



Design I

CRAFTS SUPPLEMENT

4-H MOTTO

Learn to do by doing.

4-H PLEDGE

I pledge

My HEAD to clearer thinking,
My HEART to greater loyalty,
My HANDS to larger service,
My HEALTH to better living,
For my club, my community and my country

4-t! GRACE

(Tune of Auld Lang Syne)

We thank thee, Lord, far blessings great
On this, our own fair land.
Teach us to serve thee joyfully,
With head, heart, health and hand.



Agriculture and
Agri-Food Canada

Agriculture et
Agroalimentaire Canada



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Introduction

WHAT IS DESIGN?

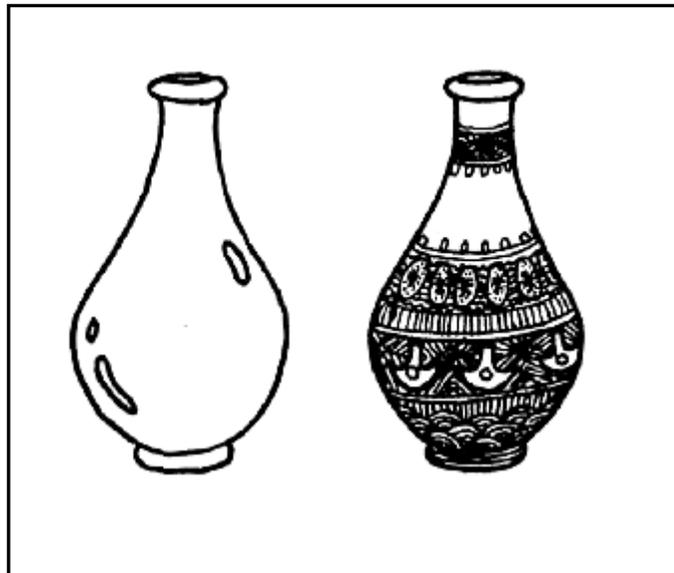
Design plays a major role in our everyday lives. Through the years, man has found many ways to create and decorate objects in his environment, whether to fulfil a certain task or to make his surroundings more beautiful. This plan or arrangement for a specific purpose is called design.

Two types of design are:

1. Structural design
2. Decorative design

Structural design refers to the size and shape of a three-dimensional object. The texture of materials used to make the object is also included in structural design.

Decorative design includes the lines, colours and patterns added to the surface of an object to make it more beautiful and unique.



To make designing easier, we follow a certain set of guidelines that help us make good use of the materials and our imaginations. These guidelines are called **Fundamentals of Design**. The Fundamentals of Design include five elements and five principles to make each design a success.

The elements are the basic, visible parts of a design; principles are the rules to follow when arranging the elements into a pleasing design.

FUNDAMENTALS OF DESIGN

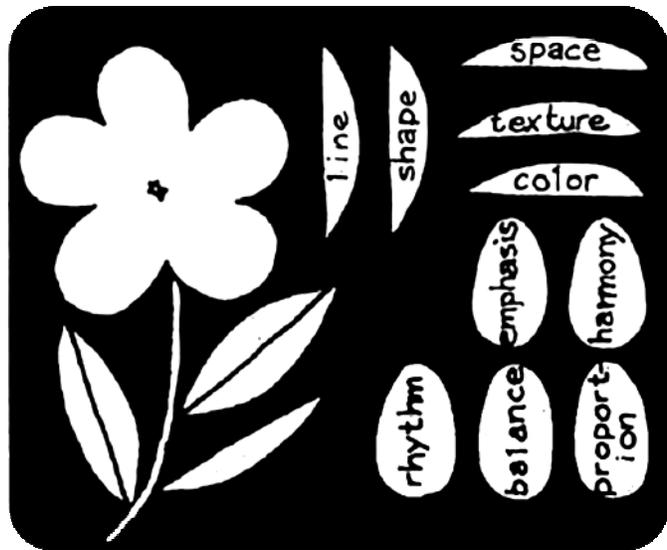
ELEMENTS

line
shape
space
texture
colour

PRINCIPLES

proportion
balance
rhythm
emphasis
harmony

The Design I Crafts Supplement deals with the five elements of design and how to use them in your project area.



Elements of Design

LINE

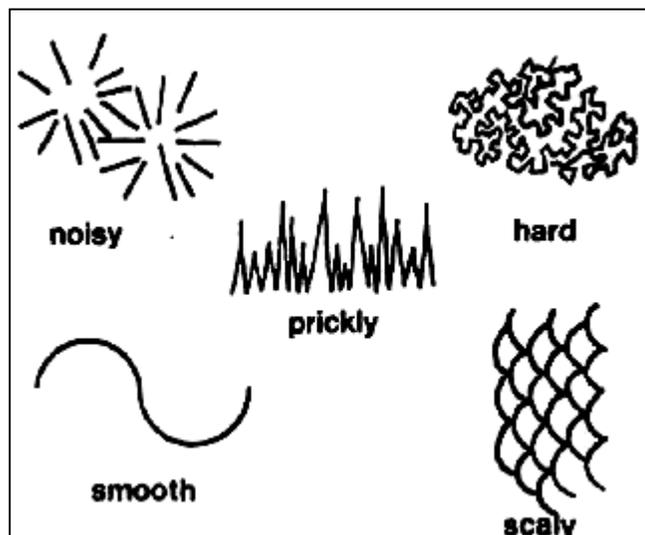
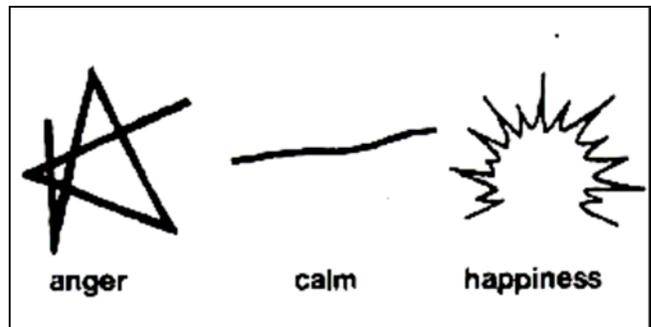
Line is an important element of design. It gives shape, movement, and feeling to almost everything in our lives. One common use of line is writing, where letters and numbers are formed with a pencil or pen.

There are two different kinds of lines:

1. straight
2. curved

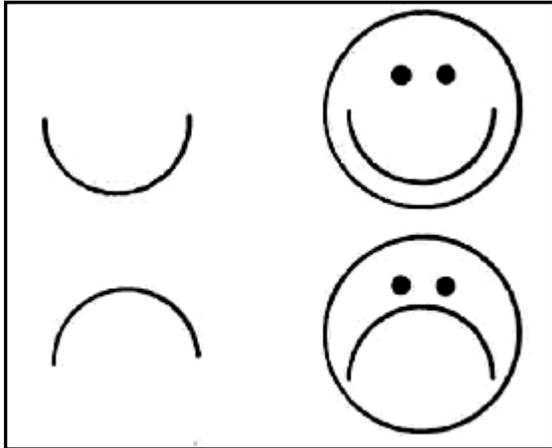
The curve of a line may be very deep or very slight, depending upon the desired effect. Varying the thickness of a line and putting different lines together gives a design its unique character.

Line can express emotion or feeling.



Line can also suggest sound and touch.

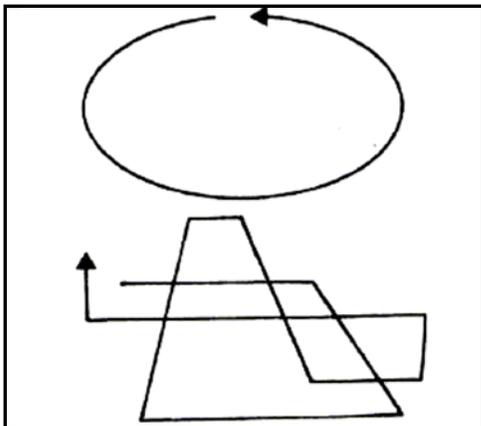
As a line draws the eye along its path, it gives the suggestion of movement. Look at these two lines. Each line causes the eye to move in a different path, and gives a different feeling to the same design.



Line can be used to create shape, pattern or texture, movement, or divide space.

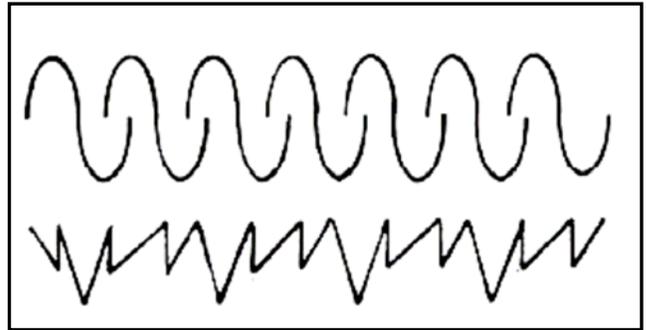
1. Creating a Shape

If a line continues until it crosses over itself, the space within the line is called a **shape**. Lines crossing over other lines can create a variety of different shapes.



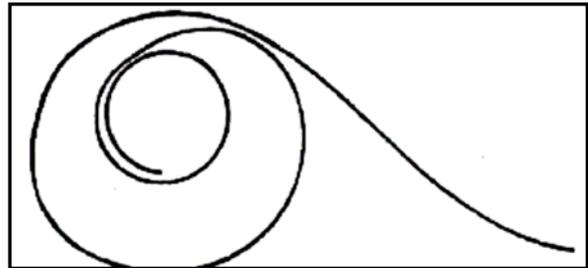
2. Creating a Pattern

By repeating lines or groups of lines many different patterns are formed.



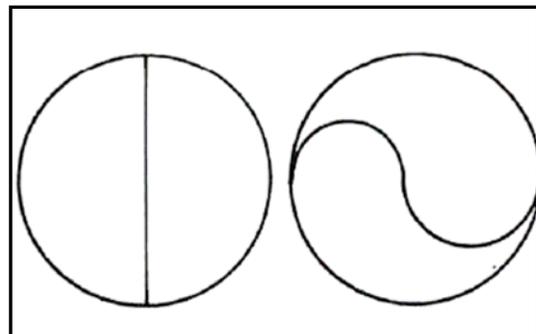
3. Creating Movement

Line shows movement as the eye follows its path. Curved lines or diagonals give the impression of more energy than a horizontal or vertical line.



Dividing Space

Lines can also be used to divide space into equal or unequal parts.



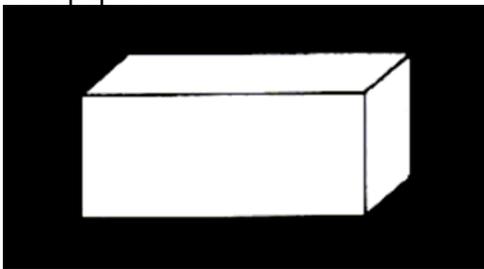
Almost everything we see is defined with lines.

SHAPE

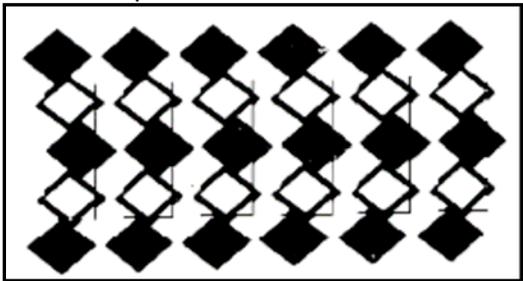
Whenever we connect lines and overlap them we create shapes. A shape may be made of either straight or curved lines. Shape is two-dimensional (flat), lying on one plane only.



The illusion of a three-dimensional form is represented by a shape on flat surfaces such as paper.



Repeating a basic shape over and over creates a pattern. Combinations of different



shapes repeated can make an interesting pattern as well.

You can come up with many different designs by combining a variety of shapes.

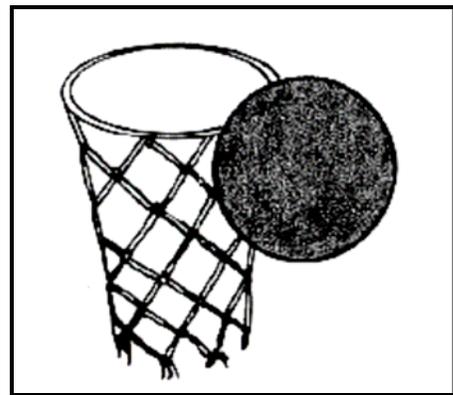
SPACE

Space itself is endless, but a border or



outline limits it. The eye also limits space because it can only see so far ahead and to both sides without moving. When we talk about space in a design we are referring to the actual area the design occupies.

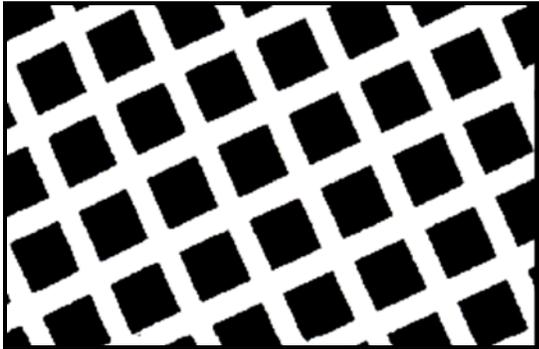
Look at this design. You see both shapes that have been added plus the spaces around the shapes.



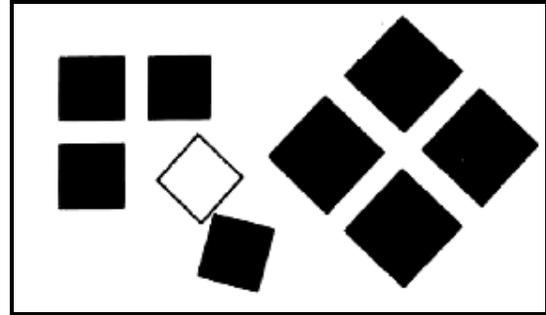
The blank spaces around the shapes are just as important as the shapes themselves. Remember to consider the spaces in your designs.

Like shape, space may be either two-dimensional or three-dimensional. This page and the drawings on it represent two-dimensional space, with the size of the page defining the area to be used and the print and drawings arranged on it. A room is a good example of three-dimensional space enclosed by the walls and ceiling. Notice how the furnishings are arranged in the room you are sitting in. Do they allow movement and give a feeling of space or is everything grouped closely together?

In this design, because the forms are placed close together, we notice the forms more than the spaces.



In this design, on the other hand, emphasizes the empty spaces because the forms are placed further apart.



Notice how space around you is used. See how various objects are arranged in space. Look carefully at how designers use space to create a special effect or feeling.

TEXTURE

Texture is the surface quality of an object, or how the object feels if you touch it. There are many types of texture ranging from very smooth to very rough.

Through trial and error you can soon guess what a texture feels like by looking at it. For example, you know without touching it that a kitten's fur is soft. You also know that a porcupine is prickly!

Texture is important in any design. It is used in both structural and decorative design. Would you like to drink out of a cup that looked like it was made of a rough texture like steel wool? Probably not! Chances are you would choose a cup with a fine, smooth surface. This shows how texture affects structural design and the purpose of an object.

Look at the world around you. What does a sponge feel like? What does the trunk of a tree, or its leaves feel like? Look for things that are soft, smooth, rough, fluffy, or pebbly.

Texture affects the way light reflects from a surface:

Dull or **rough** textures such as cotton, stone, or wood absorb light.

Shiny or **smooth** textures such as polished metal, glass, plastic, or satin reflect light.

High and **low** textures such as velvet, corduroy, or grass both reflect and absorb light. Each fabric strand or grass blade casts a shadow on its neighbour, with light reflection limited to the tip of the fibre or blade.

When you design something, don't forget to use texture. Experiment. Learn what effect texture has on light reflection. Vary our designs by using different combinations and mixing together different arrangements of texture.

COLOUR

Welcome to the wonderful world of colour! With the many colours we find in our homes, schools, clothing and nature, it is hard to imagine a world without colour. Yet many people go through life without really being aware of colour and how it affects us. In ancient times coloured dyes were so precious only kings, queens, and the very rich could afford coloured clothing.

Today almost everything can be found in any number of different colours. To understand colour more fully, let's look at all the colours and see how they are related. When we study colour we usually describe it in terms of hue, value, and intensity.

Hue refers to the name of a pure colour like red, blue, or green.

Value refers to the lightness or darkness of a hue.

Intensity refers to the brightness or dullness of a hue.

I. HUE

The **colour wheel** is made up of three types of colour: primary, secondary, and tertiary.

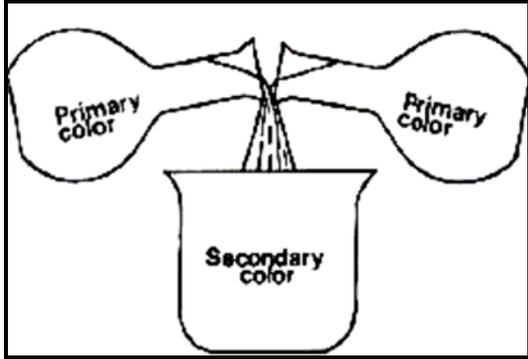
1. Primary Colours

There are only three basic colours: red, yellow, and blue. All other colours are made by mixing together different amounts of these three primary colours.

2. Secondary Colours

When equal amounts of two primary colours are mixed together we get the secondary colours.

red + yellow = orange
yellow + blue = green
blue + red = purple

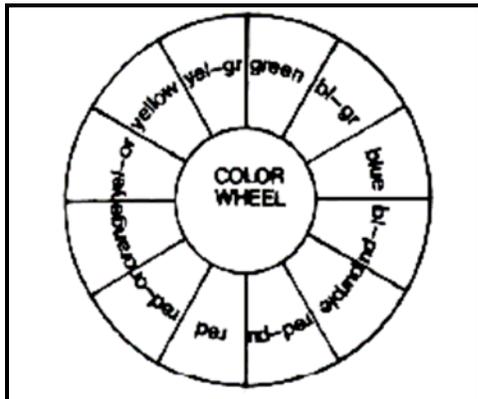


3. Tertiary Colours

In between the primary and secondary colours we find the intermediate or tertiary colours. These are made by adding more of one primary colour to the secondary colour. For example, yellow/orange is made by adding more yellow to orange (which is an equal mixture of yellow and red). Therefore, yellow/orange contains more yellow than red, the two primary colours it is made of.

- red + orange = red/orange
- yellow + orange = yellow/orange
- yellow + green = yellow/green
- blue + green = blue/green
- blue + purple = blue/purple
- red + purple = red/purple

All together there are 12 colours in our colour system. These colours together make the colour wheel.



Black, white and grey are not considered to be colours. Black is caused by complete absorption of all light rays, and white is caused by reflection of all light rays. Grey is the imperfect absorption of light.

II. VALUE

Value is the lightness or darkness of a colour. You often hear words such as "light" red or "dark" blue used when describing colour value.

Light colours are known as tints and are made by adding white to a hue; shades are made by adding black to a hue, causing it to darken.

Let's see how red can be divided into some of its tints and shades.

White with just a hint of pink	
Pale pink	
Pink	
Almost red	
Real red	
Dark red	
Almost black with a hint of red	

III. INTENSITY

Intensity is the brightness or dullness of a colour. In the colour wheel all colours are at their brightest intensity. They are very strong and vivid colours.

Variety can be added by greying or dulling a colour. In art we do not grey a colour by adding black. This does take away the brightness, but it also makes the colour look thick and muddy. To grey a colour properly we add that colour's complement--that is, the colour directly opposite on the colour wheel.

For example, add blue to orange to get various shades of brown and beige. By mixing purple and yellow you get gold, and by adding red to green you get various shades of olive green.

COLOUR HARMONY

How can we tell which colours go well together? One way is to try the colours together and imagine what they will look like in the finished product. Another way is to use colour plans which have already been worked out for you.

There are two main kinds of colour plans--one uses related colours and the other uses contrasting colours.

A. RELATED COLOURS

1. Monochromatic
2. Analogous
3. Accented neutral

B. CONTRASTING COLOURS

1. Complementary
 - a. simple complement
 - b. split complement
 - c. double-complement

2. Triad

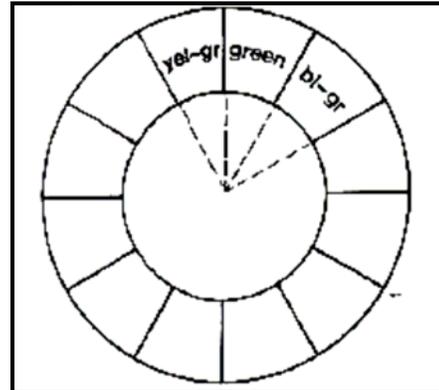
A. RELATED COLOURS

1. Monochromatic

Monochromatic means the use of only one colour. In a monochromatic colour scheme we use several values (shades and tints) or intensities (brightness and dullness) of the same colour.

2. Analogous

In an analogous colour scheme, we use colours which lie next to each other on the colour wheel. They all have a colour in common. For example; yellow/green, green, and blue/green all have green in common.



3. Accented Neutral

The accented neutral scheme uses black, white, or grey and one other colour to accent it. An example might be black and white, with bright red as an accent.

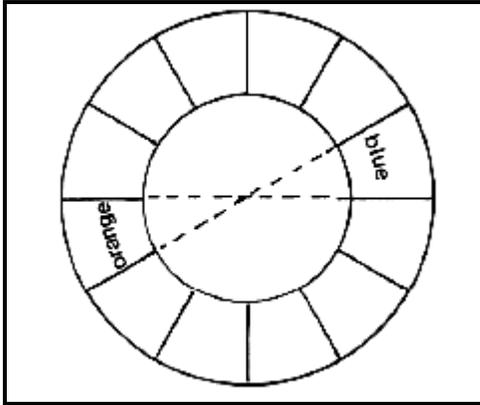
B. CONTRASTING COLOURS

1. Complementary Colours

Complementary colours lie opposite each other on the colour wheel.

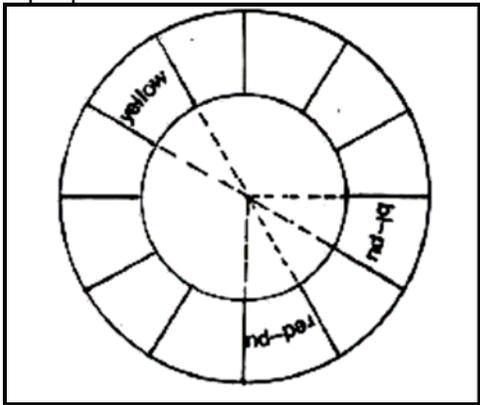
a. Simple Complement

A simple complement colour scheme uses two colours, one opposite the other on the colour wheel. They all have a colour in common. For example; yellow/green, green, and blue/green all have green in common.



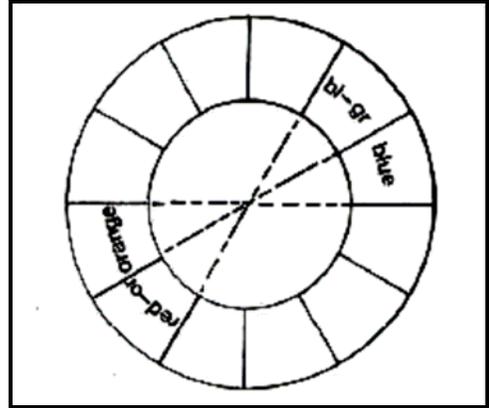
b. Split-complement

One colour plus the colours on either side of its complement are used in this colour scheme. Example: yellow, red/purple and blue/purple.



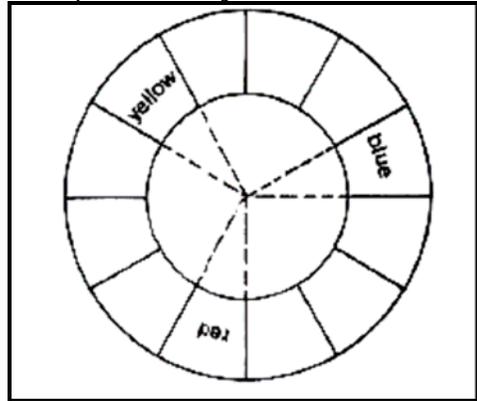
c. Double-complement

Two sets of complementary colours are used, giving us a total of four colours. An example is: orange plus blue, and blue/green plus red/orange.



2. Triad

Colours in a triad colour scheme are equally distant on the colour wheel. Each set of three colours forms an equilateral triangle. An example is: red, yellow and blue.



As you can see, a lot is involved in putting colours together. It takes a lot of thought, and even more practice!

COLOUR CHARACTERISTICS

Colour is important to design because you can do so much with it. You can attract attention, alter the appearance of size, and affect emotions. Colour characteristics include: size, weight, temperature, distance, and emotion.

1. Size

Have you ever noticed that colour can exaggerate or minimize size? A dark coloured T-shirt looks smaller than a light coloured T-shirt of the same size. Generally, colours of dark values appear smaller than light values. The eye also tends to notice bright intensities more easily than dull intensities. Therefore, bright intensities look bigger.

2. Weight

Since light colours and bright intensities look larger than dark colours and dull intensities, they also appear to be heavier. Their apparent size adds to their appearance of weight.

3. Temperature

Colours can give a feeling of warmness or coolness. Warm colours include reds, yellows, and oranges. These colours are associated with the sun or fire. Colours such as blue, green and purple are usually associated with cool water and shady forests.

Colour combinations such as yellow/green and red/purple contain a mixture of warm and cool colours. When they are combined with cool colours they also appear to be cool. When combined with warm colours, they appear warm.

4. Distance

Colour can also create an illusion of distance. Once again, since light values and bright intensities appear to be larger, they also appear to be closer to the observer. Dark values and dull intensities appear to be further away or to fade into the distance. When we compare warm and cool colours, warm ones appear to be closer than cool colours.

5. Emotion

Finally, colour can also affect the way we feel. Warm colours can make us feel happy, active and cozy. Cool colours seem quiet and can relax us. Dull colours can make us feel unhappy, inactive and depressed.

We all have definite ideas of what colour some things should be. Most of these colour preferences are learned at an early age. For example; how would you like to eat a dinner of green steak, blue butter, red potatoes and orange milk? What would you do if you saw a green stop sign? Would you stop?

Colour is an essential part of design. Before you use colour in your designs, ask yourself: Where is it to go? What is it going to be used for? What effect am I trying to create?