue straight from the bottle along with an equal amount of white. Again, since paints vary by manufacturer and type, the amounts you'll need will depend on the intensity of the pigment in a certain tube.

There are two basic ways to change the appearance of a color. First, you can add a different hue, like adding blue and yellow to make green. Secondly, you can change the appearance of a color by altering its value. To alter the value of a color, we start with the basic hue. From there, we add a neutral color, either white or black. Adding one of these colors to the hue reduces the brightness of the original hue, creating a new appearance.

To make a hue appear lighter, we add white. **Tinting** refers to adding white to a color in order to make it lighter. So, a **tint** would be any color that is lighter than the original hue. White reduces the intensity of the original hue, so tints tend to be softer and less defined. It's worth noting that not every hue will tint in the same way. Some colors are naturally more intense and, therefore, will require more tinting in order to become visibly lighter.

Shades

Add only black to a hue and you get a shade — which tends to be richer, darker and often more intense than the original color. Because many black pigments can be overpowering, adding black to a hue is tricky and sometimes frustrating. By adding even a small amount of certain black pigments, you can change the character of a hue, so use those sparingly. Instead, you can often make a hue darker by adding another dark hue rather than black.

Ways to apply tints and shades

Once you have a palette picked out, it's time to apply your choices to your design. Lighter or darker variations of a base color can add contrast, visual interest, and versatility to your color schemes. Need some inspiration for how to apply them? Check out the following ideas and examples:

Create cohesive branding

Having shades and tints of one color that you can use for various purposes and effects across various pieces of collateral will give your branding a polished, unified look. These two branding packages by design studio Mast demonstrate the flexibility and creativity that you can achieve in your projects with tints and shades.

The first set features multiple variations of its medium-blue base color, while the second effectively makes use of just a base color plus one darker shade. Notice how both reds (as well as graphic elements featured in the designs) are drawn from the brand's logo—a nice touch that reinforces the company's visual identity.
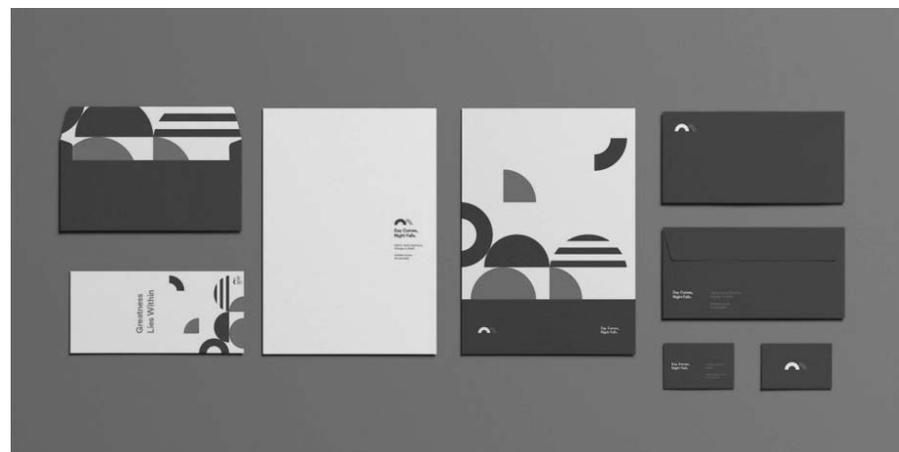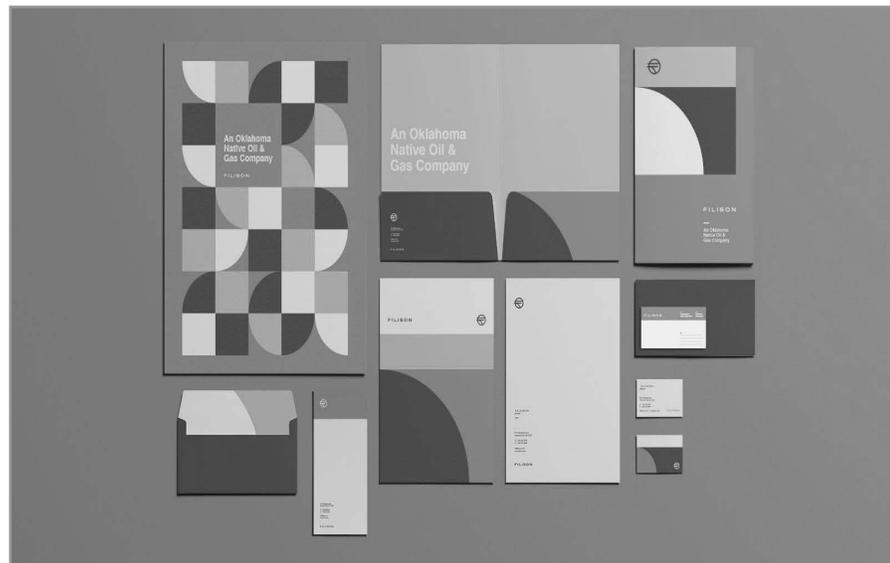
Add contrast

Contrast is key to good visibility and easy navigation in any design. Pairing one of your lightest tints with one of your darkest shades is an easy way to create contrast. Michael Hildebrand has done that here with his event poster. The pale pink text at the bottom of the poster stands out nicely against the deeper pink, almost magenta, background. That contrast is reversed for the small text box that says "4th Annual" near the top, and the combination of the two colors is effective either way.

As another example, this calendar design by Szende Brassai features at least four tint/shades of aqua and two of the coral color (plus some neutrals)—and juxtaposes them in such a way to highlight their differences—to create a high-contrast, visually interesting design. The contrast between warm and cool color temperatures also maximizes the effect.

Blend in

Color can be used to help design elements stand out by contrast, but, applied differently, it can also cause elements to blend together or look more understated. The following book cover, designed by Robert Frank Hunter, features shades and tints of blue that don't have a lot of contrast. This makes the whole background illustration recede a little so the typography stands out.
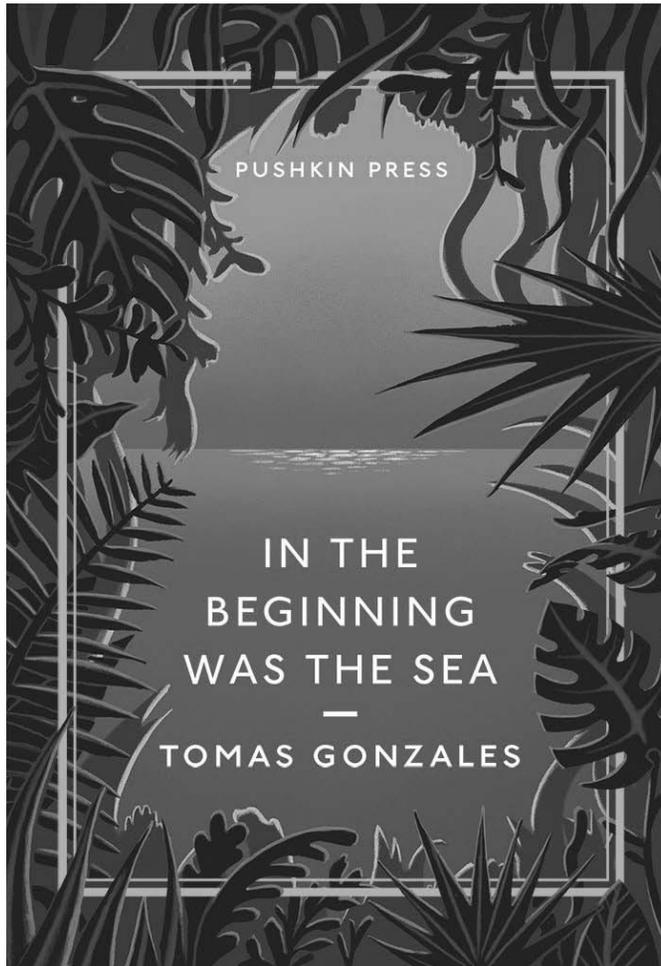
Simplify & separate

If all the pieces of a design were of a similar color, tone, or saturation, it would be hard to tell one element from another. That's where tints and shades can come in handy. When you have a lot of information to organize, using color variation can help visually separate different parts of your layout. Plus, a palette that shares a base color will prevent an already-busy design from looking needlessly cluttered or visually overwhelming with too many color choices.

William Mellor's infographic features just a green base color and one lighter tint, in addition to black and white, to keep things clean and simple and section off the design.

Tints and shades of blue are used in a similar way in the following website design by Owen Shifflett. The muted tones help the colorful product imagery stand out while giving the site's visual structure depth and a clear sense of organization.

NOTES

Create depth & dimension

One of the most common uses for tints and shades, particularly in art and illustration, is to create the illusion of depth and/or dimension.

This can take the form of color applied to represent light or shadow, as with this piece by Mads Berg that's inspired by vintage travel posters. Notice how a few well-placed swaths of color—particularly the shades of dark gray on the boat and dark blue in the sky and water—create curvature and depth that give the illustration an almost 3D appearance.

To continue the sailing theme, this pair of posters from DKNG Studios joints two tint/shade families (one warm and one cool) to create intricate, layered artwork. The color choices also suggest certain times of day and give the posters a sense of atmosphere, which brings us to our next technique…
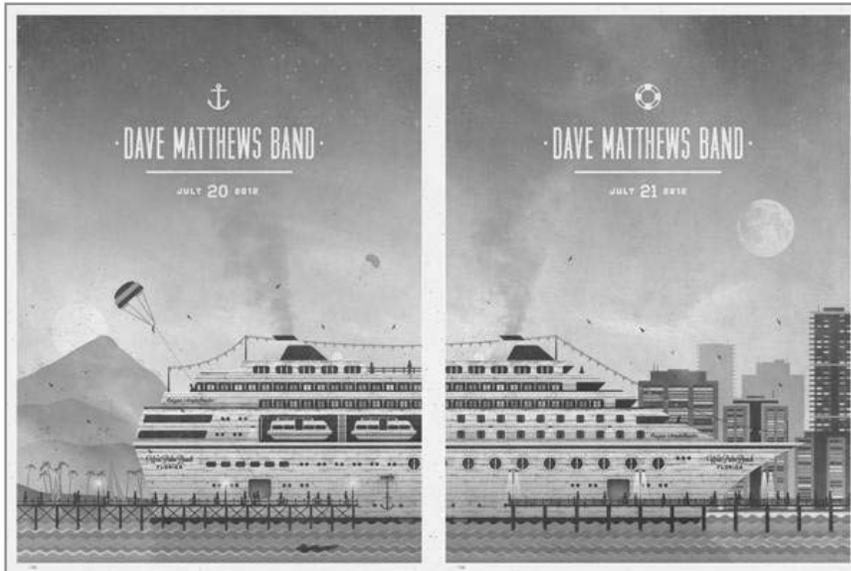
Establish a Mood or Theme

Color has a unique ability to infuse your designs with mood and emotion. Take a second glance at the concert posters we just looked at above. Don't they seem to represent summer, vacations, warm tropical locales, and lazy evenings? The color choices play a big role in communicating those feelings and creating a sense of atmosphere.

Color can also give projects context, reinforcing or clarifying existing themes or imagery. Here, the bold shades and tints Alan Cheetham used to design these labels give off a friendly, modern mood. But the colors also represent the scent of each candle.

In a similar way, Veronica Lethorn's packaging designs feature pairs of colors (often a base color plus a tint) that give the line a fresh, appealing, and contemporary look, but that also tie into each product's flavor.

Use gradients

Gradients are a great way to apply multiple tints and/or shades at once. Especially when used with transparency effects, they are a subtle option for adding more color to your designs.

Hyperakt's event invitations use gradients in two ways. If you look closely at the front image (left), you'll see that many of the triangles that form the silhouette graphics have their own gradients; this helps add dimension and texture to the illustration. A subtle gradient also forms the background of the inner portion of the invite (right).
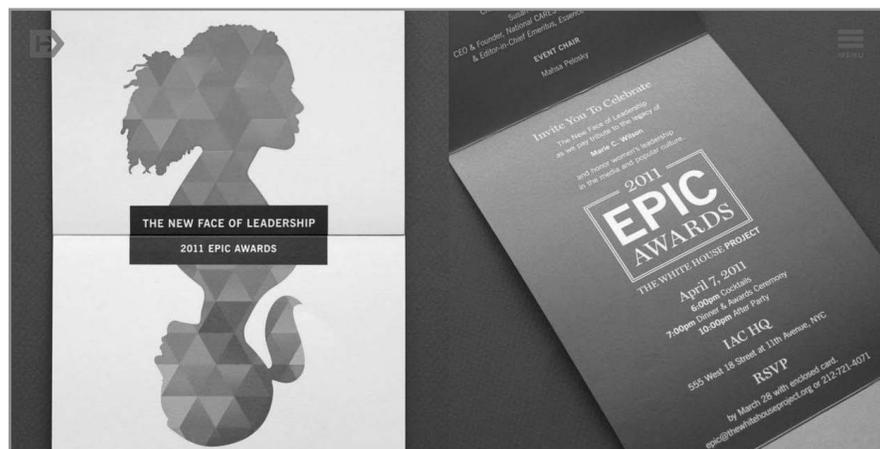
This packaging by Brandexpert features a transparent gradient as a small part of the whole design. It pulls colors from the background image to create a space where text is more easily readable.

Expand a limited color palette

For whatever reason, let's say you're limited as to the number of colors you can use in a design—maybe due to brand guidelines or printing requirements, or even just as a stylistic choice. Depending on the specifications of your project, you may be able to expand your palette with tints and shades.

Here, Julie Wauters has designed striking children's book cover using only tints/shades of green and pink, with the addition of black and white. The composition is in no way lacking in visual variety or detail due to so few hues; the tints and shades provide her with all the colors she needs.
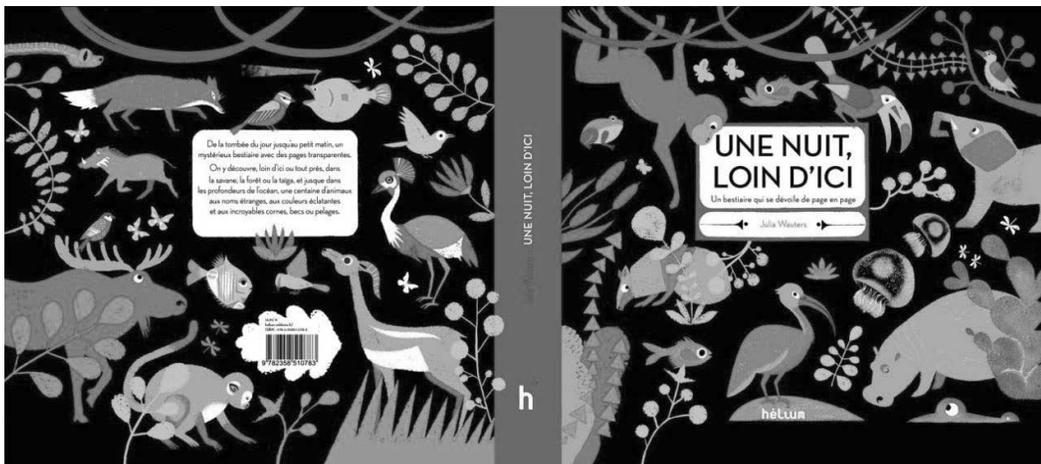
Use transparency

Transparent shapes and backgrounds can serve many purposes in a design, and when you're using a color scheme of tints and shades, they can expand your palette. When you layer two transparent tints or shades, you're creating another shade where they overlap.

You can also use transparency as a shortcut for creating tints and shades by layering a transparent base color over white or black. Oliver Lo achieves a similar effect by layering red tints and shades over black-and-white photography for this film series poster.

Keep it simple

When you want a design with a minimal or understated style, a monochromatic (or one-color) palette will help your toward your goal. Monochromatic color schemes often depend on tints and shades to provide enough variations to work with, but retain the clean aesthetic and simplicity of a single color.

This conference program designed by Chris Ross features only tints of yellow (we won't count the black and white), along with geometric shapes for a striking, modern composition.
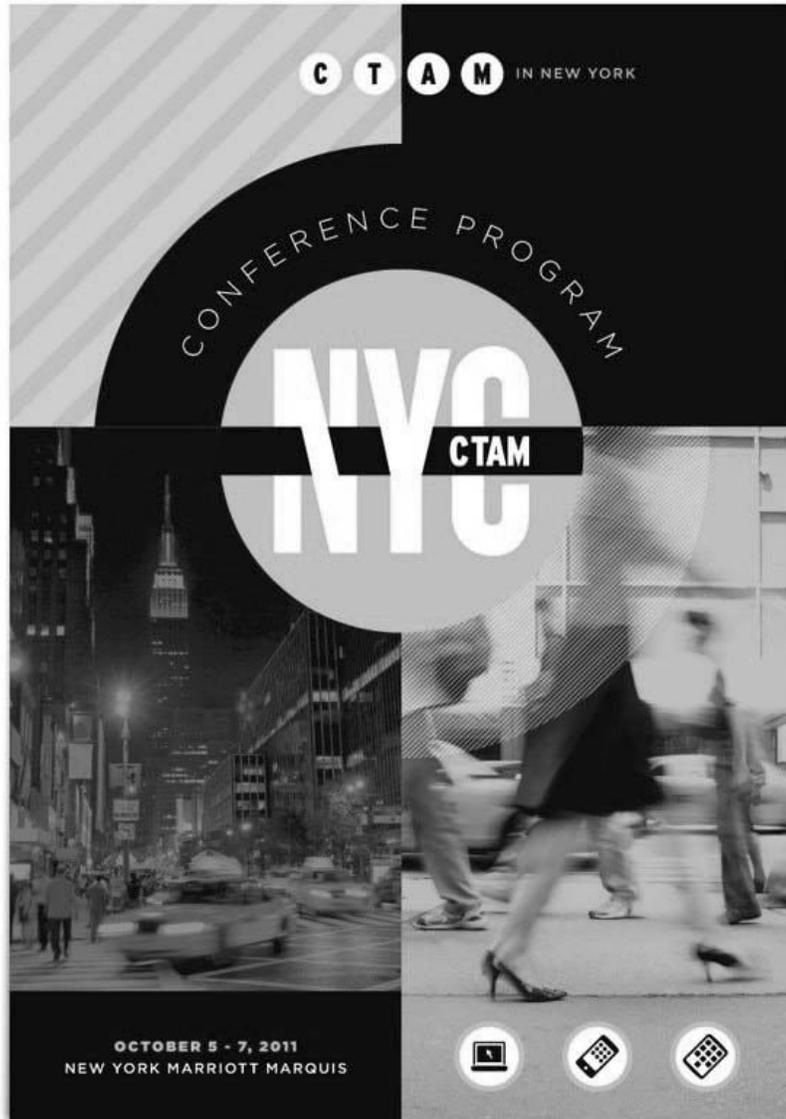
Even an almost-monochromatic palette can help simplify a design, as with the example below. In addition to the two blues, Steve Wolf has added off-white as a neutral and a small pop of red as an accent color. The result is still an attractively clear and uncomplicated design.

Create shapes and patterns

Tints and shades don't have to be used one at a time. You can arrange and combine them to form shapes, patterns, or other graphic elements to give your projects some extra pizzazz.

Chloe Park's business cards apply gradually darkening shades to a series of geometric shapes to add some visual interest to an otherwise unremarkable, solid-color background.

And this coffee packaging from Starbucks (creative direction by Mike Peck) takes the concept a few steps further, combining tints and shades in multiple color families, with transparency and blending effects, to create an eye-catching patterned background.

Double (or triple) the fun

Choosing two different sets of tints/shades for your designs can make for a versatile and visually interesting color palette. For example, Michael Hildebrand's promotional material for a restaurant mixes tints/shades of red and a golden tan color. The more neutral tan both offsets and enhances the more intense red.

As you can see by the strip of colors at the bottom of this image, Megan Clark has chosen three complementary tint/shade sets (in blue, green, and gray) for this branding project. She keeps the palette from getting out of hand by limiting each set to just two colors, one tint, and one shade.

Don't Forget the Text

There's no rule that says text has to be black, white, or gray—it can be colored, too! In fact, tints and shades provide an easy opportunity to tie your whole design together, including typography. Depending on what's behind it, applying a colored shade or tint to your text can be a nice alternative to black or white.

Francesco Poroli put this idea to work by applying his palette of purples across both text and imagery for a unified look.

In a different approach, Stephanie-Ann Savage's design for an educational booklet places tinted text against its base hue for a colorful and unique table of contents.

5.5 STUDENT ACTIVITY

1. What is Grey Scale Color? Explain the **Greyscale coloring pages vs greyscale drawing vs black and white photography**?

    ....

    ....

    ....

2. What is Tints color? Explain the Tints and Shade Color?

....

....

....

5.6 EFFECT OF THE COLOUR TONES ON PERSONALITY OF THE WEARER

Color plays a major role in our lives by the way it influences our moods and emotions. You wouldn't think that a color can make you feel secure or make you feel un-easy, but it can. When you choose to use a color or avoid it, that action can reveal much about your personality.

Even if you aren't consciously aware of the symbolic meanings of certain colors, your subconscious is. What one color means to you may have a completely different meaning to me.

Here's a guide to what the color of your clothing may be saying about you (with or without your knowledge):

Black colors: It used to be that black was the color of mourning. You only wore black while you were grieving. Luckily, wearing black is no longer just to respect the dead, and it's perfectly acceptable to wear it at any time.

Punk, Goth, and clubs kids are known to wear a lot of black, and almost every woman has that perfect black dress that's flattering to her body in her closet. Black symbolizes extremes -- all or nothing -- and is a color of strength, power, sophistication, elegance, and authority.

Blue colors: Blue soothes and cools. When you wear blue, you're broadcasting creativity, positivity, peace, loyalty, and you're saying that you've decided to live by your own rules, and by your own truth. Because blue wearers think for themselves, they're smart, have a quick wit, and are independent.

Brown colors: When you wear brown, you're representing all things solid and grounded such as the color of the earth. Brown is the color that people associate with someone who's stable, smart, and dependable (like the UPS driver).

Grey shades: One thing we all know is that there are many different variations, shades if you will, of grey. Wearing grey can wash you out, and make you seem indifferent, depressed, and apathetic. It can also seem suppressive and give off the

impression of a lack of confidence. There's a reason the classic color of sweatpants is grey.

Silver colors: Wearing metallic colors like silver isn't just for hookers or socialites anymore; metallic clothing comes in everything from cute tops to sophisticated dresses. If you wear metallic, you're letting the world know that you aren't shy, but that you're adventurous, up for anything, and hip.

Not everybody can wear metallic; it reflects the light, which will make you look older, so either you're young when you wear silver, or you're a bad*ss.

Red colors: If you want to stand out and grab the spotlight, wear red. It's the color of energy and is the symbol of life. An Indian bride wears red instead of white.

Wearing red is empowering and can give you confidence. Red is also the color of sensuality, aggression, passion, and boldness.

Orange colors: Orange is known as the color that makes new possibilities happen. It's creative, enthusiastic, and is associated with good times, warmth, and ambition. If you wear orange, you like to be the life of the party, and are in a positive, energizing, and engaging mood.

Pink colors: Pink is very much associated with femininity, but when a man is comfortable with both the masculine and the feminine side to his personality, he can really rocks a pink shirt or jacket. Pink is the unconditional love color and it's known to sooth out aggression.

Purple colors: Prince's nickname of His Royal Purpleness is kind of redundant as purple is the color of royalty and is a symbol of wealth. If you want to convey that you're rich -- both of possessions and spirituality -- then wear purple. Purple shows that you have a rich inner life, are intuitive, artistic, creative, and have great instincts about people.

Yellow colors: There's no mistaking yellow, as it's logical, happy, cheerful, and optimistic. It has the power to bring out creativity, but is completely overpowering if too much is used (you don't want to dress head to toe in yellow or you'll look like Big Bird). Yellow encourages intelligence and inspiration, and is a good color to wear when you need that added boost to finish a work project or ace those exams.

Green colors: Nature and money are green and both things are very important. Green is a calming color and is associated with generosity, healing, and a rejuvenated state of mind. People who wear green are charismatic and care deeply about the feelings of others.

White shades: Wearing white signifies cleansing and new beginnings. When you put on a white shirt or skirt, you feel as if you're staring the day with a clean slate, and you appear to have a fresh and bright outlook. White is the color of balance, harmony, purity, and courage.

The color of clothing we wear tells the world and ourselves a little bit about us. We can use those colors to feel better and brighter. Once you know, you'll have a secret method to feeling good about yourself and your day, even if that wasn't the way it started out.

Psychologists Clothing Colors That Reveal Your Personality

According to the stylist and author of the book, *Color Your Style* by David Zyla, "Even if your wardrobe is filled with clothes of a variety of colors and shades, there is always the color that you give a greater preference to because you feel more comfortable and confident in it. It is the very color that reflects your character."

After reviewing the findings of many experts, Bright Side shows you how your favorite color characterizes you in the eyes of people around you.

Black

"Black is a color that is taken seriously" says a fashion and style expert, Karen Haller.

Indeed, according to research in the field of psychology, the color black is perceived by others as an indicator of prestige, power, seriousness, and intelligence. Therefore, in many European universities, the graduation mantle is colored black.

People who prefer to wear black clothing are ambitious, purposeful but also sensitive. As a rule, they are emotional and easily excitable, although they often try to hide it. Black color helps them to switch the attention of surroundings from their appearance to personality since internal qualities of a person are most important to them.

Brown

Brown is the color of the earth, the color of something reliable, strong and stable. That's how people who often wear brown and its shades are perceived by others.

People who like to wear the color brown are slightly conservative, respect their elders and always look for peace, stability, and strength in everything. A girl in a brown dress or a man in a brown jacket gives the impression of a reliable, intelligent and rational person.

Blue

Journalist and psychologist, Lisa Johnson Mandell wrote, "Blue is the best color to put on to an interview because it sends out confidence and reliability. Therefore, many working uniforms or business suits are of blue color."

The scientists of the University of British Columbia held a study about the influence of color and found that darker shades of blue have a calming effect. People tend to associate the color blue with intelligence, trust, efficiency, and tranquility.

Blue shades of clothing are often chosen by kind, sympathetic, courteous and even shy people. As psychologists say, the person in blue will become a wonderful parent or an exemplary worker. Calmness and poise are two of the most common qualities found these types of people.

Green

Scientists from the University of Amsterdam say that the color green sustains a good mood within you and your surroundings. "The pleasantness of green comes from its kinship with nature, which causes a feeling of peace and contentment," says Leatrice Eiseman, the executive director of the Pantone Color Institute and the author of the book, More Alive With Color'.

Those who prefer green lead an active, public life, they always live in a good area and they are financially stable. They are also caring, kind and have a soft heart.

Purple

In the past, purple was often a representation of royalty and higher society. It meant sophistication, wealth and luxury. Cleopatra was known to be crazy about the color purple. During these times, only the rich could afford to wear such shades of purple.

Today, the purple color when worn in clothing indicates creativity, insight, and love of art.

According to experts, people who wear purple are emotional and sensitive. They are dreamy, passionate and love mysticism. These people are also known to be unpredictable and dealing with them can be both easy and difficult at the same time.

Red

"Red is the color of passion and power. You should give your preference to this color if you are going to persuade or impress somebody", says Kenny Frimpong, the manager of the brand of Italian menswear, Eredi Pisano.

Any bright shades of red draw attention to the person wearing them. People tend to associate the vibrant color with energy, movement, and excitement. Psychologists from the University of Rochester found that men are more attracted to women wearing a ruby tint. "Red is a stimulant for men," says Abby Calisch, a psychology professor at Eastern Virginia Medical School in Norfolk, Virginia.

Those who often wear red are bright, easily excitable, slightly self-centered and also addiction-prone.

Yellow

Yellow is the color of happiness, sun, and laughter. Studies show that the color yellow increases the production of serotonin in the brain, speeds up metabolism and lifts the mood to all those around it.

In addition, yellow increases concentration and attention, so it is often used on billboards, advertising sites, road signs, and street lines.

Experts say that shades of yellow in clothing are often used by active, creative and addicted people. They are bright dreamers and adventurers, ready to explore and conquer.

White

White is the symbol of freedom, purity, innocence, and simplicity. That's why many people decide to buy something white when they are starting something new in their life or entering a new chapter.

The color white attracts reliable people who love freedom and who look at life optimistically. These people are very neat and organized in everything they do; they like new beginnings and strive for perfection. In general, white can be worn by many different personality types. It is a neutral color, which rarely repels others.

Pink

Bright pink is the color of a flirty girl but can also be seen in children's wardrobes or on Barbie dolls. However, for those of a more mature age, softer, tenderer shades of pink are preferable as they represent ultimate femininity.

Soft pink is considered calm, warm and feminine and is one of the most powerful sedatives. Therefore, in some prisons, walls are painted in shades of pink to reduce the level of aggression.

According to psychologists, people who love pink are romantic, optimistic and self-righteous (in a good sense). As a rule, they are people who appreciate kindness and comfort above everything else.

Orange

Orange always gives an atmosphere a fun party vibe, in addition to being a warm and opportunistic color. It is also cheerful, creative and attractive.

Those who like to wear orange are optimistic, energetic and cheerful, and are eager for change. Although they can be slightly flaky people, still they can be ambitious and prudent.

Gray

As stylists like to say, gray is the color of balance, it is neither dark nor bright. If a person has a lot of gray clothing it usually means they want to remain invisible.

Gray and its shades are a symbol of tranquility, dimensionality, and maturity. Many middle-aged men wear gray suits, while women of older ages wear gray dresses.

Since this is a neutral color, it is extremely difficult to characterize the person who prefers it. They could be a gray mouse ready to silently obey the rules, as well as a judicious, low-emotional, and categorical person. But in most cases, a person who favors gray is someone who does not like to attract attention and tries to maintain neutral.

Romantic Fashion Personality

Fashion is also a factor that cultivates love and romance. It attracts a person towards others and this attraction may lead finally to a strong bond of love. Prolific fashion designer, Coco Chanel says, "Fashion is in the sky, in the street; fashion has to do with ideas, the way we live, what is happening." Fashion is therefore the power which actually metamorphoses an image. To some fashion is a typical form of art again to others fashion is verve, a sensation, a feeling. That is with respect to romantic fashion that has a unique way of dressing.

The romantic dresser sticks to the pastel colors and loves paisley prints, florals, gingham and polka dots. It is described by the long skirts, hats, gloves and deep cut blouses or dresses with plunging necklines such as a sweetheart neckline or V neckline. And sometimes searching and looking for special antiques which are not found in the usual places, maybe visiting certain countries for getting one's wants. Such people and especially women love girly, whimsical detailing such as tiered frill skirts, patchwork and overlays of lace, bouncy tiers and upstanding frills. This look is sometimes outdated. The love of the past is applied in present with this way of styling. This style refers to the Victorian period where a woman dresses according to that style known in the past.

Whatever it is to most people, fashion is a process, rather a significant method of utilizing accessories and clothing to bring out the best of them. Therefore hiding or showing fashion is actually a method of expression, and a mode to express their personality. Romantic fashion personality is soft, thin and lovely personality. This fashion loves people and goes with all the ages by differentiating each one from another, dealing smoothly without hurting or causing any harmful thing to people even by words and dialogs. This personality is often and mostly found in Europe due to their different nationalities and cultural variety of people. This personality is the most feminine personality among the others. It gives a soft and sweet taste for the wearer, and it helps the individual to form a picture for himself/herself as the heroine in a historical romance. Being feminine is the aim of most ladies; smooth soft and kind look is also available for those who have this style of fashion.

Trendy Fashion Personality

A trendy fashion style is an up to date style where modern fashion exists which is related to the technological phenomena nowadays. This type of style includes young people from age eighteen to twenty-four years who follow fashion trends, are technology-savvy, up on the latest modern music, and in general are part of a group of people who all follow these same trends thus they can be known directly from the first sight.

In addition there is difference between trendy women and men. Trendy girls are easily recognized. They are 'shopaholics', and therefore wear the latest top fashion clothes. They are notoriously known for tight-fitting jeans and belly buttons are exposed (usually pierced) by their wearing of small tops. Moreover they wear ripped jeans, flannel and converse shoes. Whereas typical trendy guys commonly wear tight jeans and are usually long with fancy new belts. They may also wear short sleeve t-shirts of top names such as FCUK, and may wear a jacket.

People of trendy fashion style appreciate a good sale, don't especially look for value in their wardrobe and investment dressing is not their thing. Also they limit their budget but spend more time on fashion than others. Although they own some clothing in neutral colors, the idea of wearing an item of classic tailored clothing purchased several years ago is foreign to their fashion sensibility. Trendy fashion is not suitable for workplace. In contrary it is a perfect style for fun and entertainment places dressing the latest designer jeans, or six-inch high heels, and trendy wardrobe which makes the wearer stand out from the crowd, showoff and also fit in well with an active lifestyle.

In conclusion, trendy fashion starts out being weird until it is picked up by a fashionable source consisting of models, stars and fashion labels further endorsing the product that is "trend" into the mainstream.

Casual Fashion Personality:

Casual usually is the style where probably jeans, t-shirt, sweats, and pants are preferable. This style is a relaxing and comfortable one and trumps style. This style comes when no shots is coming at the near and no lights would take place in the individual's life. For this purpose this style does not look through the new fashion features. A casual person is much comfortable in one's decisions especially in choosing the clothes and colors and it is suitable more for the casual lifestyle, since it doesn't fit the workplace and official places too. People around this stylist feel stressed and tired from seeing the person with the same style always.

Women and men dress randomly and they don't intend to wear something special or think hardly of the items even in buying it. They focus on accessories and hand bags more than any other alternatives. Casual style is totally away from the red carpets. This fad is just a casual one far from the famous life. The wardrobe of this style is free from special and chic items.

This fashion style has a very strange personality; it is often a confusing one. The person having this style is a comfortable person focusing on other issues than on clothes, however the look through each item in the store whether they want to

buy or not just for entertainment and being up to the latest fashion. An accessory attracts this person style since it is luxury according to them and it can complete their personality. This personality goes easily in wearing but confusing in mental thinking. Thus, casual fashion style is good in some places and inappropriate in other cases. Being a casual fashion style is very simple and easy.

Fashion is an essential and primary issue to be realized especially when an individual recognizes his/her personality and what fits it. Dealing and cooperating with fashion and styles is not an easy method, since not everything can be suitable and appropriate. In additional to that having a unique fashion style is not preferable since it makes a sense of loneliness and far from the usual styles found around. It minimizes the individual's personality as well. It is a way of showing thought, kindness, and feelings. A person must ask himself directly when looking at the mirror what clothes fits him/her exactly?

Choosing the colors is one of the most important manners to care about and take into consideration. Choosing those modes reflects one's attitude through life and his/her taste in fashion. It is all related to one's perceptions. Furthermore, differentiating among classic, trendy, romantic and casual style is a bit hard on those that have no definite type of dressing and for those who don't care for being a tidy and a good person. Choosing shoes, bags and accessories goes also for the rule of choosing those items and related them to clothes.

In conclusion, by looking at a person we can know and realize what he's thinking of and his feelings by just looking at their way of dressing. This is a very simple way in knowing personalities rather than keep noticing each single movement of talking. Without regarding the emotions that also can be a big and important factor for distinguishing personalities.

Fashion is related historically to an individual's personality since it gives a general idea of what the person is thinking of and minimizes his personality as well. Personalities have a big and great responsibility; they represent the individual himself. Clothes help in expressing the innermost thoughts, kindness, and feelings. This is enough to know what kind of clothes and what way to wear appropriately. Sometimes we feel uncomfortable for being in a place that obliges us to be with a certain dress while we have a different life style. Fashion simply is our appearance, manners and characteristics. Fashion and personality are related and each one completes the other. When looking at a well-dressed person you probably ask yourself does this person create the clothes or just those fit him exactly? Colors most of the time give the mood of the person; choosing the color while dressing is done according to the mood of the person, no one can dress red, green, or yellow if he is in a certain situation and not happy, while dark colors are relaxed colors worn by the stressed and sad people.

Attraction for woman is just as visual as it is for man. They think what she might be from the way she dress and walk and vice versa.

Selection of the clothes according to the occasion, time or mood reflects the taste of a person. The way of choosing the dress comes without planning and it can't be realized by the person himself unless someone points and asks about sadness

and gloominess. Fashion does not necessarily means that one has to wear what is common to all but it relates to a person own thinking and perception.

Everyone likes to be special and unique where as in some situation being unique is as being lonely and far from the world, for this purpose there are different trends, and designers that make a person dress the way he likes and the way it fits his personality otherwise fashion and style will be a ridiculous job.

Moreover there is a story behind what people wear. It is not as simple as we can conclude from the first look; time is needed to adopt fashion. Thus taking time in choosing clothes and coming up with a style is an essential issue to take into consideration since it became a way of judging a one's personality and mood. A person's personality is shown through his fashion style whether it is: casual, classic, romantic and trendy style. Most of the time fashion personality fits a person's lifestyle. Classic Fashion Personality

Classic fashion describes the style exactly. The person wearing classic has neutral look such as gray, navy blue, beige and black which is the key in color choice among those colors. This gentle clothes and accessories style is more likely for the people above the age of forty since if a woman under 25 years old dresses this style then people around will probably ask why she is looking older and over 40 years. People of this style do not ignore their traditional lifestyles but they try to show their personalities whether the clothes are very expensive or not where the aim is to look chic and elegant.

Most women choose this style of fashion for a reason that wearing classical clothes makes them look thinner and thus taller. Women prefer to wear this style for the purpose of simplicity, chicness, and highlighting their personality. These classical women have a linear approach to fashion where they choose durable fabrics such as tweed, wool blends, cashmere, silk and good quality of cotton. They go for the timeless wardrobe and this includes their fashion accessories. Being elegant and tailored in the classical fashion personality is the desired purpose that wearer look for while choosing this style.

This style differs from another since it's the only style which by looking at, the wearer can recognize directly that it is suitable to his personality. This style shapes the way of moving and walking around with a sense of elegance and softness without even feeling if touching the ground or not. Classic fashion always starts with the simplest ideas. Silhouettes are sleek and concepts are unpolluted. It is this clean thinking that allows a classic fashion to melt into any current theme or style. The biggest benefit of this style is that classic styles as a little black dress are different from the trendy ones. According to men simple jacket, pant and bow-tie is most preferable in classic style. Classic fashions tend to stick with classic colors as well as classic lines. Black, blue, white and brown are much more common than bright yellow, hot pink and neon orange. Natural materials, such as cotton, silk and leather, are much more common than synthetics, such as polyester, rayon and pleat her. In addition to the tailored and elegant style, sustainable style is also one of the classical fashions. However it is a smart investment in which the purchasers spend more on a single quality item of clothing than spend loads on throw away

fashion accessories. Furthermore, they on their neutral colors and dark suits for years to come.

Thus, classical style is related and almost has a peace of mind personality, means no confusion of what dressing since this style is very simple, and by giving a special touch of your lifestyle gives a great classical look. The person carrying this fashion style is a very simply person by which he/she looks at the clothes and buy without caring about the price, it is enough that this is appropriate to his/her personality. This personality is often tends to take the shots and being famous people. Minimalism and Preppy fashion are also a variation of this style. Thus who feels his style fits the classical one then do not hesitate in being a classical fashion style.

5.7 COLOUR GRADATION

Color gradient

In computer graphics, a **color gradient** specifies a range of position-dependent colors, usually used to fill a region. For example, many window managers allow the screen background to be specified as a gradient. The colors produced by a gradient vary continuously with position, producing smooth color transitions.

A color gradient is also known as a **color ramp** or a **color progression**. In assigning colors to a set of values, a gradient is a continuous colormap, a type of color scheme.

Types

Axial gradients

An axial color gradient (sometimes also called a linear color gradient) is specified by two points, and a color at each point. The colors along the line through those points are calculated using linear interpolation, and then extended perpendicular to that line. In digital imaging systems, colors are typically interpolated in an RGB color space, often using gamma compressed RGB color values, as opposed to linear. CSS and SVG both support linear gradients.

Radial gradients

A radial gradient is specified as a circle that has one color at the edge and another at the center. Colors are calculated by linear interpolation based on distance from the center. This can be used to approximate the diffuse reflection of light from a point source by a sphere. Both CSS and SVG support radial gradients.

Conic gradients

Conic or conical gradients are gradients with color transitions rotated around a center point (rather than radiating from the center). Example conic gradients include pie charts and color wheels.

Other shapes

In vector graphics polygon meshes can be used, e.g., Adobe Illustrator supported *gradient meshes*.

Effect of color space

The appearance of a gradient not only varies by the color themselves, but also by the color space the calculation is performed in. The problem usually becomes important for two reasons:

- Gamma correction to a color space. With a typical γ of around 2, it is easy to see that a gamma-enabled color space will blend darker than a linear-intensity color space, since the sum of squares of two numbers is never more than the square of their sum. The effect is most apparent in blending complementary colors like red and green, with the middle color being a dark color instead of the expected yellow.
- Handling of other perceptual properties. In information visualization, it is undesirable to have a supposedly "flat" gradient show non-monotonic variation in lightness and saturation along the way. This is because human vision emphasizes these qualities, causing bias or confusion in interpretation.

Gradient

It's a bold statement. A way to add depth and dimension to your design. You'll feel your eyes relax as they gradually transition through the page, flowing from one color to the next…

Flat colors stifle your design's potential. Gradients, on the other hand, open the door to infinite possibilities. It's not just about the trendy look you'll have for a while, it's more than that.

Color evokes emotional responses. When done well, you'll experience positive feelings. However, when you create a chaotic cluster of random colors… Well, the emotions you evoke won't be as pleasant.

Smart gradients can cultivate connection, make an impactful impression, or even move us toward action. In a world where we're all searching for those experiences, it's no wonder gradients have become the web design technique that just won't quit.

Types of Gradients

Before plastering your website with the latest blends, let's get a lay of the land…

There are several types of gradients. All involve a central starting point where the color starts and progressively blends into other colors. This results in a certain pattern, depending on the type of gradient. The specific area size, shape and gradient style will all affect the finished look.

Linear
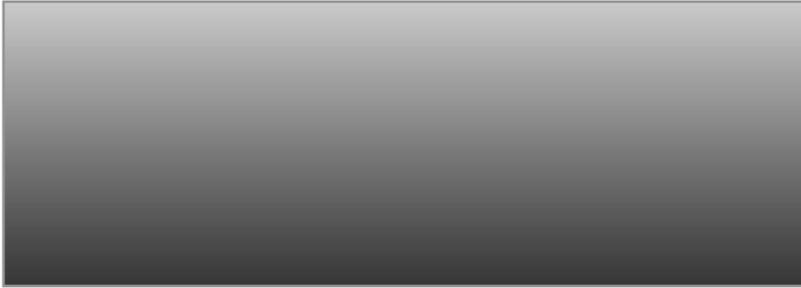
When you think of the word gradient, this is likely the concept that comes to mind. It's one of the most common techniques. The color transitions from the starting hue to end in a straight line.

Radial

In a radial gradient, the colors fan out from the starting point in a circular pattern.
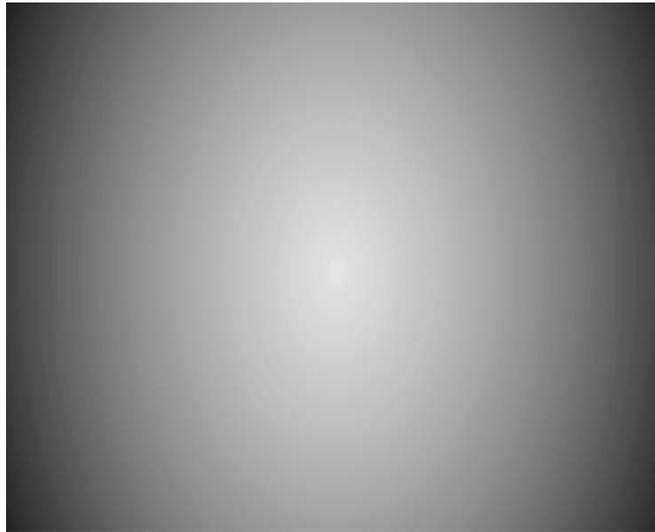
These gradients are often used in app icons, for example.
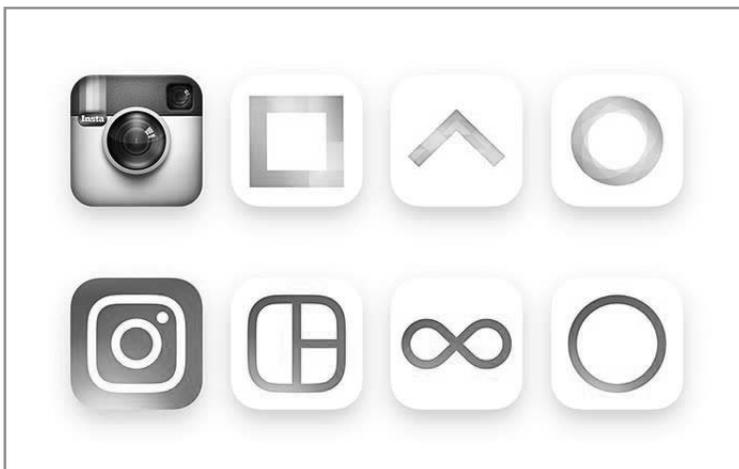
It creates highlights and shadows, which gives the icons more depth and dimension.

Angle

An angle gradient sweeps counterclockwise around the starting point. The line between the start and end points define the angle.
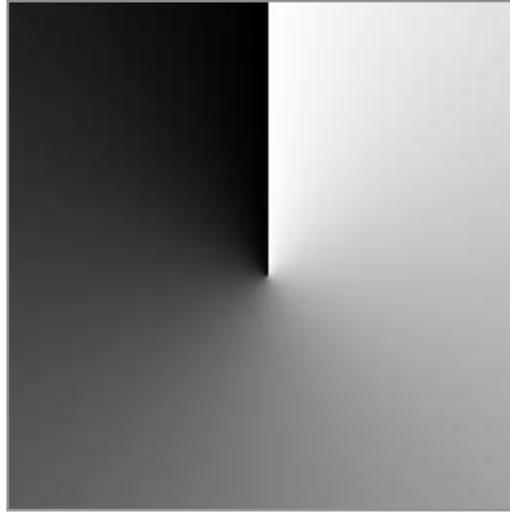
Reflected

It's all in the name. Think of a mirror and you'll understand how a reflected gradient works. The color is mirrored on both sides of the starting point.
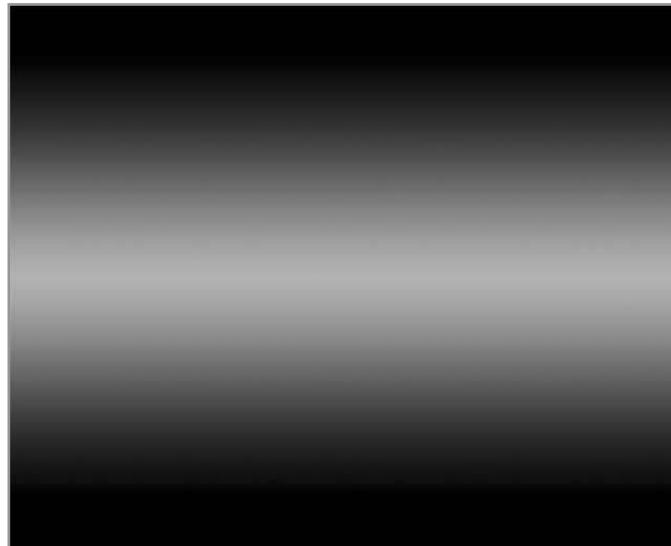
This is a great technique to use when creating images of glossy items or objects reflected on glossy surfaces.

Diamond

As the name suggests this gradient creates a diamond shape from the starting point. The end point is one corner of the diamond.
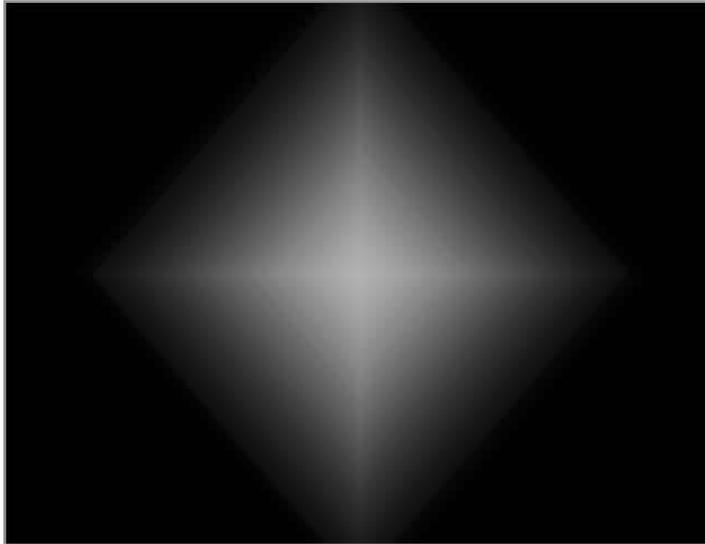
How to Use Gradients in Modern Design

We all love this technique when it's done well, whether we realize it or not. It helps create eye-catching and memorable visual designs.

Designers can use various techniques to add gradients and blend colors to create a unique look to their designs. For example, Spotify's duotone gradient images are characteristic of the brand and add emotion to playlists.

Use them as a subtle polish in the background with delicate transitions of monochromatic shades. Enhance images with a soft color overlay or make a bold statement using vibrant colors to highlight design elements.

Here are a few specific strategies for using gradients in modern design:

Bring Depth and Dimension

Achieve a natural effect with the highlights and shadows of a gradient. Produce highlights and shadows which give a more natural effect. In nature flat colors do not exist, there are always subtle differences in color and transitions from light to dark.

Gradients can add dimension to images, text and other design elements. As a type of light source, it produces subtle transitions and shadows to create a sense of depth.

Add Life to Software

A great user experience intuitively directs customers through the software. The right gradient subconsciously leads users toward the focal point and infuses a bit of life into your design.

Subtle gradients can soften geometric designs and create a more natural and realistic look.

If you're trying to grab attention, bold multi-tone gradients can create interesting high-impact, stand-out designs. They're also an easy way to add some lighthearted charm.

Convey Emotion or Mood

Color evokes emotions, alters moods and ignites reactions. Sometimes we can use this science to connect with the audience on a deeper level.

This means you've gotta choose the right colors for your brand. Bright, bold colors stir positive feelings like happiness. On the other hand, deep tones can bring calm while communicating a sense of intelligence and trust.

Tips for Designing Gradients

Choose the Right Colors

Do you remember color wheels from grade-school art class? Good, you're going to need it. Choosing the right tone is more than picking out two random colors. Find complementary shades and experiment with several combinations.
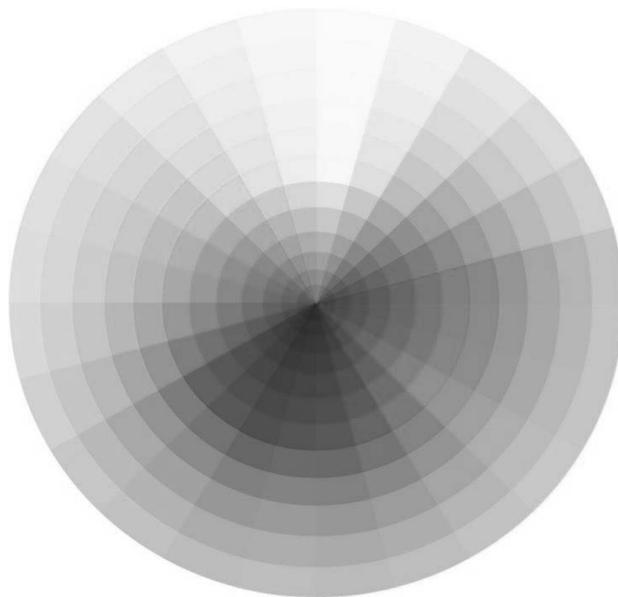
Try Out a 3-Stop Gradient Design

Sometimes a gradient with only two color stops causes a dull gray color in the middle of the blend. The simple fix? Add a third color.
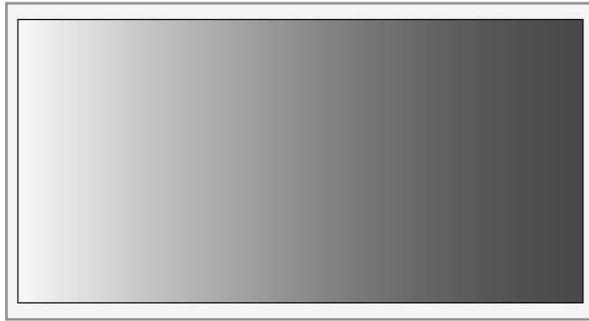
It's as easy as finding a complementary shade between the two -- one that's not dull gray.

Find Inspiration in Nature

Nature is the ultimate design inspiration. In fact, it's one of the best places for inspiration when it comes to identifying complementary gradients. Consider the ocean, sky or tropical sunsets…
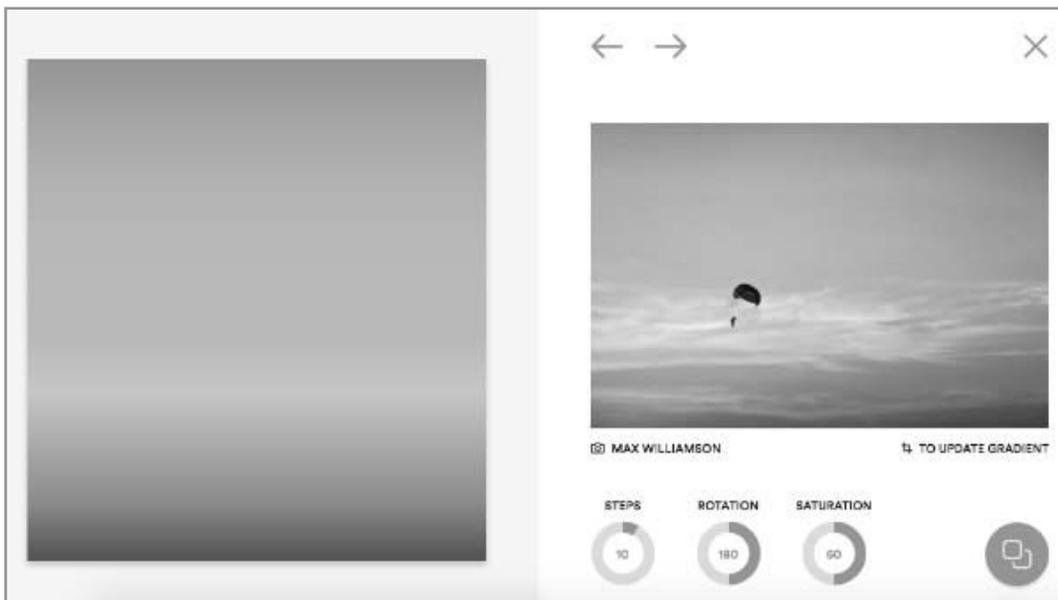
You can spend hours drawing from the wealth of inspiration beaming in nature.

Study the Right Tools

Get familiar with your design tool -- whether you're using traditional software like Illustrator or a modern platform like Figma. Ultimately, it's about your ability, not the tool itself.

Know color combinations. Find your source of inspiration. Learn the tools.

5.8 SUMMARY

Colors affect us in numerous ways, both mentally and physically. A strong red color has been shown to raise the blood pressure, while a blue color has a calming effect.

Being able to use colors consciously and harmoniously can help you create spectacular results.

The Color Wheel: The **color wheel** or **color circle** is the basic tool for combining colors. The first circular color diagram was designed by Sir Isaac Newton in 1666.

The color wheel is designed so that virtually any colors you pick from it will look good together. Over the years, many variations of the basic design have been made, but the most common version is a wheel of 12 colors based on the RYB (or artistic) color model.

Traditionally, there are a number of color combinations that are considered especially pleasing. These are called **color harmonies** or **color chords** and they consist of two or more colors with a fixed relation in the color wheel.

ColorImpact is designed to dynamically create a color wheel to match your base color.

Primary, Secondary and Tertiary Colors: In the RYB (or subtractive) color model, the **primary colors** are red, yellow and blue.

The three **secondary colors** (green, orange and purple) are created by mixing two primary colors.

Another six **tertiary colors** are created by mixing primary and secondary colors.

The above illustration shows the color circle with the primary, secondary and tertiary colors.

Warm and cool colors: The color circle can be divided into warm and cool colors.

Warm colors are vivid and energetic, and tend to advance in space.

Cool colors give an impression of calm, and create a soothing impression.

White, black and gray are considered to be neutral.

Color theory and the color wheel: Ever wondered how designers and artists find the perfect color combination?

They use color theory. Color theory is a practical combination of art and science that's used to determine what colors look good together. The color wheel was invented in 1666 by Isaac Newton, who mapped the color spectrum onto a circle. The color wheel is the basis of color theory, because it shows the relationship between colors.

Colors that look good together are called a color harmony. Artists and designers use these to create a particular look or feel. You can use a color wheel to find color harmonies by using the rules of color combinations. Color combinations determine the relative positions of different colors in order to find colors that create a pleasing effect.

There are two types of color wheel. The RYB or red, yellow, blue color wheel is typically used by artists, as it helps with combining paint colors. Then there is the RGB, or red, green and blue color wheel, which is designed for online use, as it refers to mixing light – like on a computer or TV screen.

Complementary: Two colors that are on opposite sides of the color wheel. This combination provides a high contrast and high impact color combination – together; these colors will appear brighter and more prominent.
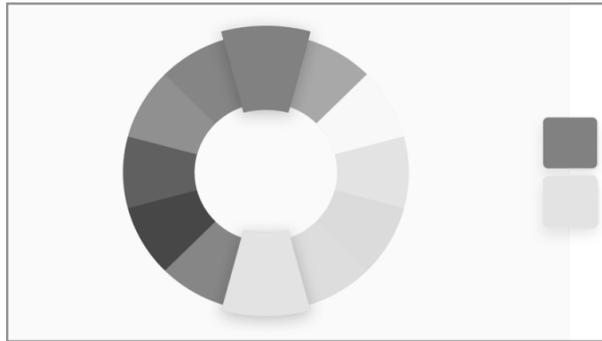
Monochromatic: Three shades, tones and tints of one base color, provides a subtle and conservative color combination. This is a versatile color combination that is easy to apply to design projects for a harmonious look.


Analogous: Three colors that are side by side on the color wheel. This color combination is versatile, but can be overwhelming. To balance an analogous color scheme, choose one dominant color, and use the others as accents.
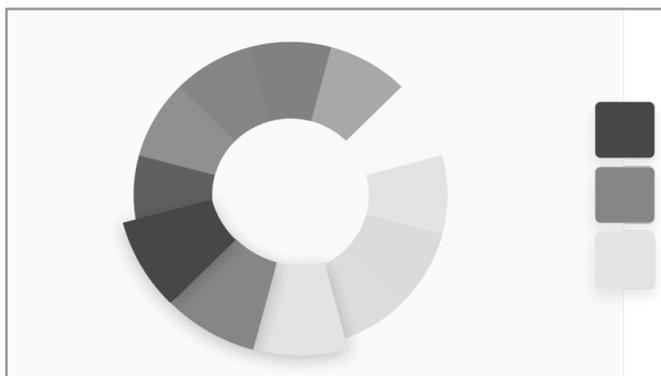
Triadic: Three colors that are evenly spaced on the color wheel. This provides a high contrast color scheme, but less so than the complementary color combination — making it more versatile. This combination creates bold, vibrant color palettes.
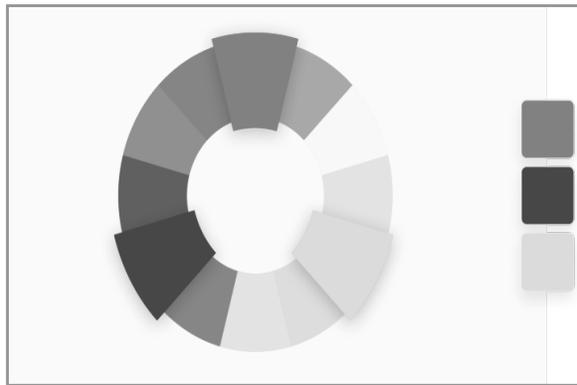
Tetradic: Four colors that are evenly spaced on the color wheel. Tetradic color schemes are bold and work best if you let one color be dominant, and use the others as accents. The more colors you have in your palette, the more difficult it is to balance.
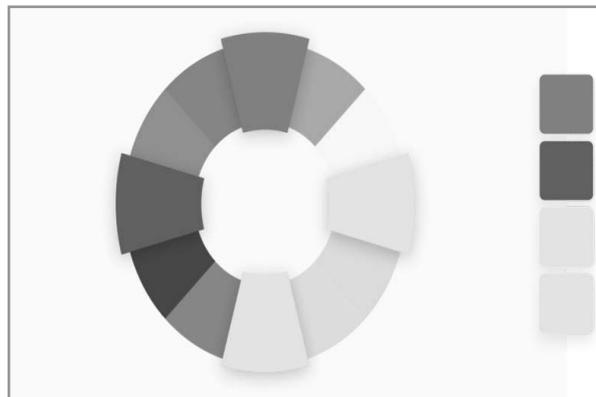
Primary, secondary and tertiary colors: There are 12 main colors on the color wheel. In the RGB color wheel, these hues are red, orange, yellow, chartreuse green, green, spring green, cyan, azure, blue, violet, magenta and rose.

The color wheel can be divided into primary, secondary and tertiary colors.

Primary colors in the RGB color wheel are the colors that, added together, create pure white light. These colors are red, green and blue.

In the RYB color wheel, primary colors are colors that can't be mixed from other colors. There are three primary colors: red, yellow, and blue.

Secondary colors are colors that result from mixing two primary colors. There are three secondary colors. In the RGB color wheel, these are cyan, magenta and yellow. When you mix light, red and green make yellow, green and blue make cyan, and blue and red make magenta.

In the RYB color wheel, the secondary colors are purple (red mixed with blue), orange (red mixed with yellow), and green (yellow mixed with blue).

Tertiary colors are colors made by combining a secondary color with a primary color. There are six tertiary colors. In the RGB color wheel these are orange, chartreuse green, spring green, azure, violet and rose.

In the RYB color wheel, the tertiary colors are red-orange, yellow-orange, yellow-green, blue-green, blue-violet, and red-violet.
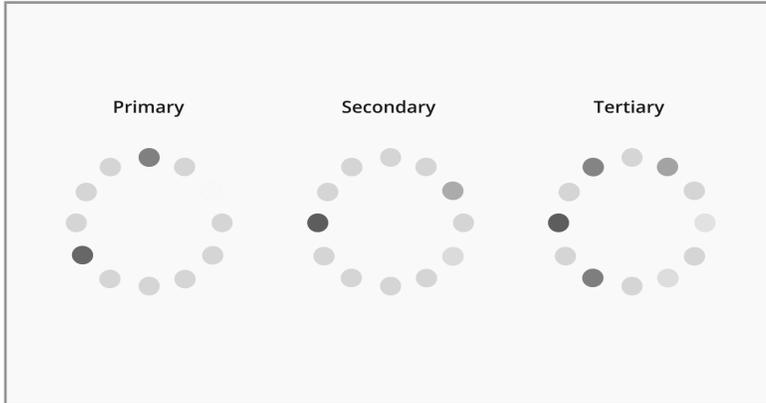
Warm and cool colors: The color wheel can also be divided into warm and cool colors. The warmth or coolness of a color is also known as its color temperature. The color combinations found on a color wheel often have a balance of warm and cool colors. According to color psychology, different color temperatures evoke different feelings. For example, warm colors are said to bring to mind coziness and energy, while cool colors are associated with serenity and isolation.

Warm colors are the colors from red through to yellow. These colors are said to bring to mind warmth, like the sun.

Cool colors are the colors from blue to green and purple. These colors are said to bring to mind coolness, like water.
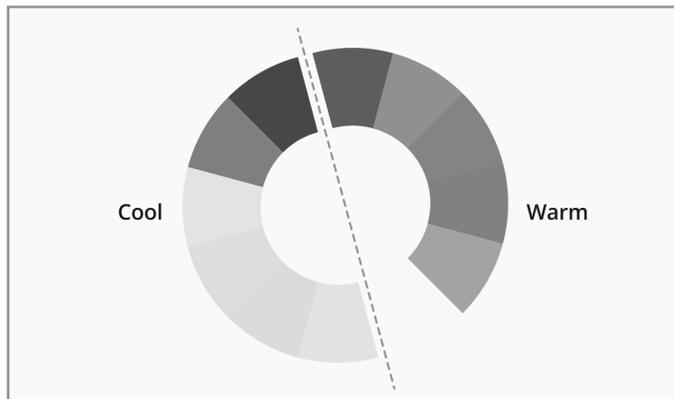

Shades, tints and tones: You can create shades, tints and tones of a color by adding black, grey and white to a base hue.

Shade: A shade is created by adding black to a base hue, darkening the color. This creates a deeper, richer color. Shades can be quite dramatic and can be overpowering.

Tint: A tint is created by adding white to a base hue, lightening the color. This can make a color less intense, and is useful when balancing more vivid color combinations.

Tones: A tone is created by combining black and white—or grey—with a base hue. Like tints, tones are subtler versions of the original color. Tones are less likely to look pastel, and can reveal complexities not apparent in the base color.
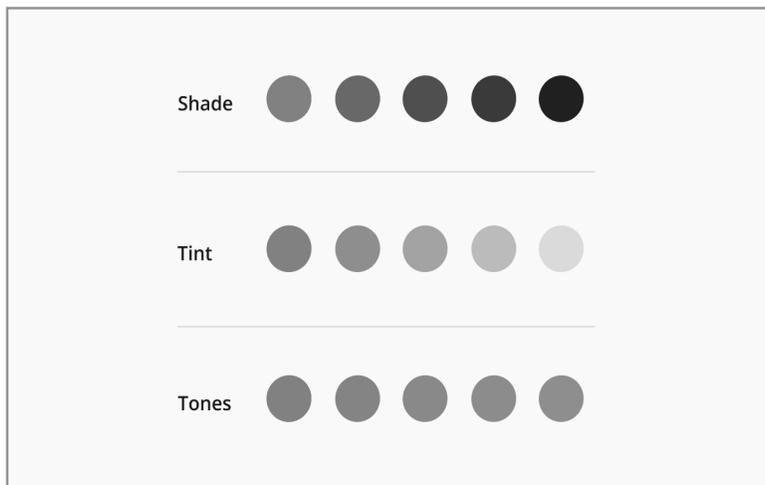
Hue, Saturation and Luminance: A hue is basically any color on the color wheel. When you are using a color wheel or a color picker, you can adjust the saturation and luminance of a hue.

Saturation is the intensity or purity of the color.

Luminance is the amount of brightness or light in a color.
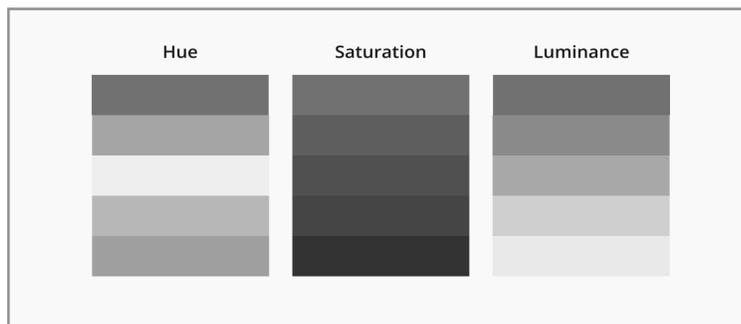
Color meanings and color schemes: This is just an introduction to the fascinating world of color. There's so much more to learn! For instance, did you know that the color royal blue was created in the 1800s for Queen Charlotte? If you want to discover more about colors, check out our Color Meanings page – it explores the history and meaning of hundreds of colors. Or if you're looking for more great color combinations, check out our Color Palette Generator or browse thousands of inspirational color schemes.

Fashion: Fashion is instant language. The style is a way to say who you are without having to speak. Elegance is not standing out, but being remembered for

your styles. Fashion is what you are offered four or five times a year by designers and stylish. To create designs and style every now and then designers have to work on the public's demand and new trends. While doing this they have to utilize elements and have to follow principles of design.

The Principles of Fashion Design: The Principles are concepts used to organize or arrange the structural elements of design. Principles are guidelines and fundamental ideas that every designer in the working field should follow. In fashion design, there are five important principles and then apply to both the garments basic structure and that application. They provide guidelines to combine properly the five elements of design to create always different elegance in designs. The five basic principles of fashion design are as follows-

1. Balance
2. Proportion
3. Emphasis
4. Rhythm
5. Harmony

1. **Balance:** Balance is the concept of visual equilibrium and relates to our physical sense of balance. It is a reconciliation of opposing forces in a composition that results in visual stability. Balance relates to the overall stability in the dress with the satisfactory arrangement of parts and details. Well, balanced dress produces visual harmony. The balanced design of the fashion is also divided into two ways. Such as-

    1. Symmetric Balance
    2. Asymmetric Balance

        1) Symmetrical Balance: It is also known as formal balance. Formal balance occurs when an object appears equal by repetition in an arrangement of elements of design. Symmetrical balance applications of balance, for example, a straight hemline are the norm, but asymmetrical balance can be effective too. In the past several years, asymmetrical necklines have achieved popularity.

2) Asymmetrical Balance: Asymmetrical balances called as informal balance. Informal balance occurs when an object appears unequal by repetition in an arrangement of elements of design. Asymmetrical balance is more complex and trickier to achieve than symmetrical balance. For example, a one-shoulder gown might look interesting with its asymmetrical neckline, but a jacket with one lapel larger than the other would just look bad.

2. Proportion: Proportion is the feeling of unity created when all parts (sizes, amounts, or number) relate well with each other. When drawing the human figure, the proportion can refer to the size of the head compared to the rest of the body. The proportion in art is the comparative harmonious relationship between two or more elements in a composition with respect to size, color, quantity. Proportion is usually not even noticed until something is out of proportion. When the relative size of two elements being compared seems wrong, or out of balance, it is said to be "out of proportion".

5.9 GLOSSARY

● **Look and Feel:** The consistent visual design and application of a corporate identity to an interface.

● **Masthead:** The (usually) graphical banner at the top of a Web page that identifies the organization or group that hosts the Web site. The masthead typically contains the name of the organization and site (if different) and an organizational logo.

● **Navigation design:** A design phase that interprets information architecture and task flows into wireframes or mockups to demonstrate and test the site structure and visual direction.

- **Page templates:** Predefined layouts or formats for sets of common web pages.
- **Paging:** A Web site design methodology that requires users to follow a series of "Next page" links to read an entire article. Moving from page-to-page is an alternative to scrolling through long pages.
- **Parallel Design :** A design methodology that involves several designers pursuing the same effort simultaneously, but independently, with the intention to combine the best aspects of each for the ultimate solution.
- **Prototype:** A preliminary model or archetype of a web page or website used to demonstrate or test the user experience and various task flows.
- **Scanability:** How easy it is to read and understand a body of text.
- **Scrolling :** A method of traversing a Web page wherein users either roll the scroll wheel on their mouse, or manually move the scroll bar located on the right side of their browser's screen.
- **Tab:** A graphical navigation element that is most often placed at the top of a Web page. Effective tabs should be designed so that they resemble real-world file folder tabs.

- **Waterfall model:** A linear design process whereby, steps are completed and the project passes onto the next phase with evaluation completed at the end.
- **Light and Color** - typically known as hue. Color has a primary emotional response on any audience.This word represents a specific color or light wavelength found in the color spectrum, ranging circularly from red to yellow, green, blue and back to red. Color is defined by the variables: hue, value, and chroma (a.k.a. purity or saturation.)

- **Volume and Mass** - is a three-dimensional form comprising length, width, and depth. Volumetric forms contain points (vertices), lines (edges), and planes (surfaces). A mass is the two-dimensional appearance of a three-dimensional form. Here, mass is interchangeable with volume. A mass is a solid body or a grouping of visual elements (line, color, texture, etc.) that compose a solid form.

- **Surface and Texture** - Actual or implied, texture refers to the surface quality of an object. Qualities like smooth and roughness are used to describe texture. Texture is usually associated with the sense of touch.
- **Type** - Also known as typography and it is considered an element in graphic design. Although it consists of elements of design, it is - in itself - often an element in the form of visual communication.

5.10 REVIEW QUESTIONS

1. Explain the *Analogous Colors*.
2. What is **Greyscale drawings are finished works of art**?
3. Explain the Ways to apply tints and shades.

4. Discuss the Blue colors.

5. Defining the Trendy Fashion Personality

NOTES