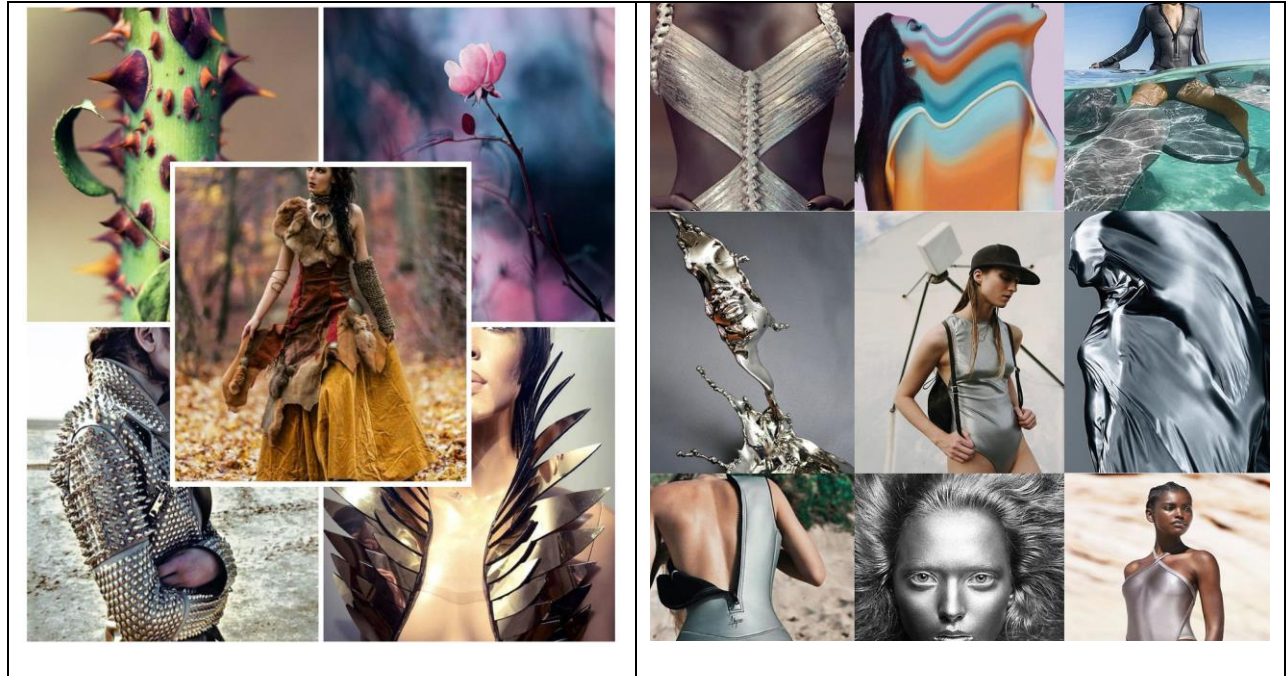


Fashion Design

Level-II

Based on March 2022, Curriculum Version 1



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Acronym

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- OHS Organizational health and safety.
- SOP Standard operating procedures

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Introduction to the Module

In Fashion Design field; the Identifying design process for fashion design helps to know preparation of workstation, understand design process, understand elements and principles of design and characteristics of color and preparation of color chart.

This module is designed to meet the industry requirement under the Fashion Design occupational standard, particularly for the unit of competency: **Identifying design process for fashion design.**

This module covers the units:

- Preparation of workstation
- Design process
- Elements and principles of design
- Characteristics of color and prepare color chart

Learning Objective of the Module

- Prepare workstation
- Identify design process
- Identify elements and principles of design
- Identify characteristics of color and prepare color chart

Module Instruction

For effective use this modules trainees are expected to follow the following module instruction:

1. Read the information written in each unit
2. Accomplish the Self-checks at the end of each unit
3. Perform Operation Sheets which were provided at the end of units
4. Do the “LAP test” given at the end of each unit and
5. Read the identified reference book for Examples and exercise

Unit one: Workstation Preparation

This unit is developed to provide you the necessary information regarding the following content coverage and topics:

- Selection and preparation of tools and equipment
- Preparation of workbench according to OHS Practice

This unit will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Selecting and preparing of tools and equipment
- Preparing workbench according to OHS practice

1.1 Selection and Preparation of Tools and Equipment

1.1.1 Introduction to fashion design process

For commercial designers, working on a fashion collection involves a series of idea sketches, different themes and inspirations and various experiments of silhouettes, patterns, textures and colors. Drawing fashion figures is the first step in bringing designs to life. Fashion figures serve as the template for a fashion designer's vision. From flat fashion sketches to three-dimensional illustrations, fashion figures help bring flair and emotion from the sketchbook to the runway.

Fashion designing begins with a fashion drawing. Fashion drawings are the blueprint for a design, and can vary in style and amount of detail. Fashion, by its very nature, is about current populism – and the fashion designer expresses the spirit of the times, or zeitgeist, in their work.

In an industry that is constantly changing, the designer is expected to reinvent the wheel seasonally. Due to the public's demand for the new, and with ever-increasing pressure placed on them, designers have to dig deeper and search further for ways of interpreting new inspiration into their collections.

The role of the fashion designer could be compared to that of a magpie, obsessively collecting objects and always being on the hunt for new and exciting things to inspire them. This compulsion to source and collate material for use in the creative design process is essential for feeding the imagination.

1.1.2. Tools and equipment

- **Drawing Paper**

- Drawing paper is specially made for drawing on.

✓ From making artistic drawings to heavy structural drawings, drawing paper is vital.

✓ Not for making hand drawings only but also to print a hard copy of digital drawings; drawing paper is needed.

✓ Different types of drawings require different types of drawing papers.



Figure 1.1 Drawing paper

- Different Sizes of Drawing Paper

Table 1.1 Drawing paper size

Paper size	Dimensions (cm)	Paper Area
A5	14.8 x 21 cm	0.03108 m ²
A4	21 x 29.7 cm	0.0612 m ²
A3	29.7 x 42 cm	0.125 m ²
A2	42 x 59.4 cm	0.25 m ²
A1	59.4 x 84.1 cm	0.50 m ²
A0	84.1 x 118.9 cm	1 m ²

- **Masking tape /scotch**

✓ This tape sticks the drawing paper on the drawing board.

- ✓ This tape is soft and doesn't harm the drawing paper and table if appropriately handled.



Figure 1.2 Masking tape /scotch

- **Drawing pencil**

Drawing pencil is an essential tool in drawing as it is used for making drawings on paper.

- ✓ For drafting, graphite pencil is commonly used.
- ✓ The grade of a pencil depends on the type of work.
- Hard Pencils are used where extreme accuracy is required especially working on graphs, diagrams and charts.
E.g., 2H pencil, 4H pencil, 6H pencil, etc.
- Medium Pencils are used for general purpose work in drawing.
E.g., HB Pencil
- Soft Pencils are too soft to be used in mechanical drafting. They are beneficial for the artwork of various kinds. E.g., 2B Pencil, 4B Pencil, 6B Pencil, etc.



Figure 1.3 Drawing pencil

- **Colored Pencils**

The quality of the brand of colored pencil that you use greatly affects the results that you will see in your drawing. You cannot expect to use sub-par materials and get professional results.



Figure 1.4 Color pencil

- **Charcoal or conte**

- ✓ There are more options to black and white drawing other than drawing with graphite. No artist's toolkit would be complete without charcoal or conté.
- ✓ Charcoal provides a broader range of value and mark-making than what's possible with graphite. The manner in which marks are made is different as well.
- ✓ Charcoal comes in both stick and pencil form. Sticks of charcoal are usually either “vine” or “compressed”. Vine charcoal is softer and produces lighter marks, while compressed charcoal – which is concentrated, produces darker marks.
- ✓ Charcoal pencils can be sharpened like graphite pencils, making them great for details.



Figure 1.5 Charcoal/conté

- **Chalk, Chalk Pastels, Oil Pastels**

Chalk, Chalk Pastels, Oil Pastels Oil pastels are a form of chalk that has been compressed with oil. All chalks and oil pastels come in a wide range of colors. A variety of soft, blended effects can be obtained by layering several colors and using brushes, cloth or paper to blend.



Figure 1.6 chalks, chalk pastels

- **Pencil sharpener**

- ✓ A pencil Sharpener is a mechanical gadget used for sharpening pencils.

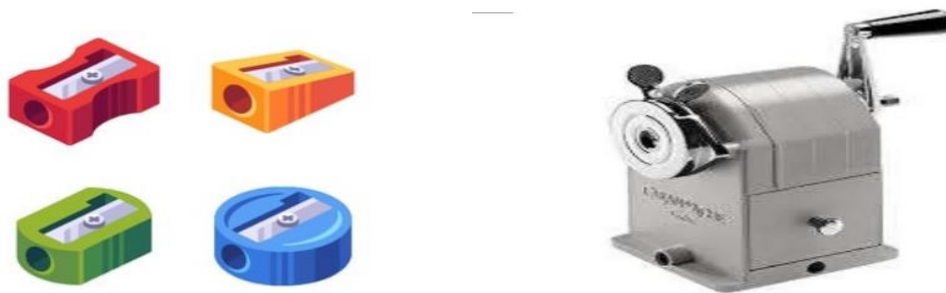


Figure 1.7 Pencil Sharpeners

- **Triangular scale**

- ✓ A tool generally used when reproducing a drawing in an enlarged or reduced form to some regular proportion.
- ✓ Its primary function is to reproduce the measurements of an object in full size, reduced size, and enlarged size.



Figure 1.8 Triangular Scales

- **T-square**

- ✓ T-square is a drawing instrument used when making horizontal lines.
- ✓ It is also used for guiding triangles when drawing vertical lines and perpendicular lines with the help of a set square.
- ✓ It is made of wood, plastic, or a combination.

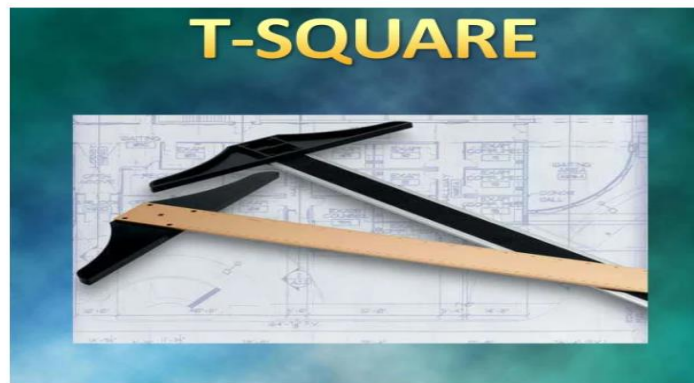


Figure 1.9 T-Square

- **Triangle scale**

- ✓ It is a three-sided ruler, which contains two equal sides intersecting at a 90-degree angle and the third side at 45, 30, including 60-degree angles.
- ✓ **Commonly used triangles are:**
 - 30 degrees X 60 degrees
 - 45 degrees X 45 degrees

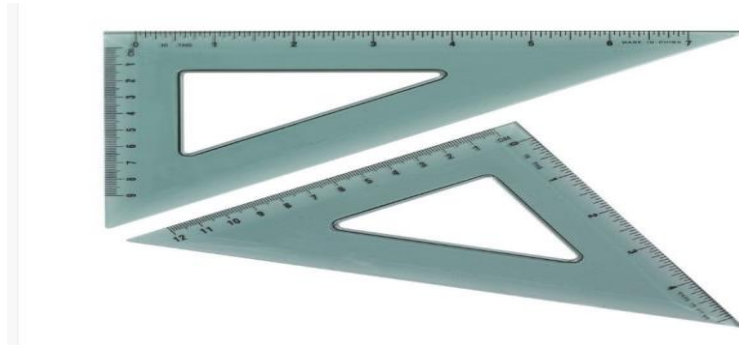


Figure 1.10 Triangle scale

- **Drawing table**

- ✓ The drawing table is made up of wood, plastic, or glass and has smooth surfaces where drawing paper is placed and fixed with the help of tape.



Figure 1.11 Drawing table

Every fashion professional should know, these tools are the most important equipment's for art or sketching a new design. They are.

- **Sketch Book**

- ✓ A sketchbook is a blank notebook or pad of paper that artists of all types can use to work on their art. These days, some artists may choose to use a digital sketchbook instead of a traditional paper version. Either way, the sketchbook serves as a collection of blank canvases.

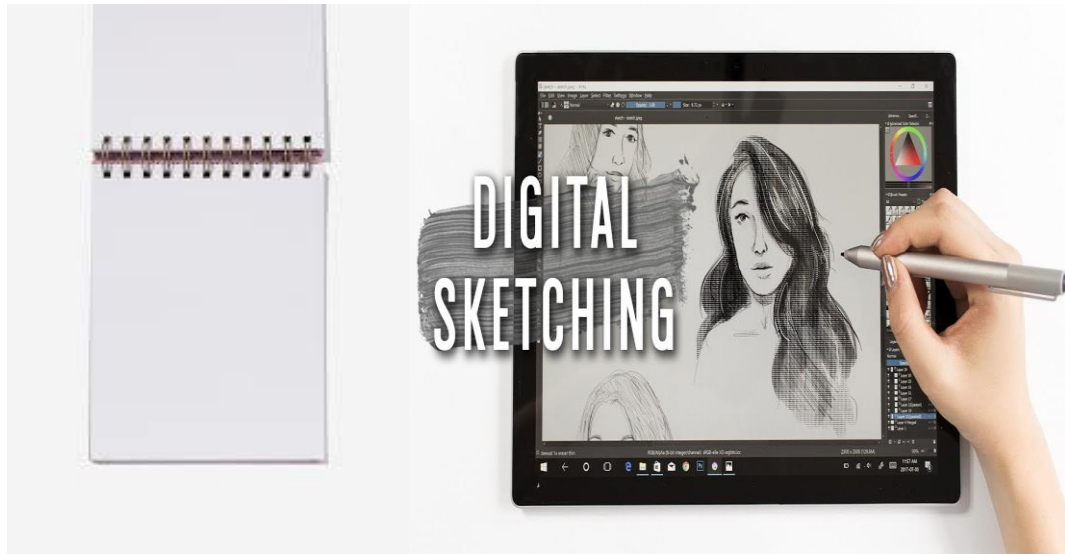


Figure 1.12: Sketch Book

- **Liquid marker (crayon)**

Fashion designers prefer ultra-bendable, low odor, alcohol based inks.



Figure 1.13: Liquid marker

- **Water color and oil color**

This media is used for fashion illustration.



Figure1.14: Water and oil color

- **Paintbrush(Artist brush)**

A paintbrush is a brush used to apply paint or ink. A paintbrush is usually made by clamping bristles to a handle with a ferrule. They are available in various sizes, shapes, and materials. Thicker ones are used for filling in, and thinner ones are used for details.



Figure 1.15: Paintbrush

1.1.3 Selecting and Preparing materials and equipment Equipment

The shades, textures and shadows you are able to create on the page are not entirely limited by your breadth of techniques. Without proper knowledge of your equipment, you could be limiting yourself significantly. Generally, softer graphite pencils will allow a darker, softer tone, while harder graphite will offer a harder line and a more pointed end. For most effective work, having a few pencil options in your sketching tool kit is essential.

Consider your personality when selecting your artistic tools. If you are a careful, meticulous perfectionist you may be most at ease with precise art materials such as a pencil or pen. If you have a more energetic, fast-and-furious approach to illustration, you may enjoy the freedom of oil pastels, charcoal or paints. Experimenting frequently with new materials will encourage you to be more innovative in your work. Brand-new pots of ink, sharp, colorful pencils and acrylic tubes just waiting to be squeezed may look inviting but, to a beginner, they also hold an element of anxiety.

It is necessary to use proper drafting/drawing materials and tools to make an excellent design. These materials are generally utilized by architects, drafters, engineers, painters, or other technical persons.

1.2 Preparation of workbench according to OHS Practice

1.2.1 OHS Practice in Design

- Standard operating procedures
- Personal protective equipment
- Safe materials handling
- Taking of rest breaks
- Ergonomic arrangement of workplaces
- Following marked walkways
- Safe storage of equipment
- Housekeeping

Self-check-1

Part -I: Matching

Instruction: select the correct answer for the give choice. You have given 1 Minute for each question. (Each question carries 2 Point)

A

B

____ 1. Hard pencil

A. For extreme accuracy drawing

____ 2. Soft pencil

B. For general purpose

____ 4. Water color and Oil color

C. For mechanical drawing

____ 4. Vine charcoal

E. Illustration Media

____ 5. Compressed charcoal

F. Light marks

G. Dark marks

Part - II: short Answer

Instruction: write short answer for the given question. You are provided 3 minute for each question and each point has 5 points.

1. List out types papers for drawing?
2. List out tools and materials for design?
3. List out measuring tools for drawing?

Note: Satisfactory rating – above 60%

Unsatisfactory - below 15 point

You can ask you teacher for the copy of the correct answers

Unit Two: Design Process

This unit to provide you the necessary information regarding the following content coverage and topics:

- Design process
- Factors to be considered during design development process
- Commercial consideration in production design.

This guide will also assist you to attain the learning outcomes stated in the cover page.

Specifically, upon completion of this learning guide, you will be able to:

- Identifying steps in design process.
- Considering factors in design development process
- Identifying commercial consideration in production design.

2.1 Design Process

2.1.1 Steps in design process

For commercial designers, working on a fashion collection involves a series of idea sketches, different themes and inspirations and various experiments of silhouettes, patterns, textures and colors. Designers surround themselves with photographs that represent different ideas, fabric swatches and anything else that will stimulate creativity. They leave their studios and pay visit to theatres, retail shops and museums to seek for inspiration. They usually carry sketchbooks to jot down ideas whenever and wherever they find them.

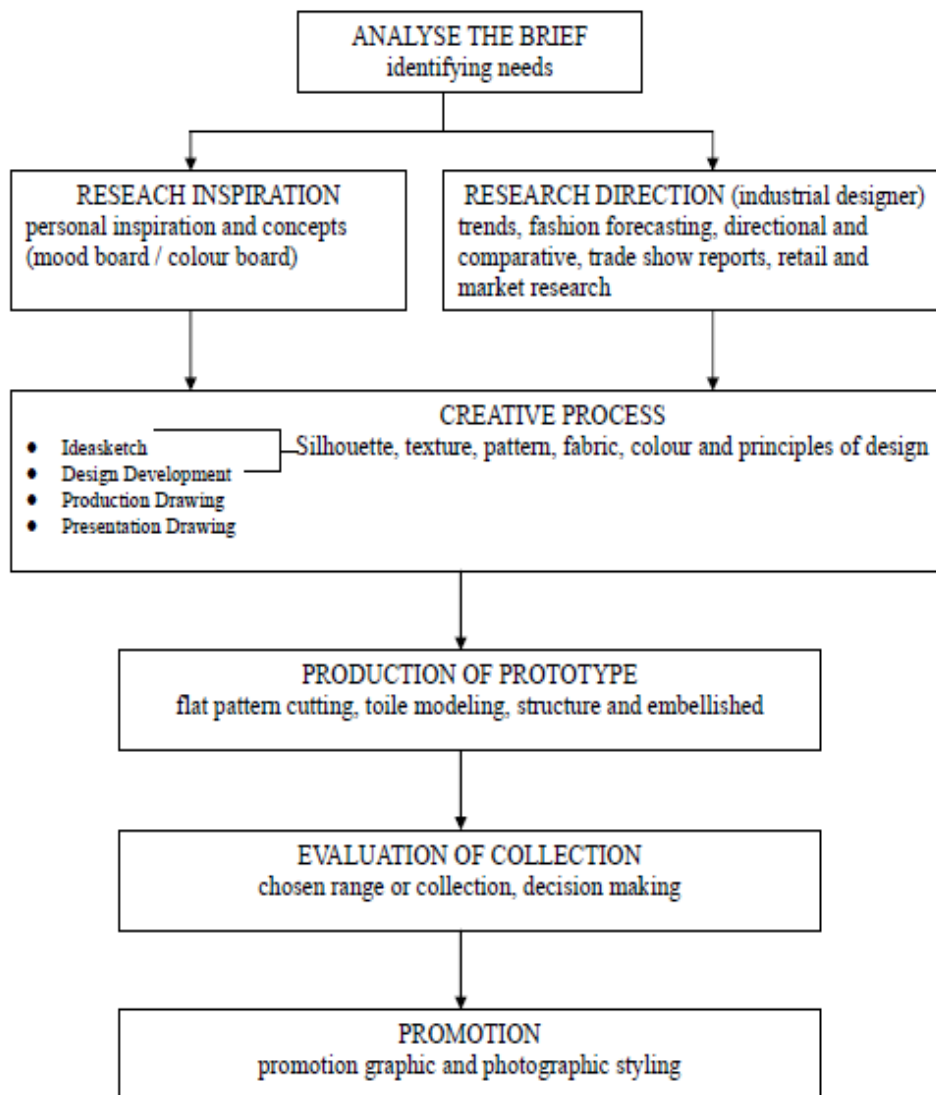


Figure 2.1: Fashion design process

2.1.2 First stage- Analyze the Design Brief

When one starts a collection, one should have a very clear understanding of who one is designing for. Before work is begun, it is very important to understand exactly what is required for the client or a design project. Reading a brief and carefully dissecting it can make the difference between a success and a failure.

(A) Market and Specialties

One of the major considerations when designing is market suitability. There are different markets and specialties in the fashion industry of which the designers must be aware:

I) Women's Wear

Women's' fashions change quicker than men's and children's. Styles and colors alter considerably from season to season, especially in the mass market. The women's wear market is saturated with designers and therefore highly competitive. The reason for this phenomenon is probably because the arena of women's wear is considered to allow not only more creativity but to be crucially more glamorous than other specialties of fashion.

II) Menswear

Men's fashion tends to change more gradually than women's. On the whole, men's style and fashion colors are more conservative. Extreme styles can therefore be risky, unless you know your market very well. Men's wear sales are also less Significant. Most men usually will choose to buy clothes that are longer-lasting. In terms of what men and women wear on a day-to-day basis, men normally wear a less diverse range of garments when compared to women.

III) Children's Wear

Children's wear design can be just as sophisticated and colorful as women's and men's wear. In addition, designers must consider safety and health considerations and the appropriateness of the garments in terms of hardwearing, washability and having its price not too expensive as children's wear is quickly outgrown. Children's wear includes clothes for newborn, toddlers, kids and teenage boys and girls.

IV) Casual Wear

Casual wear is defined as everyday clothes that are not typically worn in a formal situation.

V) Sportswear

Sportswear design is different from other areas of design that the design of sportswear is almost entirely led by function, comfortability and well ventilation. It must perform in relation to a

specific sport or activity. This has become an interesting area of design as fabric technology constantly evolves and sportswear is becoming increasingly fashionable in the contemporary fashion market. Sportswear does not simply aim for sports enthusiasts, its trends has the ability to affect mainstream fashion trends.

VI) Eveningwear

Eveningwear is more formal than daywear. Even today, men's eveningwear remains quite traditional while women's eveningwear is limited only by the imagination. Eveningwear garments tend to be made of finer, more expensive and exclusive fabrics such as chiffon, silk, satin and taffeta. Eveningwear tends to transcend seasons and it is less easy to identify an evening gown from one year to the next.

VII) Tailoring and Formal Dressing

Tailored clothes have more structure and fit than casual garments and specific skills are required when constructing the garments. Tailored garments are perceived as being formal and in many places of work, are considered to be the appropriate dress code.

VIII) Knitwear

Knitwear designers are really the only fashion designers that develop the fabric construction of the garment as well as its design as they are responsible for making the decisions about the yarn count, stitch, colors and right weight for season.

Design briefs including full information about the garments to be designed, e.g. Samples of fabric to be used in the production process. If no fabric samples are attached, designers are required to source suitable materials themselves. The

Information within a typical brief covers the following:

- The type(s) of garments to be designed. For example, women's wear, menswear, eveningwear, lingerie, casual wear or knitwear.
- The occasions or activities they are intended for. For example, surfing, dancing, etc.
- The season. (Winter, Summer, Fall, spring, Autumn, Pre-fall)
- The fashion image required. For example, different age range, formal or informal style, etc.
- The price range.
- Title/Theme.
- Deadline

B) Designing with Costs in Mind

The analysis of a brief should start with deconstruction. Breaking down a brief allows you to try to determine and identify what are the needs of the client. Briefs can often be ambiguous when the client attempts to describe what they may feel the issues are.

2.1.3 Second Stage - Research Inspiration

People often wonder how fashion designers manage to come up with so many innovative ideas. The truth is that these ideas are rarely completely new: designers create by reinventing the world around them. As a general rule, when working on a new collection, designers need sources of inspiration to develop ideas. Inspiration can come from anywhere and at any time, whether the source is a falling leaf from a tree or a splendid sunset. Good researches automatically influence the development of garments ideas. These ideas can be completely original or they can be influenced by current trends. Sources of inspiration may be related to designers' personal experience.

Sources of Inspiration

- Libraries
- Museums
- Architecture
- Material
- Familiar Aspects
- Personal Style
- Traditions
- Travels
- Magazines
- Nature

Inspiration from nature

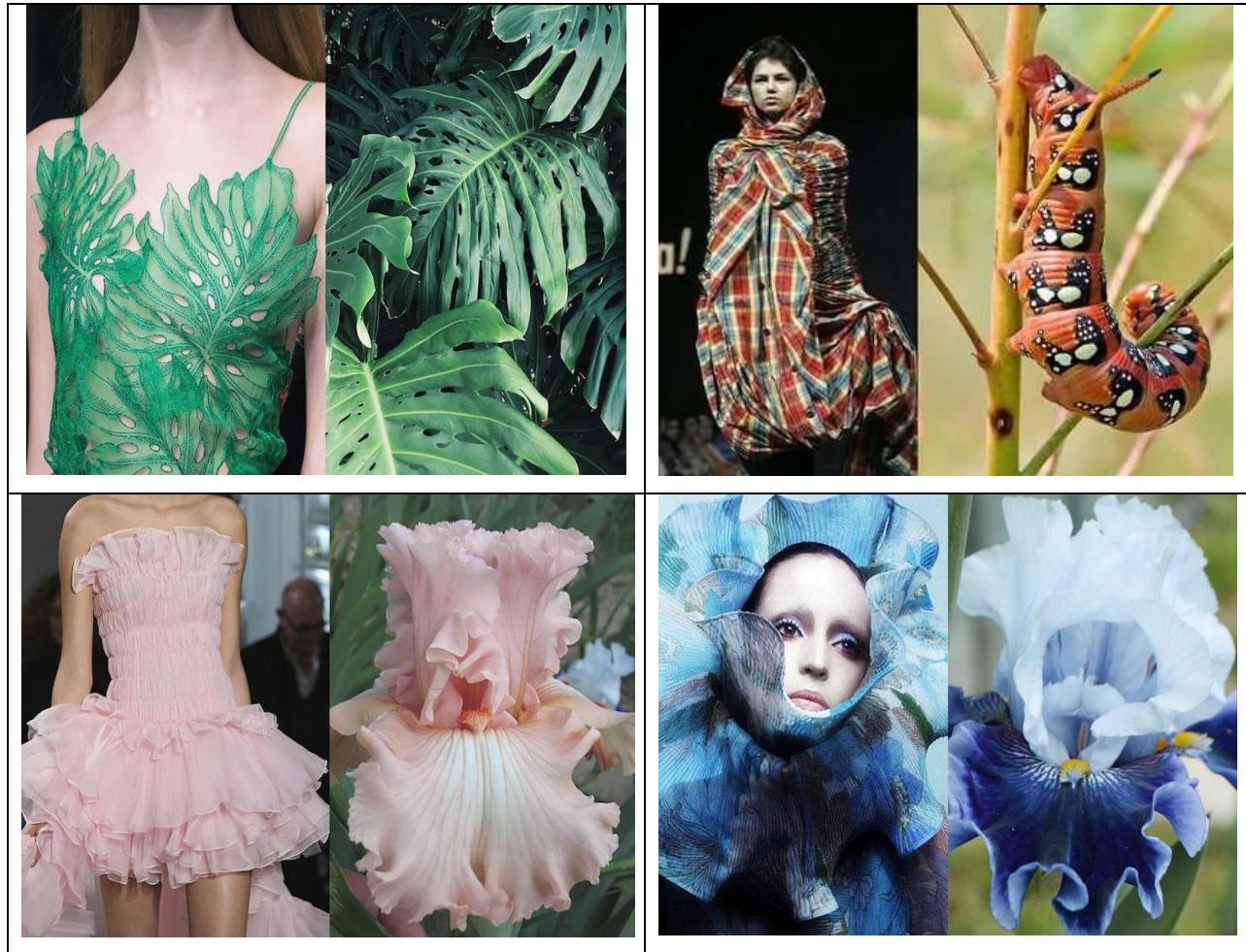


Figure 2.1: Inspiration from nature

Inspiration from Architecture



Figure 2.2: Inspiration from architecture

Inspiration from art work

Figure 2.3 shows that the polo shirt takes inspiration from the artist art work and applied to the fabric using printing techniques.



Figure 2.3: Inspiration from Maitre Loret Afework Tekle art work

Mood Board

- Mood board is a visual collage that sets the direction of colour, shape, texture and mood of the collection
- “A mood board is like a cover a book. it visually convey the content of the book” Maurizio Grioli
- Mood board is a visual board that shows previous works of others that is related to the selected inspiration.

Figure 2.4: Mood Board

Color Board

Color is the first element in fashion to have visual impact, often before the silhouette, look or details can be assessed. Choose colors to assemble a palette is one of the first decisions when making a collection. The choice of colors will determine the mood of the collection, or its harmony with the season, and help differentiate it from its predecessor. People react intuitively, emotionally and physically to colors. Colors also reflect their chosen season such as soft pastels will suggest a summer



Figure 2.5: Color Board

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2.1.4 Third Stage - Research Direction

(A) Trends and Fashion Forecasting

Trends are affected by the continuing changes of global events, technology, economic, political, social, demographics factors as well as evolutions in lifestyle, media and retailing. They can provide essential design directions for industrial designers.

Many industries use trend forecasting to predict relevant changes and plan product development. For example the influence of recycle, organic and ecology movement are the popular approaches to the existing fast-moving world. The fashion design team within a company usually uses fashion forecasts, fabric and color predictions for the up-coming seasons. There are two main seasons in a fashion selling year – Spring/Summer and Autumn/Winter.

(B) Coverage of tradeshow and fabric fairs

Predictions can be found in major fabric fairs and trade shows such as the Premiere Vision Fabric Show in Paris, Shanghai and New York, the Interstoff Fabric Show in Frankfurt and Hong Kong, the Pitti Filati Yarn Show in Florence, the Moda In & Tessuto Accessory Show in Milan, etc.

(C) Retail reports and directional garments

Retail reports are conducted all over the world with a view to find “directional” garments in the retail sector. The information includes in these retail reports are color, fabrication, resource, designer, as well as detailed sketches of the updated garment

(D) Original samples

Apart from fashion forecasting, fashion fairs, retail reports, original samples are bought from all over the world. The garments are analyzed and illustrated as production drawings in publications.

(E) Ready-to-wear fashion show

Analyzing Europe, New York and Tokyo fashion show collections, looking at the seasonal developments of designers who are currently the most influential.

(F) Market research

All industrial designers are highly sensitive to competition in the market. A majority of designers do research on garments in retail shops in order to see and feel at first hand other designers’ work. This can involve travel to fashion capitals of the world.

(G) Fashion Internet and websites

The Internet is a tool for researching the latest fashions and trends. Today, countless websites offer information on fashion. From fashion runway to street, from music to art movement.

Examples of some popular fashion websites

www.fashionangel.com/angel: Fashion designers and magazines on the Net-updated daily, linked with FUK.

www.fashionsoops.com: A practical tool that delivers professional and information from international runways, trade shows and retail scenes with in-depth analysis on up-coming trends in design themes, colors, key silhouettes, graphic and more.

www.global-color.com: A forecasting company that provides information and inspiration on colors and trends.

www.thetrendreport.com: A site on fashion runways, editorial and consumer buying.

www.vogue.com: Vogue Magazine’s website covers designer collections with celebrity and behind-the-scenes features.

2.1.5 Creative Process

The design process, which results in translate two-dimensional sketches into three-dimensional outcome, needs to consider all design elements such as silhouettes, textures, patterns, colours and principles of design. These basic elements provide an initial framework which designers can expand into more complex design considerations.

(A) Idea Sketch

Designers draw sketches during trips, from films or exhibitions, while shopping or researching, from books, galleries or museums, etc. Sketchbooks can form a treasury of ideas to plunder – a “visual diary” of places, events, ideas, patterns, textures, shapes and colors. These sketches are the designers’ way of putting ideas on paper in order for them not to forget and fix the ideas for future reference if needed.

Idea sketches are rough sketches simply for designers to write down the ideas that they think might be useful for further design development.



Figure 2.6: Idea sketch (conceptual Sketch)

(B) Design Development

Design development is the selection of rough sketches of the designers to fully expand initial concepts. The process of drawing designers' ideas not only does it record the thought process but, by constant experimentation, generates new ideas.

(C) Production Sketch (flat design)

When designers have confirmed the final design development, the next stage is to do a complete analytical working drawing. This kind of drawing is called production drawings. Flat design has technical front and back that shows the detail of the garment used for communicate to the production personnel.



Figure 2.7: Flat Design (production Sketch)

(D) Presentation Drawing

After the production drawings are completed, presentation drawings should then be done. Presentation illustrations aim to attract buyers or clients to preview the final collection being putting on figures. The attractiveness of the illustrations much depends on the drawing technique of individual designer or illustrator. The use of color is vital when presenting drawings; the colors presented on drawings must be as close as possible to the fabrics and textures used in the actual production process to give a life-like representation of the final garments.

Presentation drawings should contain complete figures wearing the garments in suitable pose and feature showing the most attractive design interest.



Figure 2.8: Fashion Illustration

2.1.5 Production of Prototype

In the design process, the translation of a two-dimensional drawn idea into a three-dimensional prototype is the essential procedure in the realization of a garment design. After the sample room receives the production drawing(s) from the designer(s), the next step in the product development procedure is to make the first pattern, which will be used to cut and sew the prototype. The pattern is made in a sample size, the one used for testing and selling purposes. Pattern makers can use either flat-pattern cutting or toile modeling to make the pattern.



Figure 2.9: Prototype

2.1.6 Evaluation of Design

The design of the product is evaluated based on the required requirement, quality and fitting perspectives.

2.2 Factors to be considered during design development process

Material to be used: - the characteristics of the material to be used is affect the design. Considering the material used also useful in the design process. Characteristics the material should identified such as fabric weight, thickness, method of fabric construction, surface texture etc.

Identify the target market - The market that a firm is catering to is segregated on the basis of gender, age, social and economic segment. Here the market is a group of people or the consumers. Each market segment is going to have different requirements and expectations from a design and all of these have to be satisfied by the designer, in order to make it a success.

Occasion: Selection of clothes also changes according to occasion. For daily wear or informal wear, durable dresses with simple designs can be chosen but for occasional or formal wear novel fabrics with new styles are chosen.

Season: Some fabrics and colors are suitable for winter while others are not, for example synthetics; silk and wool are suitable for winter as they are bad conductor of heat. Cotton and blends of cotton with synthetics are good for summer as they are good conductor of heat and absorptive. There are cool and warm colors. The cool colors are associated with coolness, for

example, blue, green, white etc. Warm colors are bad conductors of heat and associated with warmth for example, red, golden yellow and orange. So warm colors are suitable for winter, whereas cool colors are chosen for summer.

2.3 Commercial consideration in production design.

Design can bring a range of commercial benefits if used systematically across identifying ways of improving the design process.

Design can bring a range of commercial benefits if used systematically across your design. These benefits include:

- Increased sales of your products or services
- Improved market position relative to your competitors
- Greater customer loyalty and fewer customer complaints
- A stronger identity for your design
- The ability to create new products and services and open up new markets
- Reduced time to market for new products and services

Designing for your customer

The effective use of design gives customers a reason for buying from you and not from your competitors. It's a valuable source of differentiation - a well-designed product or service will stand out from the competition.

Design also adds value to products and services. Customers are often willing to pay more for well-designed products that can offer those benefits such as greater usability, increased functionality and improved aesthetics.

Such as making sure design considerations are featured in all your design conception.

Self-check-2

Part I: choose the best answer (2 point each)

- 1) Information within a typical brief covers
A) Pattern B) accessory C) season D) Trim
- 2) First step of the design process
A) Analyze the Design Brief B) Inspiration C) design Development D) Prototype
- 3) a visual collage that sets the direction of colour, shape, texture and mood of the collection
A) Inspiration Board B) Color Board C) Trend Board D) Mood Board

Part II: Short answer (2 point each)

1. Least three source of inspiration?
2. What is color board?
3. Least three popular fashion websites?

Note: Satisfactory rating 60%

Unsatisfactory - below 8 point

You can ask your teacher for the copy of the correct answers.

Operation Sheet-2.1

Operation title: Prepare manual visual boards using the appropriate materials.

Purpose: To understand the design process and visual board preparation

Required Material

- Fashion Magazines
- Paper glue
- Wood or carton board
- Permanent marker

Task 1: Select inspiration source

Task-2: Identify the team

Task-3: Prepare mood board based on the selected Inspiration

Task-4: Prepare color board

LAP Test

Name: _____

Date: _____

Time started: _____

Time finished: _____

Instructions: Give necessary tools and materials that are required to perform the following tasks within required hours.

Task 1: Prepare Mood board.

Task 2: Prepare color board.

Unit Three: Elements and principles of design

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Elements of design
- Principles of design

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Identifying elements of design.
- Identifying principles of design

3.1 Elements of design

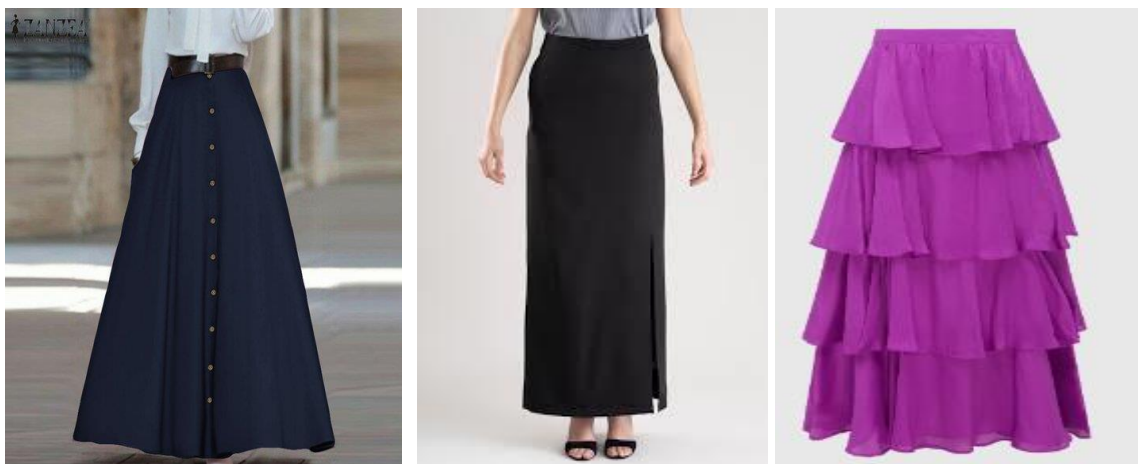
Elements of design are the basic parts or qualities that are used in the design process. The elements of design are the building blocks of what a visual artist or graphic designer uses to make a successful composition. The four basic ingredients or elements of design used in fashion are

- **Shape or silhouette**
- **Line**
- **Color**
- **Texture**

3.1.1 Shape (Silhouette)

In its most basic form, a shape is a two-dimensional area that is surrounded by an outline. Silhouette refers to the outline of a garment. In the fashion industry, the term “silhouette” is normally used to describe the shape of garment. “Silhouette” is French for “the general outline or shape of a costume”. Since garments are three-dimensional, the silhouette changes as the garment is viewed in 360 degrees from different angles. It determines people’s first impression of an outfit, meaning that they look at a garment’s overall shape before they examine its fabric, texture or detail. Silhouette is a fundamental consideration in the design process. Fashion trends influence what kinds of silhouettes are in style during a fashion season.

Example: shape A-line skirt, Pencil skirt, Tiered skirt



A-line skirt

Pencil skirt

Tiered skirt

Figure 3.1: Skirt shape

3.1.2 Line

A line is an elongated mark, the connection between two points or the effect made by the edge of an object where there is no actual line on the object itself. A line leads the eyes to view in the direction the line is going and divides the area through which it passes, thus providing a breaking point in space.

The term line refers to the direction of visual interest in a garment created by construction details such as seams, fastenings, patterns, tucks, contrast stitching and trims. Line can be hard or soft, either flexible or rigid. It can move in various directions, leading the viewer to look across, look up, and look down or to sweep around the body. Moreover, a line can also create the illusion effect of narrowness or of fullness in the wearer. Balancing the effects of lines is one of the important tasks that a designer needs to tackle in design.

Line can be can be vertical, horizontal, diagonal or oblique, curvilinear

A) Horizontal line

Horizontal lines go across on a garment. This lines across the body can make the wearer look shorter and plumper. Horizontal lines tend to create a feeling of stability and restfulness. Horizontal lines lead the eyes to view from to the width of the body and create the illusion of a wider shorter body. Horizontal lines are the most suitable to use in order to achieve a wider or shorter body image. They can add width to shoulder, chest or hips. Meanwhile, wide collars, full sleeves and large pockets help widen the design effect.



Figure 3.2: Horizontal strips

A) Vertical Lines

Vertical lines create a sense of lengthiness and elegance as they lead the eyes to view the body in an up-and-down motion. They create an illusion of a longer and slimmer body and a feeling of strength, dignity and formality. The use of vertical lines to create a slimming and lengthening visual effect.



Figure 3.3: Vertical strip

A) Diagonal or Oblique Lines

Diagonal or oblique lines are those structural lines that move diagonally within a garment. They move from an angle on a garment and travel diagonally across and around the body, adding some sense of movement and visual impact on the design; clothing lines can also be converge and diverge to achieve great directional effects.

The effectiveness of the use of diagonal lines depends upon whether the line slant in a more vertical or horizontal direction. Generally, diagonal lines combine the vertical and horizontal, seemingly undecided between upright and sideways; thus, they seem restless, busy and unstable but imply powerful movement, vitality and dramatic effect.



Figure 3.4: Diagonal lines

3.1.3 Color

Color is the property of an object that results from the reflection, transmission or emission of light waves which causes a visual perception in the eyes depending upon the specific wavelength involved. The field of study “color psychology” analyzes our perception and behavior before different colors. Color provides individuals the opportunity to express feelings, create illusions in appearance, and can bring overall excitement to a personal wardrobe.

For example

Blue is often seen as a calming color associated with comfort and security,

Red communicates excitement, passion, or anger,

Yellow is cheerful, representing prosperity and a bright or sunny disposition, and

Purple can be used to showcase loyalty, power, or even mysteriousness

3.1.4. Texture

Texture is the characteristic structure as well as the surface quality of a material. Texture describes the perceived quality of a surface whether real or simulated. The texture of a fabric appeals to the eyes as well as the sense of touch. Texture refers to the surface appearance and feel of a fabric. The texture of a fabric may be described as soft, rough, shiny, dull, bulky, filmy,

transparent, thick and smooth. Design and texture are closely related in that, at times the design of the weave determines the texture.

Texture affects the color of a fabric by causing the surface to either reflect or absorb light. Rough textures absorb light, causing the colors to appear flat. Smooth textures reflect light, causing colors to appear brighter. Texture can affect the appearance of a silhouette, giving it a bulky or a slender look, depending on the roughness or smoothness of the materials.

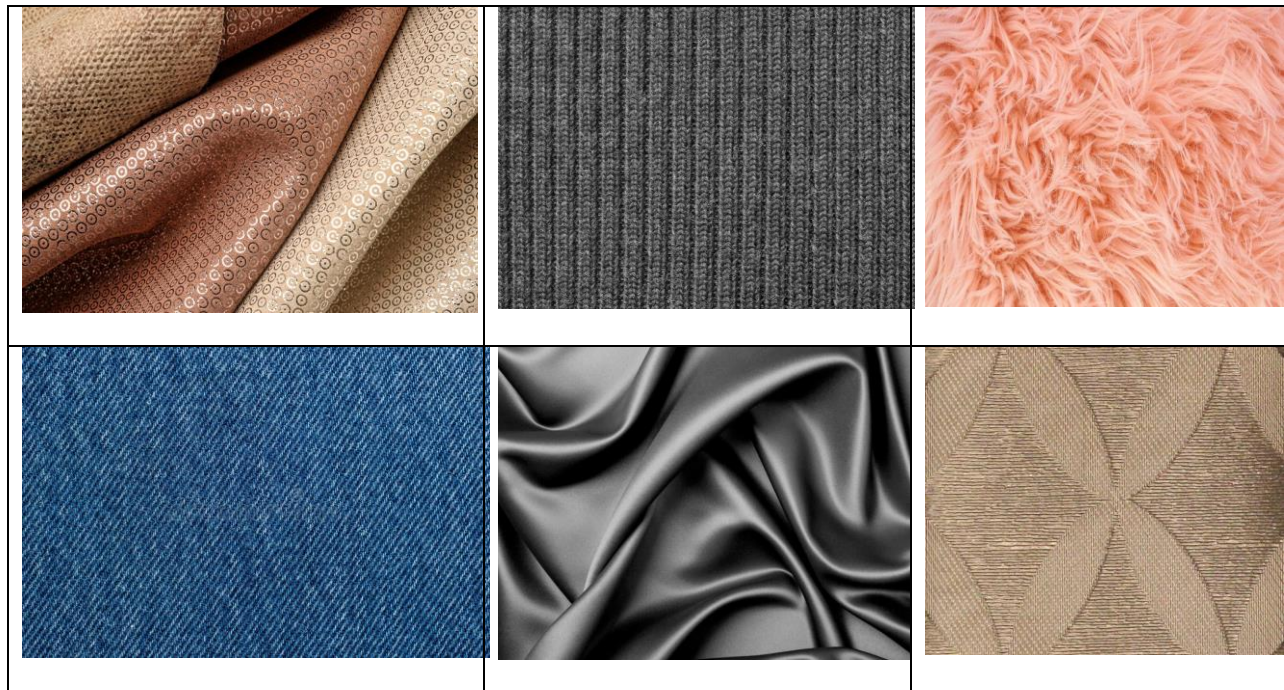


Figure 3.5: Fabric texture

3.2 Principles of Design

The principles of design refer to the manner in which the elements of art are arranged in a work of art. Since the principles of art mostly deal the organization of a work of art, they mainly influence the composition. By mastering the principles of art, we can improve our drawing and painting compositions. The principles of design describe the ways that artists use the elements of art in a work of art. Principles of design are not formulas for creating beauty, but they do help in determining why an object is artistically good or poor.

Five major principles of design are

- **Proportion**
- **Balance**
- **Rhythm**
- **Harmony**
- **Emphasis**

3.2.1 Proportion

Proportion is the comparative relationships between distances, sizes, amounts, degrees and parts. Proportion is how we visually relate all parts of a whole picture. This happens when we measure, not necessarily with the metric tape, but with the eye. We can create illusions about the shape of the body by changing the proportions between the parts of a model or by changing the place of seams and details.. Good proportion adds harmony, symmetry, or balance among the parts of a design.

- A garment is generally more interesting and pleasing if divided into uneven or unequal parts, and if the parts are in scale with the body.



Figure 3.6: Proportion

- Principle of proportion also applied in using color to the design



Figure 3.7: Proportion in color

3.2.2 Balance

Parts of a composition can be described as having weight or dominance. The arrangement of these elements to create a sense of visual stability or tension is called balance. Balance refers to the weight of objects, and their placement in relation to each other. It's a sense of stability you might feel from elements in alignment. This can take three forms: symmetrical, asymmetrical and radial.

The three types of balance are

- Formal balance (Symmetrical Balance)
- Informal Balance (asymmetrical balance)
- Radial Balance

A) Formal Balance

Formal balance is symmetrical. Its design details are divided equally to create a centred balance. In other words, both sides are the same, like the way how we have two arms and two legs. A symmetrical garment design must have exactly the same details in just the same place on both sides. Formal balance is the easiest and the most logical way to achieve stability. Therefore it is also most commonly used in fashion design.

A symmetrically balanced design usually has a more formal or tailored appearance. This kind of design is the simplest and least expensive to produce.



Figure 3.8: Symetrical Balance

B) Informal balance

Informal balance is asymmetrical. Its design details are divided unequally from the center. It can achieve a more dramatic and interesting effect through an imbalance of visual impact. Its composition is different arrangements on each side. It is often achieved with diagonal line and off-centered closings. An unusual, slender, eye-catching detail or intense impact on one side can balance a larger, less imposing area on the other side.

Informal balance is usually reserved for fashionable garment for its dramatic and technical effects. Informal balance should not look heavier on one side than the other. If done properly, the design should appear to be balanced, even though its two sides are different.



Figure 3.8: Asymmetrical Balance

C) Radial Balance

Radial Balance in an artwork occurs when the elements or objects are positioned around central point. Designs that have a radial balance have a center point. A tire, pizza, and a daisy flower are all examples of design with radial balance. Radiation is the use of design lines that fan out from a pivotal point. Based upon the sunburst effect, the eyes move from the central point of the sunburst to the outer area of the design.

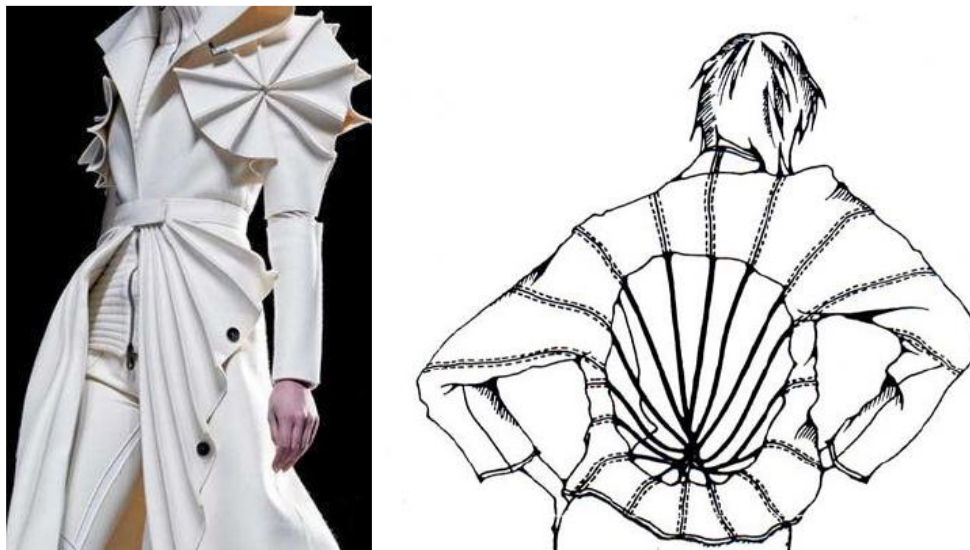


Figure 3.9: Radial Balance

3.2.3 Rhythm

In fashion design, rhythm is the flow of lines, shapes, textures and colors of garment. The flow should gently carry the eyes from one area of the garment to another. When all the lines of an outfit work well together, a sense of rhythm is obvious. The use of rhythm is important in achieving pleasing effects. Rhythm in design results repeating lines and masses. These repetitions can be either of uniform size or of decreasing or increasing size. Rhythm can create a powerful effect, whether it is achieved by the repetition of regular features, by motifs on printed fabrics or by a gradual change of size or color.

Important methods of achieving rhythmic movement are as follows:

- Through Repetition of shapes
- Through progression of sizes.
- Through continuous line movement
- Through radiation
- Through gradation in arrangement of shape, size and colors.



Figure 3.10: Rhythm

3.2.4 Harmony

Harmony is the art principle which produces an impression of unity through the selection and arrangement of consistent objects and ideas. Harmony is the pleasing arrangement of all parts of a garment. It is not the exact opposite of contrast but it does imply similarity than differences in areas such as the use of colors or textures that blends well with one another. Contrast of colors that Implies more similarity than difference, normally these colors or fabrics match very well and do not fight each other.



Figure 3.11: Harmony

3.2.5 Emphasis

Emphasis is a center of interest that draws attention to the focal point of a garment. This centre of interest must create more visual attraction than any other design elements and should be related to the overall structure of the garment while the remaining elements must support this center of interest by echoing its design impact.

‘Emphasis’ could be accomplished by the use of lines, details, color accents, shapes, trims or accessories. A combination of these elements gives the focal point added strength, so does placing the decorative emphasis at a structural point. Every design or arrangement needs some note of interest that catches the eye or arrests the attention.

Examples of items used to create emphasis are: a bow, appliqué, a monogram, accessories, belts, scarves, neckties, jewelry, decorative trimmings, tucks, gathers, ruffles, and buttons. Color, line,

and texture can also be used to draw attention to parts of the body such as the waist, chest, arms, one shoulder, etc.



Figure 3.12: Emphasis

Self-check-3

Part I: Choose the best answer (2 point each)

- 1) The basic building of an art.
A) Principle of design B) Element of design C) Line D) Harmony
- 2) One is not Element of design?
A) Line B) color C) Emphasis D) Shape
- 3) It provides the visual dimension of length and width
A) form B) Shapes C) Line D) Textures
- 4) This line adds width to the garment and decreases the apparent height
A) Horizontal B) Vertical C) Curve D) Circumferential
- 5). All parts of the garment are related in size, length & width.
A) Rhythm B/harmony C) proportion D) Emphasis

Part II: Matching (2 point each)

- | A | B |
|---------------|--|
| 1. Proportion | A) outline of the garment |
| 2. Color | B) visual perception in the eyes |
| 3. Emphasis | C) Focal point of the design |
| 4. Rhythm | E) flow of lines, shapes, textures and colors of garment |
| 5. Shape | F) Visual weight |

Note: Satisfactory rating –60% Unsatisfactory - below 12 points

You can ask you teacher for the copy of the correct answers.

Operation Sheet-3.1

Operation title: Take different garment drawings and identify the type of design element applied in the garment using the following steps.

Purpose: To identify elements of the design.

Required material:

- Drawing/design Template
- Pencil
- Paper

Step 1- follow work instructions, standard operating procedures (SOPs) and safe Work practices

Step 2- apply relevant standards

Step 3- use appropriate tools and equipment to identify design element

Step 4- use templates to identify design element that are in proportion and Technically correct, showing all details incorporating all quality criteria

Step 5- Maintaining accurate records.

Operation Sheet-3.2

Operation title: Take different garment drawings and identify the type of design principle applied in the garment using the following steps.

Purpose: To understand principles of design

Required material:

- Drawing/design Template
- Pencil
- Paper

Step 1- follow work instructions, standard operating procedures (SOPs) and safe Work practices

Step 2- apply relevant standards

Step 3- use appropriate tools and equipment to identify design principle

Step 4- use templates to identify design element that are in proportion and Technically correct, showing all details incorporating all quality criteria

Step 5- Maintaining accurate records.

LAP -Test

Name: _____

Date: _____

Time started: _____

Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within required hours.

Task 1: Identify elements of design.

Task 2: Identify principles of design

Unit four: Characteristics of color and preparation of color chart

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Introduction to color and color characteristics
- Colour dimensions
- Relationship of value and intensity and painting color chart
- color wheel Preparation
- Shade scale preparation
- Colour matching for production and Inspection of colour chart
- Adjustment of colour and Documentation of colour chart

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Understand about color and color characteristics
- Investigating and identifying color dimensions
- Identifying relationship between value and intensity and painting color chart
- Preparing color wheel according to color mixing principle
- Preparing shade scale according to color mixing principles
- Implementing color matching for production and Inspecting or checking color charts against quality standards.
- Any changes or adjustments are carried out as required and Documentation relating to color charts is completed.

4.1 Introduction to color and color characteristics

4.1.1 Color

Color is defined as the aspect of things that is caused by differing qualities of light being reflected or emitted by them. To see color, you have to have light. When light shines on an object some colors bounce off the object and others are absorbed by it. Our eyes only see the colors that are bounced off or reflected. The first person to discover the link between color and light was scientist Sir Isaac Newton.

When it comes to graphic design, understanding color and how it works in tandem with shade is important. Scientifically, color is an expression of light. Certain materials absorb and reflect specific wavelengths of visible light, which results in objects taking on a certain color to the human eye. A blue flower reflects and disperses blue light back at us while absorbing all other wavelengths of light, so what you see is the color blue. When nearly all light is reflected, you see white. When no light is reflected, you see black.

As any rainbow will demonstrate, black isn't on the visible spectrum of color. All other colors are reflections of light, except black. Black is the absence of light. Unlike white and other hues, pure black can exist in nature without any light at all.

Classification of colors on the basis of composition is as follows:

1. Primary colors. Red, yellow, and blue colors at the three ends of the triangle of color chart are known as primary colors.

2. Secondary Colors. Secondary colors are formed by mixing two prim colors in the equal proportions. Green orange and purple colors in color chart secondary colors.

Red + Yellow = Orange Yellow + Blue = Green Blue + Red = Purple

3. Tertiary or Intermediate Colors. When the primary color is mixed with an adjacent secondary color, an intermediate color it formed. There are six intermediate colors. Yellow + Orange = Yellow orange Yellow + Green = Yellow green Blue + Green = Blue green Blue + Purple = Blue purple Red + Purple = Red purple Red + Orange = Red orange in this way, there are 12 colors in the color chart-3 primary colors, 3 second' colors and tertiary colors.

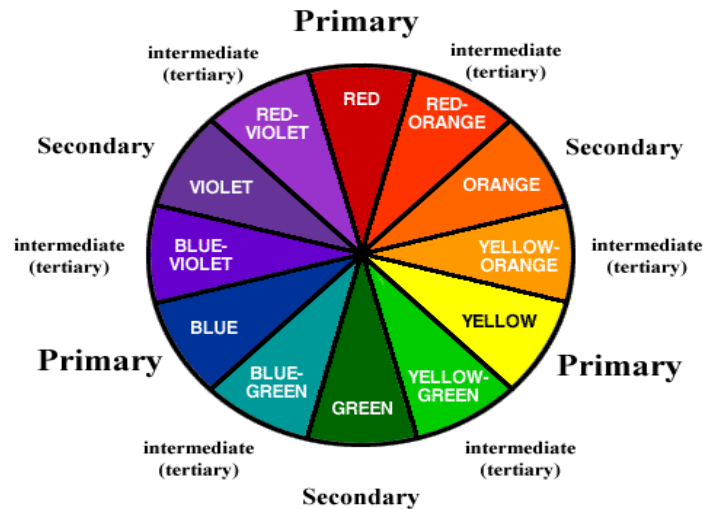


Figure 4.1: Color wheel

4.1.2 Color characteristics

There are three main characteristics for understanding variations in color. These are hue, saturation, and intensity or brightness. Hue represents the observable visual difference between two wavelengths of color. Saturation refers to the richness or strength of color. When a beam of red light is projected from the spectrum onto a white screen, the color is seen as saturated. All of the light that comes to the eye from the screen is capable of exciting the sensation of red. If a beam of white light is then projected onto the same spot as the red, the red looks diluted. By varying the intensities of the white and red beams, one can achieve any degree of saturation. In handling pigments, adding white or gray to a hue is equivalent to adding white light. The result is a decrease in saturation.

A brightly colored object is one that reflects or transmits a large portion of the light falling on it, so that it appears brilliant or luminous. The brightness of the resulting color will vary according to the reflecting quality of the object. The greatest amount of light is reflected on a white screen, while a black screen would not reflect any light.

4.1.3 Meanings of color

1) Black

Black is the color of authority and power, stability and strength. It is also the color associated with intelligence (doctorate in black robe; black horn rimmed glasses, etc.) Black clothes make people appear thinner. It's a somber color sometimes associated with evil (the cowboy in the black hat was almost always the "bad guy").

The psychological implications of black are considerable. It creates protective barriers, as it absorbs all the energy coming towards you, and it enshrouds the personality.

Positive: Sophistication, glamour, security, emotional safety, efficiency, substance.

Negative: Oppression, coldness, menace, heaviness.

2) White

For most of the world this is the color associated with purity (wedding dresses); cleanliness (doctors in white coats) and the safety of bright light. In some eastern parts of the world, white is associated with mourning. Just as black is total absorption, so white is total reflection. In effect, it reflects the full force of the spectrum into our eyes. Thus it also creates barriers, but differently from black, and it is often a strain to look at.

Positive: Hygiene, sterility, clarity, purity, cleanness, simplicity, sophistication, efficiency.

Negative: Sterility, coldness, barriers, unfriendliness, elitism.

3) Gray

Gray is most associated with the practical, timeless, middle-of-the-road, solid things in life. Too much gray leads to feeling mostly nothing; but a bit of gray will add that rock solid feeling to your product. Some shades of gray are associated with old age, death, taxes, depression or a lost sense of direction.

Positive: Psychological-neutrality.

Negative: Lack of confidence, dampness, depression, hibernation, lack of energy.

4) Red

If you want to draw attention, use red. It is often where the eye looks first. Red is the color of energy. It's associated with movement and excitement. People surrounded by red find their heart beating a little faster and often report feeling a bit out of breath.

Red is the symbol of life (red blooded life!) and, for this reason, it's the color worn by brides in China. Red is used at holidays that are about love and giving (red roses, Valentines hearts, Christmas, etc.) but the true color of love is pink).

Positive: Physical courage, strength, warmth, energy, basic survival, 'fight or flight', stimulation, masculinity, excitement.

Negative: Defiance, aggression, visual impact, strain.

5) Blue

Over the ages blue has become associated with steadfastness, dependability, wisdom and loyalty (note how many uniforms are blue). Many bedrooms are blue because it's calm, restful color.

Positive: Intelligence, communication, trust, efficiency, serenity, duty, logic, coolness, reflection, calm.

Negative: Coldness, aloofness, lack of emotion, unfriendliness.

4.2 Color Dimension

The characteristics of a color are determined by three different elements:

- **Hue**
- **Value and**
- **Chroma**



Figure 4.2: Elements of color

A) Hue

Hues denote qualities that can be differentiated by colour words such as red, yellow, green, blue or purple. Hue is the most recognizable characteristic of a color. It's what most people mean when they say the word "color." There are really an infinite number of possible hues. For instance, between red and yellow lies every possible orange hue.

B) Chroma

Chroma refers to the purity and intensity of a color. High chroma colors look rich and full. Low chroma colors can look dull or pale. Pastel colors are low chroma, while intense jewel tones are high chroma. Chroma is also referred to as saturation.

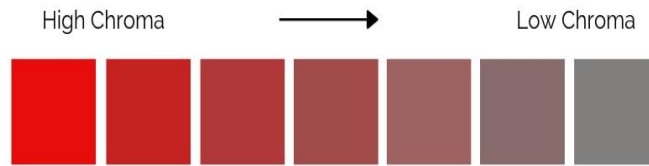


Figure 4.3: Chroma

C) Value

Value is the lightness or darkness of a color. Sometimes light colors are called tints, and dark colors are called shades. Value is also referred to as luminance.

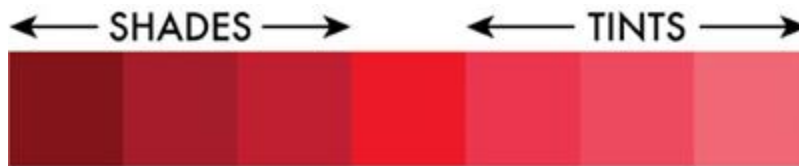


Figure 4.4: value of red color

4.3 Relationship of value and intensity and painting color chart

4.3.1 Relationship of value and intensity

Value is the lightness or darkness of a hue and it is changed by adding black or white to a color. Intensity is the brightness or dullness of hue and is changed by mixing a color with its complement (the color directly across from it on the color wheel).

All values can be measured using a value scale, which theoretically has an infinite number of values. Most value scales are sufficient enough when showing 7-9 values. The pure color is generally referred to as “hue”. The value of a hue is adjusted by the addition of either pure black or pure white. Value is the measurement of the amount of black or white a pure hue has mixed.



Figure 4.5: Value Scale

By adding black to the color, the value is made darker, resulting in what is referred to as a “shade”. When white is added to a color, the result is a lighter value. Lighter values are referred to as “tints”.



Figure 4.6: Shade and Tint

An example can be seen with the color red. The hue is red. A tint of red is what is commonly referred to as the color “pink” (red + white). A darker value, or shade of red, may be a color that we commonly refer to as “Burgundy” (red + black).

Intensity, on the other hand deals with the amount of purity in the hue itself. It can also be referred to as “saturation”. Primary colors are considered to be the most “pure” in intensity. Intensity can also be considered as the brightness or dullness of a color.

Intensity is adjusted by adding additional colors to the pure hue. A color can be made less intense by adding gray to the color. In some ways, intensity can be measured by the amount of gray in the hue .

Hues can only degrade in intensity. In other words, additional colors cannot be added to a hue to make them “more intense”. Each color that is added to a pure hue decreases its intensity.



Figure 4.7: Intensity

Areas or objects that are receiving light are typically more intense in hue, while areas or objects in shadow are sometimes less intense chromatically.



Figure 4.8: Intensity versus value

4.3.2 Painting color chart

Color charts are also called color references. This is a flat card that is printed with paint color samples. These come in various styles such as page charts, fans or swatch books.

Typically there are two different types of color charts:

Color reference charts are intended for color comparisons and measurements. Typical tasks for such charts are checking the color reproduction of an imaging system, aiding in color management or visually determining the hue of color.

Examples are the IT8 and color checker chart.



IT8 chart



Color checker

Figure 4.9: Color reference chart

Color selection charts present a palette of available colors to aid the selection of spot colors, process colors, paints, pens, crayons, and so on – usually the colors are from a manufacturer’s product range. Examples are the Pantone and RAL systems.



Figure 4.10: Color selection chart

4.4 Preparing 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. The color wheel is a visual representation of colors, with hues arranged according to wavelength. Color wheels allow color relationships to be represented geometrically, and show the relationship between primary colors, secondary colors and tertiary colors.

The color wheel is an important tool for artists is because it displays the relationships between the colors. In general, the way the colors contrast with each other can be defined as either analogous or complementary.

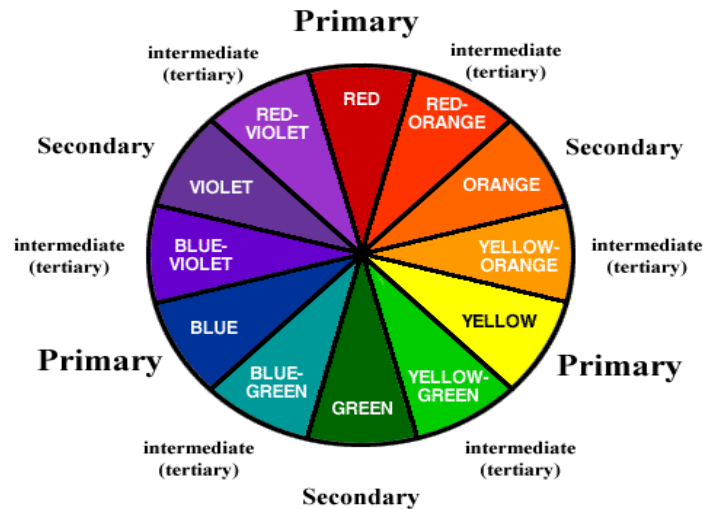


Figure 4.11: Color wheel

Steps for preparing color wheel

Step-1 Cut a piece of watercolor paper into a square. Tear off a piece of watercolor paper, which is sturdy enough to withstand watercolor and acrylic paint. Measure the size of your paper and use a ruler to cut it into a square if it's a rectangle. For example, if your paper is 12 by 16 inches (30 cm × 41 cm), cut it down to 12 by 12 inches (30 cm × 30 cm).

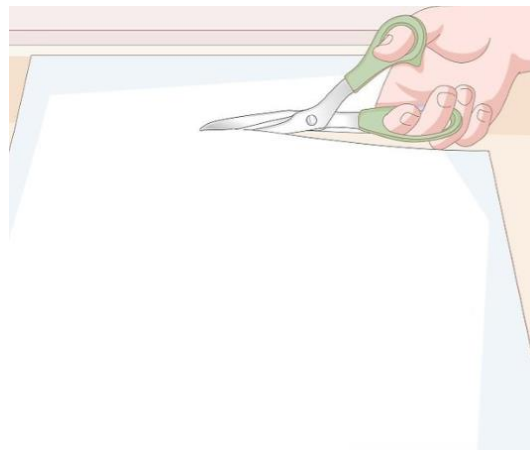


Figure 4.12: Paper preparation

Step-2: Make a dot in the center of the paper. Lay a ruler horizontally on the center of the square and make a small mark in the middle using a pencil. Then, turn the ruler vertically so it's lined up with your mark and make a small dot in the center.

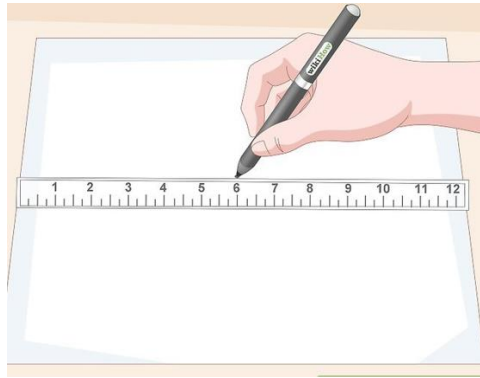


Figure 4.13: Marking center point

Step-3 Use a compass to make a small circle 2 ½ inches (6.4 cm) away from the center. Attach a pencil to a drawing compass and stick the other leg of the compass on the center dot. Extend the pencil leg of the compass so it's about 2 ½ inches (6.4 cm) from the dot. Then, slowly rotate the compass to make a small circle.

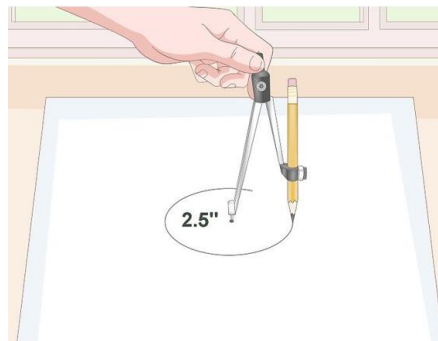


Figure 4.14: draw a circle

Step-4: Make another circle that's 5 ½ inches (14 cm) from the center dot. To create another row for your color wheel, make a slightly larger circle beyond the small one you just made. Adjust your compass so it's 5 ½ inches (14 cm) from the dot and rotate it to make a circle.

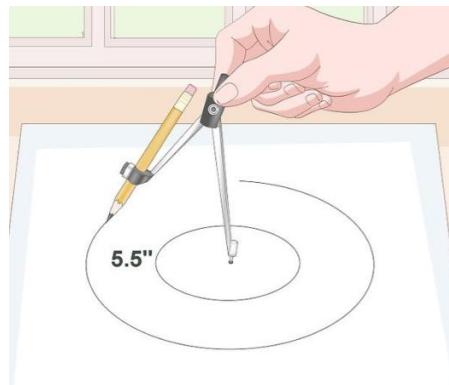


Figure 4.15: draw a circle

Step-5: Draw the outer circle 8 ½ inches (22 cm) from the center. Move the leg of your drawing compass so it extends 8 ½ inches (22 cm) from the middle of the color wheel and draw the largest circle.

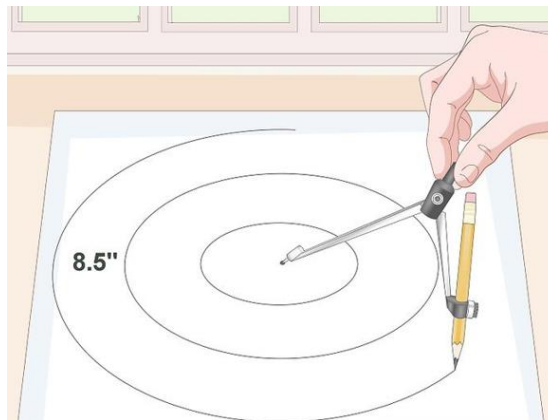


Figure 4.16: draw a circle

Step-6: Dividing the circle in to twelve section and Write the numbers 1 through 12 clockwise around the outside of the wheel. Use your pencil to write 12 at the top of the outer ring and 6 near the bottom of the ring. Fill in the rest of the numbers so they're evenly spaced just like on a clock

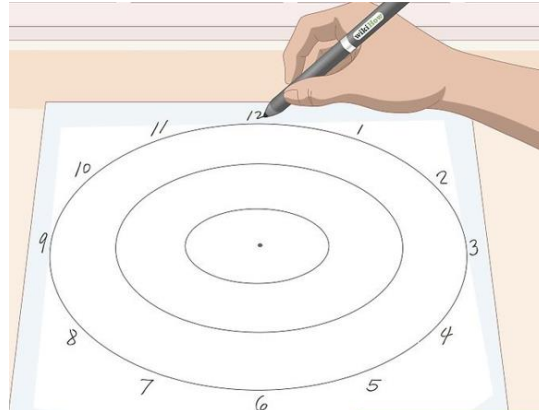


Figure 4.17: dividing the circle

Step-7: Draw a straight line from between the 12 and 1 to between the 6 and 7. Lay your ruler so it's in between the 12 and 1. Line up the other end of the ruler so it passes right between the 6 and 7. Then, use your pencil to draw a straight line through the center of the color wheel.

- The line should go through the center dot you drew in the middle of the color wheel.

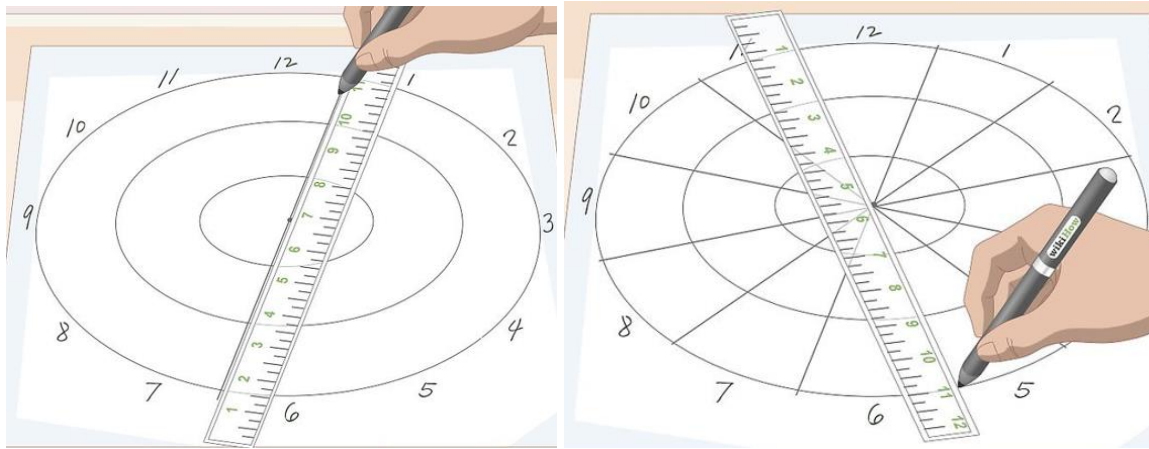


Figure 4.18: Section

Step-8: Label each segment with the color you'll put there. You can write the color or put an abbreviation directly under the number for the segment. Move around the color wheel clockwise and list every color. To make a classic color wheel these colors should correspond with the numbers you wrote for the segments: 12 - Yellow

- 1 - Yellow-green, 2 - Green, 3 - Blue-green, 4 - Blue, 5 - Blue-violet, 6 - Violet, 7 - Red-violet, 8 - Red, 9 - Red-orange, 10 - Orange, 11 - Yellow-orange

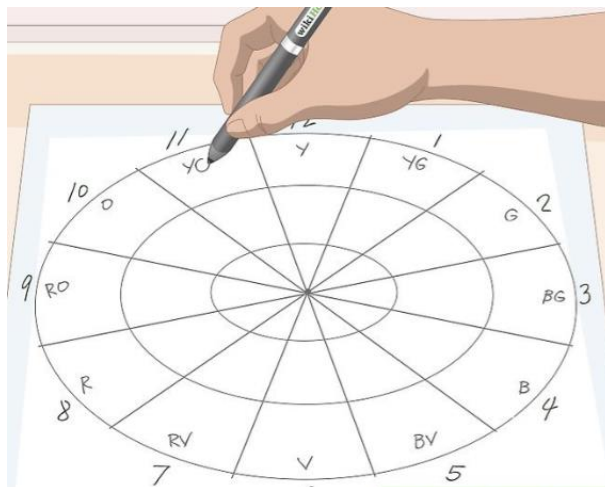


Figure 4.19: Label the section

Step-9: Decide what type of paint to use. Choose a medium that blends easily and you're comfortable with using. Experienced painters might choose watercolor or oil paint, for instance, while kids or beginners might like acrylic or tempera paint

Step-10: Put the primary paint colors on a paint palette. Squirt a coin-sized amount of red, yellow, and blue paint onto a paint palette and leave the rest of the palette empty so you can mix colors.

- If you're using watercolor paints, mix red, blue, and yellow puddles on your palette.



Figure 4.20: Primary color in color palate

Step-11: Paint the primary colors in the biggest segments. Dip your paintbrush into a primary color and paint the biggest segment of the outer circle for red, yellow, and blue. Painting with the pure color is called the hue.

- Remember to rinse your brush thoroughly in between colors

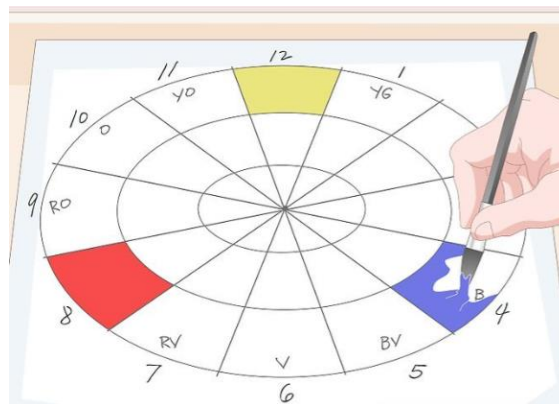


Figure 4.21: primary color

Step-12: Mix the secondary colors and paint the remaining hue segments. Use the colors you labeled on the wheel as a guide to blend secondary colors. For example, mix yellow and blue on your palette to create green, a secondary color. Then, paint this green hue in the biggest segment of your wheel under the label "#2/green". To make the other secondary colors, mix:

- Yellow + red = orange
- Blue + red = purple

- Blue + Yellow = Green

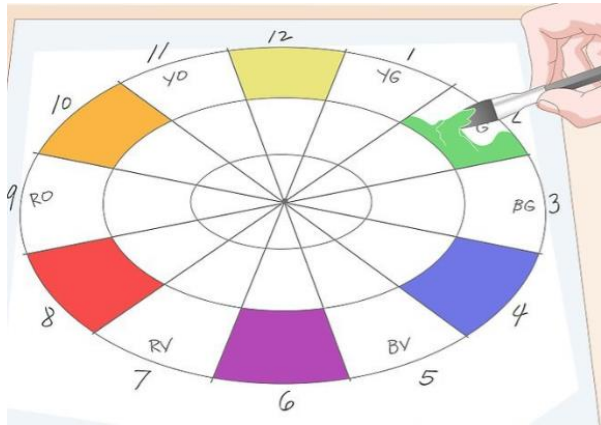


Figure 4.22: Secondary color

Step-13: Create the tertiary hues for your wheel. At this point, half of the biggest segments should be filled with primary and secondary hues. Now, combine a primary color with the secondary color next to it to make a tertiary hue. Use these hues to fill in the biggest segments according to your color label. To make the tertiary hues, combine:

- Red + purple = red-purple
- Red + orange = red-orange
- Blue + purple = blue-purple
- Blue + green = blue-green
- Yellow + orange = yellow-orange
- Yellow + green = yellow-green

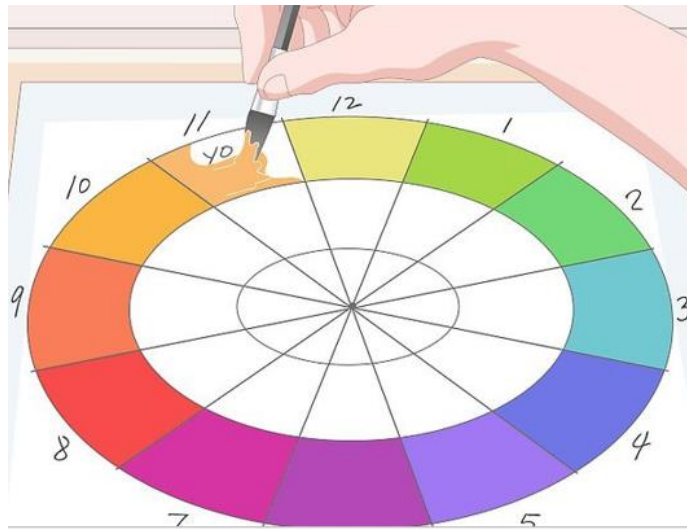


Figure 4.23: Tertiary color

Step-14: Add white to create the tint for each color and paint the segment below each hue. Now, blend enough white paint into each primary, secondary, and tertiary hue to lighten the color. Once you've blended enough to see a noticeable difference, paint the space directly below each hue

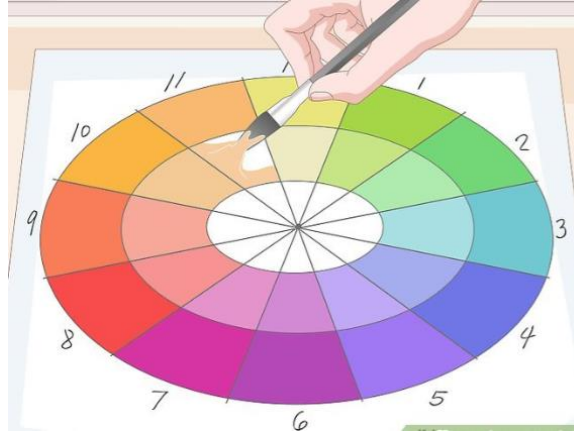


Figure 4.24: Light color

Step-15: Add black to the hues to make shades of each color. Rinse your brush well to remove any white paint and then blend a pure hue with a little black. This will darken the hue to make the shade for the color. Then, paint the smallest segment for each color using the shade.

- Remember to rinse your brush well so you don't muddle the paint.



Figure 4.25: Dark color

4.5 Shade scale preparation

Shade is a hue or mixture of pure colors to which only black is added. It contains no white or gray. Shade darkens the color, but the hue remains the same. When mixing a shade, begin with the color itself then add black one drop at a time.

Typically, only black is added to the pure color or hue to give it shade. There is no white or gray added. You can also add black to a combination of colors to create a shade. It is not specifically for pure colors. The shade of color has ranges. It can go from a slightly darker version of the color to almost black. This is based on the amount of black that is added. The color tends to look darker, more dramatic, and intense. It is easy to add too much black and get a shade much darker than you intended. You should add black in small amounts to get the shade you want. You can also consider adding a darker hue of the same color to shade your existing color. This can help you get the desired color without accidentally adding too much black and getting a shade you did not want. A ten percent of black color is added to the red hue in the bellow figure.

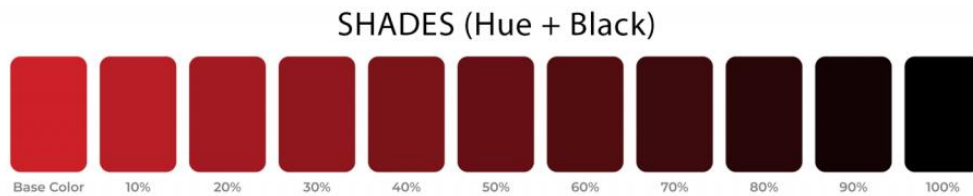


Figure 4.26: Shade Scale

4.6 Colour matching for production and inspection of colour chart

Millions of colors exist in the world. They are interpreted differently from person to person and can be difficult to identify correctly. When it comes to product design, color matching is a critical component that has a dramatic impact on a product's success. Luckily, technology has made it easy to identify the abundance of hues that surround us.

Colors are perceived differently from person to person, both technically and from an emotional standpoint. This is why color matching is so important. The human eye has three receptors. Each of these receptors is sensitive to a colored light: red light, green light, and blue light.

Color is a subjective thing. What you see is not necessarily what other people see, as perception and environmental factors play an instrumental role in the way that we see color. Lighting

impacts the way a color is perceived, with the same color appearing very differently in different light environments. Relativity can also be an important issue, as the way an individual sees colors on a page will be influenced by the other colors on that page. Colors interact with each other.

The fashion professional use color palette, color order and communication system (Munsell, CIE...), and pantone number. Most of fashion designers use color wheel and Pantone number to communicate with others.

Pantone's digital tools are capable of evaluating a color prior to production and identifying its exact code. These tools ensure that the color will match, regardless of perception, surface, or run, which saves valuable time and money.

Given the understanding of the color wheel and color temperatures, we can easily match colors that are pleasing to the eye and create a beautifully matched outfit. Complementary colors are colors on opposite sides of the color wheel, For instance, red/green, yellow/purple, and blue/orange. Complementary colors always match. Usually the colors are the same distance from the center of the color wheel (i.e. shades), but you can play around with complementary colors at various distances from the center to produce a similarly satisfying combination.



Figure 4.27: complementary color matching

Analogous colors (also called dominance harmony) are colors that are continuous shades on the color wheel. Different shades of the same color almost always look great together giving us

another way to produce matching (i.e. pleasing) color combinations. Red, reddish-orange, orange, yellow-orange is one example of a set of analogous colors.



Figure 4.28: Analogous color matching (yellows in this example)



Figure 4.29: Analogues color matching

Triadic colors are colors on the wheel that are equally spaced apart, forming a triangle across the color wheel. These colors include not just the primary (red, yellow, and blue) and secondary colors but any combination of colors that are equally spaced on the color wheel. Triadic colors look well together and are typically quite vibrant.

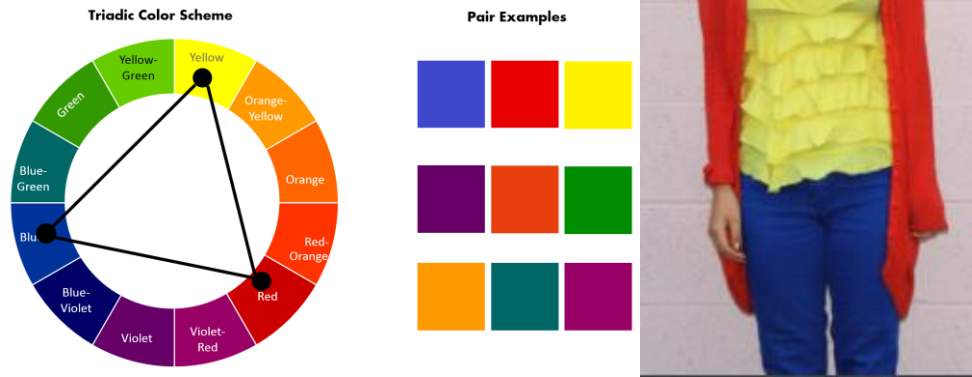


Figure 4.30: Triadic color matching

4.7 Adjustment and documentation of color

When the same amount of contrast colors such as yellow/blue, red/cyan, and green/magenta mixing together, it will produce a neutral gray tone. In color adjustment, to reduce the intensity of one particular color is to add in the contrast color. The color adjustment is carried out based on the meaning of color and occasion.

After adjustment is carried out the color is documented using color scheme, pantone number and color order system. This process is useful for further production. It is also used as catalog to communicate with client.

Self-check-4

Part I: Choose the best answer. (2 point each)

- Characteristics of color describes qualities that can be differentiated by colour words such as red, yellow, green, blue or purple.
A) Chroma B) Intensity C) Hue D) Tint
- The purity and intensity of a color
A) Shade B) Hue C) Chroma D) hue
- lightness or darkness of a color
A) Shade B) Tint C) Value D) Chroma

Part II: Short answer (3 point each)

- List out Elements (characteristics of color)?
- Write classification of colors?
- Discuss about Shade and Tint?
- What is color wheel and its importance to the fashion?
- Discuss about types of color chart?

Note: Satisfactory rating –60% Unsatisfactory - below 13 points

You can ask you teacher for the copy of the correct answers.

Operation Sheet-4.1

Operation title: Color wheel preparation using water or oil color.

Purpose: To understand classification of color and color circle

Required material:

- Oil/water color (Blue, Red and Yellow)
- Watercolor paper
- Brush
- Paint palette

Step-1: Prepare equipment and material

Step-2: Cut a piece of watercolor paper into a square.

Step-3: Use a compass to make a small circle in the center of the paper.

Step-4: Use a compass to make a circle.

Step-5: Dividing the circle in to twelve section and Write the numbers 1 through 12 clockwise around the outside of the wheel.

Step-6: Label each segment with the color you'll put there

1 - Yellow-green, 2 - Green , 3 - Blue-green, 4 – Blue, 5 - Blue-violet, 6 – Violet, 7 -Red-violet, 8 – Red, 9 - Red-orange, 10 – Orange, 11 - Yellow-orange

Step-7: Put the primary paint colors on a paint palette

Step-8: Paint the primary colors in the 4,8,12 segments

Step-9: Mix the secondary colors and paint the remaining hue segments

Step-10: Create the tertiary hues for your wheel.

Step-11: rinse the brush properly

Operation Sheet-4.2

Operation title: Color scale preparation for red hue

Purpose: To understand color scale

Required material:

- Oil/water color (Blue and Black)
- Watercolor paper
- Brush
- Paint palette

Step-1: Prepare equipment and material

Step-2: Cut a piece of watercolor paper.

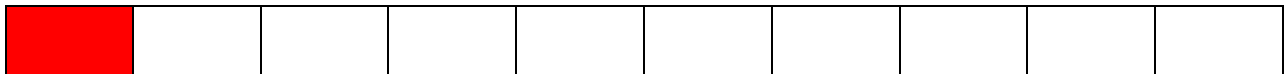
Step-3: make rectangle and divide into nine section.



Step-5: Put the and red, black colors on a paint palette



Step-6: Paint the red color in the first sectioned rectangle.



Step-7: Mix 10 percent of black color to the red color for each section.

Step-8: Paint the rest section

Step-9: Rinse the brush properly

LAP-Test

Name: _____

Date: _____

Time started: _____

Time finished: _____

Instructions: Give necessary tools and materials you are required to perform the following tasks within required hours.

Task 1: Prepare color Wheel.

Task 2: Prepare color Scale.

Reference

- Calderin, J., & Volpintesta, L. (2013). *The Fashion Design Reference & Specification Book: Everything Fashion Designers Need to Know Every Day*. Rockport Pub.
- Gwilt, A. (Ed.). (2014). *Fashion design for living*. Routledge.
- Holtzschue, L. (2012). *Understanding color: an introduction for designers*. John Wiley & Sons.
- McKelvey, K., & Munslow, J. (2011). *Fashion design: process, innovation and practice*. John Wiley & Sons.
- Morley, J. (2013). *Conceptual fashion: design, practice and process* (Doctoral dissertation, Queensland University of Technology).
- Paksoy, H., & Yalcin, S. (2005, January). Architectural inspirations in fashion design. In *The 3rd International Symposium of Interactive Media Design (2005, January)*.
- Renfrew, E., & Renfrew, C. (2009). *Basics Fashion Design 04: developing a collection* (Vol. 4). Ava Publishing.
- Seivewright, S. (2012). *Basics fashion design 01: Research and design* (Vol. 1). A&C Black.
- Stoeva-Holm, D. (2007). Colors terms in fashion. *dins RE Mc Laury et alii*.
- Zhang, J. F. (2013). The application of color psychological effect on fashion design. In *Advanced Materials Research* (Vol. 796, pp. 474-478). Trans Tech Publications Ltd.

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