Elements of art.

How color, shape, line, and texture are combined to form designs. Like the ingredients in a recipe.

Space

element of art. an empty area (usually bounded in some way between things). Area above, below, around and object.

Negative Space

empty spaces surrounding shapes and forms

Positive Space

Space in an artwork that is positive. Filled with something, such as lines, designs, color, or shapes.

Line

element of art. a length (straight or curved) without breadth or thickness, lead the eye through a design

Vertical Lines

forces the eye to move up & down, creates the illusion of tallness or slenderizes the wearer when used in apparel

Horizontal Lines

forces the eye to move from the left to right, creates the illusion of width

Curved Lines

more of an informal design, used to move the eye through/over a design, natural

Color

element of art. a result of the way an object reflects or emits light.

Shape

element of art. The two-dimensional contour that characterizes an object or area, sometimes called a silhouette, in contrast to three-dimensional form.

Form

element of art. A three-dimensional object or the illusion of three dimensions, height, width and depth.

Texture

element of art. Perceived surface quality, tactile quality of goods, how the surface of a material feels and looks.

00:18

01:43

Principles of Design

Guidelines of balance, proportion, emphasis and rhythm that tell us how to use the Elements of Design to create pleasing designs. Like a recipe tells the cook how to use the ingredients.

Balance

Principle of Design, a state of equilibrium, produces equality in a design or outfit, when all sides of design appear equal in visual weight or power of attraction the design seems to have stability

Symmetrical Balance

distribution achieved by arranging elements as horizontal or vertical mirrored images on both sides of an imaginary center line of a screen.

Asymmetrical Balance

the type of balance when both sides of the central axis are not identical, yet appear to have the same visual weight

Formal Balance

most often a design in Symmetrical Balance

Informal Balance

most often a design in Asymmetrical Balance

Radial balance

Created when lines, shapes or designs emerge from a central point resulting in the design being an equal distance from that point

Visual Weight

apparent "heaviness" or "lightness" of the forms arranged in a composition. This is gauged by how much a shape draws our attention

Unity

Principle of design, the combination of all elements working together to achieve a sense of harmony in your design; grouping related items close together

Harmony

Principle of design, orderly and pleasing arrangement of shapes and lines

Rhythm

principle of design, repetition of visual movement

Repetition

Principle of design, repeats lines, shapes, colors, or textures. helps to create rhythm.

Proportion

principle of design, harmonious arrangement or relation of parts or elements within a whole (as in a design)

Scale

the ratio between the size of something and a representation of it

Contrast

principle of design, put in opposition to show or emphasize differences

Gradation

Principle of design, Gradual increase or decrease of similar design elements, also called progression

Emphasis

principle of design, The principle of design that uses a concentration of interest or area of focus in a particular part or area of a design.

Color Wheel

Tool used to show hues, how they are related to each other, and what colors will be created when mixing paints & dyes together

Color Schemes

Specific patterns of how colors can be used together

Monochromatic Color Scheme

Use of different tints, shades, & intensities of ONE color

Analogous Color Scheme

Use of adjacent colors on the color wheel - usually in THREE colors

Complementary Color Scheme

Use of TWO colors that are directly across from each other on the color wheel

Split-Complimentary Color Scheme

Uses of THREE colors: combines one color with the colors on each side of its opposite

Triad Color Scheme

Combines THREE colors that are equidistant on the color wheel

cool colors

Colors that are associated with the sky, air, water or grass. These colors makes our picture look cool in temperature and makes it look calm. Blue, green and purple.

warm colors

Colors that have red, orange or yellow in them, they show heat energy and anger.

Neutral Colors

black, white, gray, beige

Accented Neutral Color Scheme

Combines white, gray, black, or beige with ONE other color as an accent

3 properties of color

hue, value, intensity

hue

Another name for Color

value

Darkness or lightness of a color

intensity

Brightness or dullness of a color

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

The following are the different elements of Art.

1. Line

2. Form and Shape

3. Colour and

4. Texture

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

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

To create a mood.

To define and create shape.

To indicate direction.

To lead the eye.

To establish a point of emphasis.

To create an illusion

To indicate dimension of length and width.

To enclose space.

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

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

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

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

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

The shape of the body wearing the design.

The colour of the fabric.

The degree of contrast that enable the lines to be noticed.

The comparison of adjacent shapes or spaces formed by lines.

The fabric drape, hand, weave, print and texture.

The effect that the viewer has been pre conditioned to expect.

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

(iii). Horizontal lines: These lines add width to the garment and decrease the apparent height, for eg. A wide contrast coloured belt shortens the height of the figure by cutting the garment into two segments, however the belt has the effect of slimming the waist line, the self coloured will not shorten the height of the outfit as well as the wearer. Fig

(c) shows a deisgn with horizontal lines dominating.

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

Curved lines: These lines are more romantic by nature and are considered graceful

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

(vi) Zigzag lines: A zigzag is a series of connected diagonal lines. A zigzag forces the eye to shift direction abruptly and repeatedly in an erratic and jerky movement. This type of line is found most often

in fabric design. Because of the eye activity caused by zigzag lines, they tend to increase the apparent mass or size of the area covered by them.

A Visual summary of the illusions created by straight line combinations is found in Fig (1 - 5 ).

Fig. 1: Vertical line appears to lengthen, appears slimming as the eye moves up and down.

Fig. 2: Horizontal line appears to shorten, appears to widen as the eye travels across.

Fig. 3: Diagonal line appears to shorten and widen as the slant is closer to a horizontal.

Fig. 4: Diagonal line appears to lengthen as the slant is closer to a vertical.

Fig. 5: Extended diagonal lines appears to lengthen as the eye continues to move upward.

b) Line movements: The arrangements of vertical, horizontal and oblique lines produce line movements characterized by opposition, transition or radiations opposition; In a design where the vertical line is opposed by a horizontal lines opposing oblique lines are used. Fig (e) shows a design in which the vertical line BBI is opposed by the horizontal line AB. In the design shown in Fig (f) opposing oblique lines are used.

(i) Transition: When one line direction slips smoothly into another, the movement is transitional . eg. Curved lines. Curved lines should not be over done. They are at their best when stiffened by same straight lines, eg: round yoke with vertical pin tucks within it as shown in Fig. (g)

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

c. Interrelationship of Elements of Design.

Understanding the role of space, shape, and form and developing the skill to analyse line direction helps one learn to predict the effect of each design. Because these design elements combine with color and texture to produce all designs, they are important in all areas of creativity.

When applied to clothing selection, the importance of space, shape, form and line becomes obvious. the three dimensional form of the body within the garment creates contour, which give the garment shape,

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

1. Color

Fundamentally, color is used to elicit emotions, boost visual appeal and highlight crucial elements. The colors you choose have an effect on a more visceral level. Sure, choosing two colors for a theme that don't mesh is jarring, but it's the feelings and emotions it draws out for your visitors that will hinder their overall experience.

Warm, active colors like orange and red tend to elicit more vibrant responses. Cool and passive colors like blue and purple are much more pleasant, which is why so many studies show blue is the color of happiness.

You'll want to pay attention to this when choosing colors for your background, additional visual elements and accents, typography and much more. Consider the tone of your site, products, services and what you would like to achieve. If you want to deliver a more relaxing, soothing impression, chill colors like a variety of deep blues will work great. If you want to capture attention, brighter colors are the clear choice, but again, which you use will depend on the attention you generate.

You can read more about using color psychology to increase conversion rate in this detailed article by Neil Patel. I like this emotion wheel by Conversioner to describe the different emotional triggers of colors:

clip_image002

2. Size

Size, as you know, is how small or large an item or element is. When it comes to the elements of design, size is often about a relationship of one item to the others around it. The larger an element is, the more it will stand out visually. Therefore, you can use size to define importance, generate visual interest, attract attention, guide focus almost like a storyline and much more.

If you want to be sure a headline or product title captures a visitor's attention instantly, use a large, attractive font that stands out compared to everything else on the page. This is also a great way to increase conversions without altering your entire design. Your call to action, for instance, can be boosted in size so it stands out from your regular content.

If you aren't familiar with code, it can be intimidating to make changes like these on your own. Fortunately, if your site is running on WordPress, there are plugins that will make changing your heading size a breeze. Try the free plugin Customify.

3. Space

Space is the blank areas around various elements including typography, margins around text and much more. Minimal design strategies favor using more space and putting emphasis on the visual components that do exist. In a way, it keeps a clean interface that helps everything stand out and look, well, beautiful.

Space can be used to separate elements or groups. It can break up text — as is the case with line breaks and new paragraphs — and it can even add visual appeal. More importantly, space gives the viewer's eyes a rest, so to speak. Since it does not include anything important or encompassing to look at, it can also be used to guide the eyes or focus of your audience.

Put enough space around a particular object, image or element, and you've truly defined its importance. It is so crucial, in fact, that it stands on its own among the sea of text and content on your site.

If you use WordPress, look for a theme that includes a page builder. Page builders give you much more control over the sizing and spacing of elements on your landing page. One of my favorites is the theme Salient.

4. Line

Strictly speaking, a line is the mark between two opposite points. As you already know, there are many types of lines, and they come in varying sizes and shapes. You have straight lines, squiggly lines, curved lines, bold lines, thin lines, etc.

Lines — similar to space — are a universal component of modern design. You can use them for a variety of things, ranging from simple to advanced. You can use accent lines to stress a word, phrase or image. You can connect elements together using a single traced line. Of course, it doesn't end there.

The best strategy for boosting conversions with lines is to use them to draw the eye to your CTA or a lead form. In one case study published by ConversionXL, a law firm split tested a number of visual cues

to see which one performed best in eye-tracking studies. An arrow pointing to the lead generation form was the clear winner.

clip_image004

5. Shape

Shape is essentially, the combination of height and width when you break it down. In grade school, and usually even earlier, you started working with these basic building blocks. There are triangles, squares, circles and spheres, hexagons and much more. The odd or less common shapes can be used to attract attention — hence why stop signs are shaped the way they are, in combination with bright red color, of course.

Shapes can be broken down into three essential types: geometric, natural and abstracted.

Geometric: Triangles, squares, rectangles, circles, etc.

Natural: Leaves, animals, trees, people, objects, etc.

Abstracted: Icons, stylizations, graphic representations, symbols, outlines, etc.

You can use shapes to extend the visual appeal of a section, element or area. For example, enclosing a call to action within a button or another container — which is itself a shape — is a great way to capture attention. I like this example from Visual Website Optimizer:

clip_image005

6. Texture

In reality, we know texture as the feel of an item or surface. Is it rough like concrete, or smooth like polished wood? In design, this doesn't quite translate as you cannot actually feel elements of a page or on a screen. However, you can show texture through the look of an item.

The well-known pattern of laid brick, for instance, can be used to add visual depth and interest to a bland, solid color. Sure, it's implied texture, but it works just as effectively, especially when you choose an appropriate style.

You can use textures like brick, concrete and stone to imply strength or reliance. You could use a wood grain style to embellish appearance or elegance. It all comes back to how and where you use the visual textures, and what kind of emotional response that elicits when you view the design.

In one case study, a charity that collected used cell phones applied a texture-rich background to their lead generation form, and it increased donations by 53%. This is a simple trick that can be accomplished with CSS.

clip_image007

7. Value

In marketing, we define value as something that gives back, in a way. What is the inherent value of a product or component?

In design, value is indicated through the lightness or darkness of an area. A gradient — popular in modern design — is one of the most common ways to present value. It usually progresses from dark to light, or solid to transparent.

Like many of the other components here, you can use value or gradients to lead the eye. More importantly, they can be used to emphasize the importance of a particular body or concept. You could place your CTA in the most vibrant section of a gradient, or surround your CTA button in a colored glow to make it stand out.

In the example below, from a concept design by Denis Absullin on Dribbble, you can see a subtle glow around a TA button to add the product to the cart.

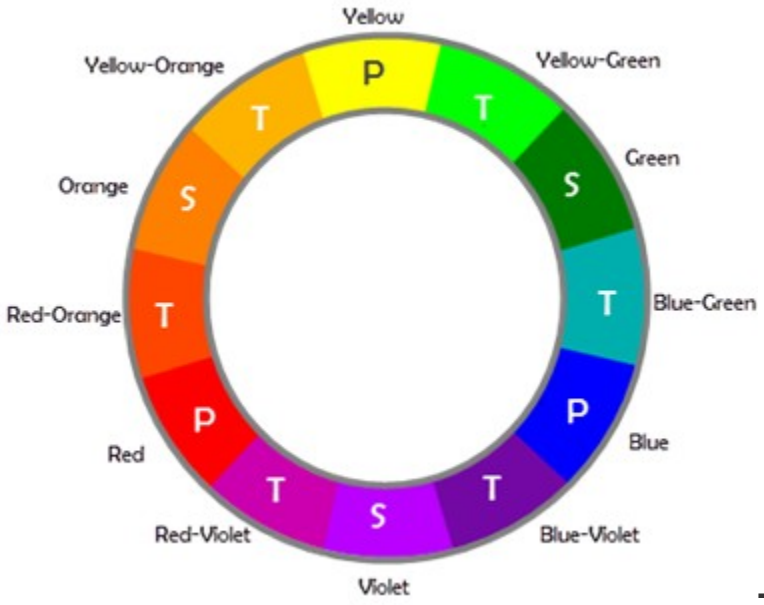
- Three **Primary Colors** (Ps): Red, Yellow, Blue.
- Three Secondary **Colors** (S'): Orange, Green, Violet.
- Six Tertiary **Colors** (Ts): Red-Orange, Yellow-Orange, Yellow-Green, Blue-Green, Blue-Violet, Red-Violet, which are formed by mixing a **primary** with a secondary.

# Color Basics

A color wheel is an illustrative model of color hues around a circle.  It shows the relationships between the primary, secondary, and intermediate/ tertiary colors and helps demonstrate color temperature. Digital teams communicate exact colors through the use of hex codes.

## Understanding the Color Wheel

Many color wheels are shown using 12 colors.  Using this color wheel as an example, it can be read as follows:




- **Three Primary Colors (Ps)**: Red, Yellow, Blue
- **Three Secondary Colors (S')**: Orange, Green, Violet
- **Six Tertiary Colors (Ts)**:  Red-Orange, Yellow-Orange, Yellow-Green, Blue-Green, Blue-Violet, Red-Violet, which are formed by mixing a primary with a secondary

It's important to note that some people add more intermediates, for 24 total named colors, and some color wheels show interior points and circles, which represent color mixtures.

## Color Temperature

The colors on the red side of the wheel are warm; the green side of the wheel has the cooler colors. These color temperature designations are absolute. More subtle color temperature relationships are relative, meaning that each color on the warm side of the wheel can be known as cool, and colors on the cools side of the wheel can be known as warm depending on the relationship to their neighboring color. Colors from the same hue, for instance red, can also be warmer or cooler than one another.

Color temperatures affect us both psychologically and perceptually by helping us determine how objects appear positioned.

| Warm Colors | Cool Colors |
| --- | --- |
|  |  |
| • Warm colors include red, orange, and yellow, and variations of those three colors.<br>• Red and yellow are both primary colors, with orange falling in the middle.<br>• Warm colors appear closer to the observer. | • Cool colors include green, blue, and purple, and variations of those three colors.<br>• Blue is the only primary color within the cool spectrum.<br>• Greens take on some of the attributes of yellow, and purple takes on some of the attributes of red.<br>• They are often more subdued than warm colors.<br>• Cool colors appear farther from the observer. |

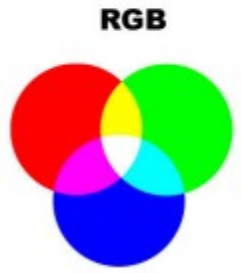
## Neutrals

Neutral colors include black, white, gray, tans, and browns. They’re commonly combined with brighter accent colors but they can also be used on their own in designs. The meanings and impressions of neutral colors depend more so upon the colors around them.

## Color Models: CMYK vs. RGB

There are two models for colors.  They have different purposes and different attributes.  They are as follows:




- **CMYK Color Models**: Stands for cyan, magenta, and yellow. It applies to painting and printing.  The CMYK model is a subtractive model, meaning that colors are created through absorbing wavelengths of visible light. The wavelengths of light that don't get absorbed are reflected, and that reflected light ends up being the color we see.
- **RGB Color Models**: RGB stands for red, green, and blue. It applies to computers, televisions, and electronics. The RGB model is an additive model, meaning that colors are created through light waves that are added together in particular combinations in order to produce colors.

## Hex Codes

To name colors in web design, teams use hexademal code. All hexadermal codes:

- Start with a hash mark (#)

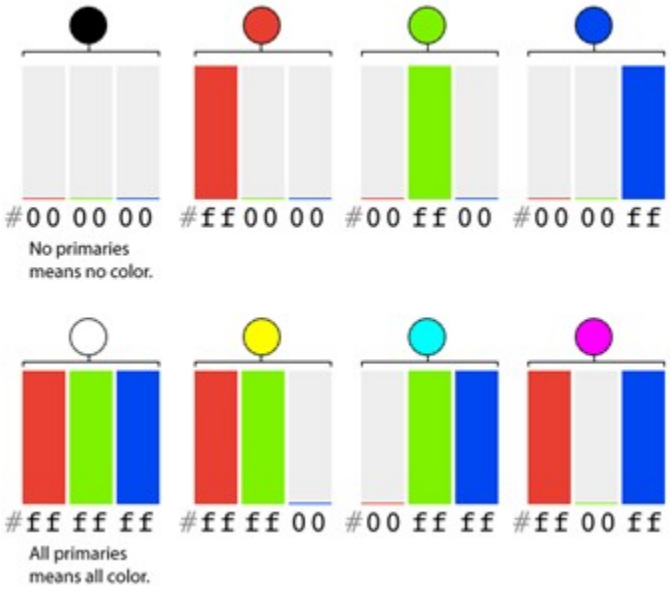



- Consist of three pairs of characters sequenced together (totaling of six characters), with each pair controlling one of the primary additive colors (red, green, blue)
- Those six characters following the hash mark consist of ten numerals (0-9) and/ or six letters (a-f)

It is easy to identify patterns in the hex codes some colors;
see SmashingMagazine's great chart at the right for this. Some things to know include:

- 00 is a lack of primary
- ff is the primary at full strength

To find additive colors, start with black and change each pair to ff:




- #000000 is black (no primaries)
- #**ff**0000 is the brightest red
- #00**ff**00 is the brightest green
- #0000**ff** is the brightest blue

To find subtractive colors, start with white and change each pair to 00:

- #ffffff is white (all primaries
- #**00**ffff is the brightest cyan
- #ff**00**ff is the brightest magenta
- #ffff**00** is the brightest yellow

It is also possible to abbreviate some hex numbers.  For instances #fae expands to #ffaaee and #09b expands to #0099bb.

## Additional Resources

- Color Meaning
- Color Pallets
- Color Theory for Designers, Part 1: The Meaning of Color

- The Code Side of Color
- Color Theory 101: Deconstructing 7 Famous Brands' Color Palettes
- Color
- Color Meanings
- Color Wheel Pro: Color Meaning

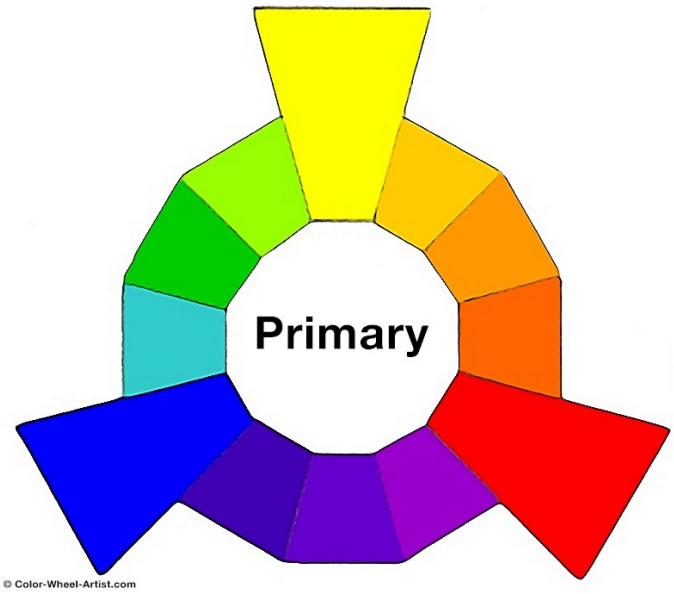
**Primary colors are everywhere** when we take the time to notice. So are **Secondary and Tertiary colors.** As a creative person, you are likely inspired by the colors you see in the world. Without a doubt you might be moved to capture the brilliance in a painting.

But as mentioned in another post, artists work with pigments which are **Subtractive Color.** As a result we **often end up with muddy colors** that don't look anything like we envisioned.

For instance you may want to paint the delicious-looking strawberries above. However, it's **not enough to just use red paint.** You know this of course. However, the trouble begins when you mix in other pigments. Instead of luscious reds, **you may get frustrated because the results are sometimes drab, dirty colors instead.**

Obviously, you want to mix **yummy-looking** colors that almost look good enough to eat. Therefore, you must understand the **root of every paint pigment you use.**

## Primary Colors are Called That for a Reason




First and foremost, the Primary Colors, **Yellow, Red** and **Blue,** are at the top of any color structure. That's because you can think of the three Primaries as the **original parents of all the future generations of colors.**

In Theory, Primary Colors are the root of every other color.

So in other words, you could conceivably mix gazillions of colors with only **three pure Primary pigments** of Yellow, Red and Blue. Of course that's what they teach us in school. However, as I wrote in a **previous Color Wheel post,** color is not an exact science.

The problem is paint pigment **never works like that in real life.** For instance, if you mix **Cadmium Red + Ultramarine Blue,** you'll likely be sadly disappointed. If you were expecting a deep rich Violet (Purple), the resulting Brown will be a total surprise.

To understand why, we need to look at paint pigments. A **Primary Yellow, Red or Blue paint color** usually refers to a paint that **contains only one pigment.** They are unmixed pigments that can't be created by mixing other colors.

Paint is manufactured with organic, mineral and chemical pigments. As a result, **there are many different pure Yellow, Red and Blue** pigment paints available.

In our example above, **Cadmium Red is a warm pure hue, leaning toward Orange**. Blue and Orange are Complementary Colors. **Brown is the neutralized result** we get from mixing Complementary colors. In this case it's pure **Blue +** pure **Orangey/Red.** This result is only great if you actually want a rich Brown.

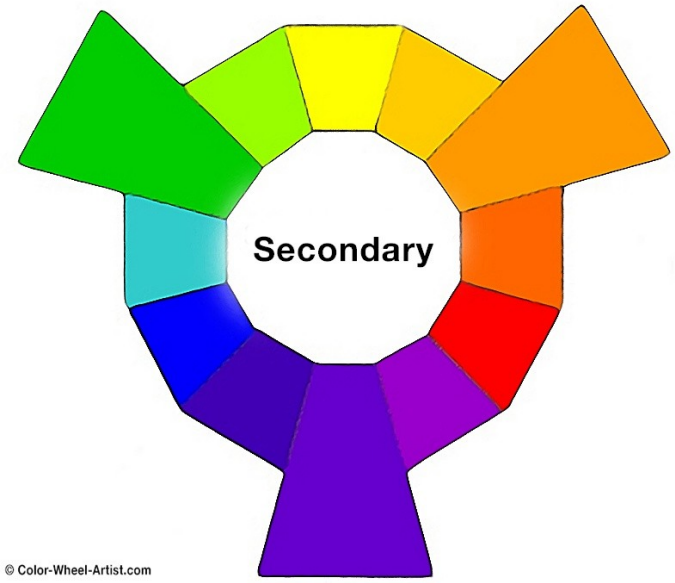
In this example, if you want to mix a rich Purple instead, use a **cool pure Red** such as Quinacridone Red. That's because this pure pigment **leans away from Orange** and mixes **harmoniously with the cool pure Blue.**

## Painting Tips for Primary Colors

* **On the whole, my advice would be to have six Primary Colors in your paint kit.**

* **These would include Yellow, Red and Blue that lean toward the warm side. And in addition it will be helpful to have another set of Yellow, Red and Blue that lean toward the cool side of the color wheel. Just remember to make sure they are unmixed, pure pigments.**

## Secondary Colors are Second in Line



Next come the three Secondary colors, **Orange, Purple** and **Green.** Think of the Secondary colors as **the children of the three Primaries** as shown above.

In color theory we are taught that the Secondary colors are mixed like this:

- Yellow + Red = **ORANGE**
- Red + Blue = **PURPLE**
- Blue + Yellow = **GREEN**

Again as explained earlier, **Color Theory is correct on the surface.** It shows us how colors interact in a perfect world. In other words, it serves as a general **compass to point us in the right direction.**

However, paint color in the real world is another thing entirely. This is why so **many artists think a Color Wheel is useless.** They mix Red and Blue hoping to get Purple. But if you refer back to my example in the previous section where we mixed Cadmium Red with Ultramarine Blue, you'll see the **theory doesn't seem to work.** In this case, the result is an unexpected Brown. Before long, their Color Wheel gets put aside, never to be looked at again.

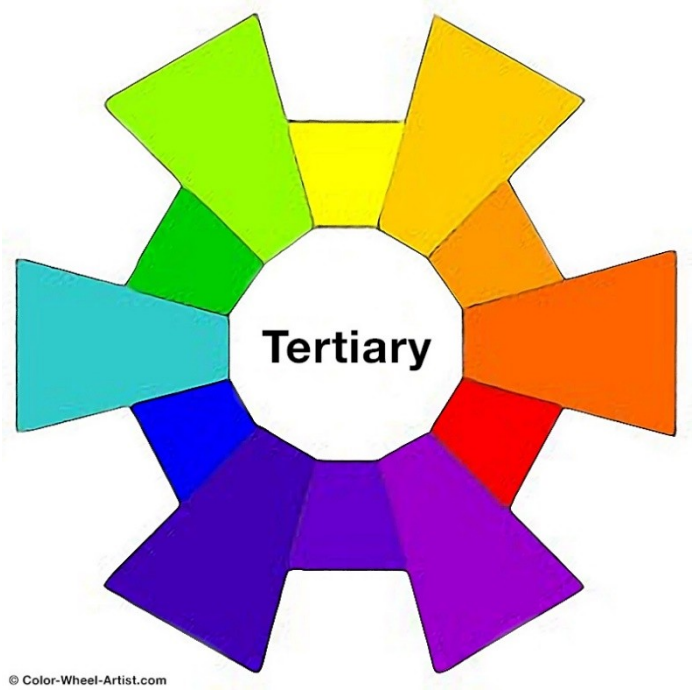
We'll be exploring the inner **secrets of a color wheel** in a later post. In the meantime concentrate on getting a basic understanding the Primary Colors, Secondary and Tertiary colors.

## Painting Tips for Secondary Colors

* **In general, it's not really necessary to buy Secondary colors. Yes, it's true that you can mix a really broad range of Secondary colors from three warm and three cool Primary colors. But in practice, that's sometimes too much work when you're painting.**

* **My suggestion is to have at least one pure Orange, one pure Purple and one pure Green on hand. If your budget allows it, you can get three that lean toward cool and three that lean toward warm. Again, let me remind you. Your mixtures will be cleaner and much easier to control if you stick with pure pigment paint color.**

## Tertiary Colors are the In-Betweens




Finally the remaining six colors are referred to as the Tertiary Colors. Think of these as the **six grandchildren of the Primary Colors.**

Again, Color Theory teaches us that each Tertiary color is the result of **one Primary Color mixed with one of its nearest Secondary** colors. Therefore we end up with a new color somewhere in between.

- Yellow + Orange = **YELLOW/ORANGE**
- Red + Orange = **RED/ORANGE**
- Red + Purple = **RED/PURPLE**
- Blue + Purple = **BLUE/PURPLE**
- Blue + Green = **BLUE/GREEN**
- Yellow + Green = **YELLOW/GREEN**

As explained earlier, in practical terms, we artists can quickly find ourselves mixing truly ugly colors. If we follow the theory too literally, a lot of paint will get thrown away. It's always best to try out some test samples first.

## Painting Tips for Tertiary Colors

* **Tertiary colors are truly gorgeous because of their complexity. When you go to an art supply store and see the beautiful array of colors, it's so tempting to buy lots.**

* **Don't let yourself be seduced. Pre-mixed Tertiary paint colors can easily get you into a huge dull mess of clashing colors. Unless you totally understand how pigments will react to each other, it's best to stick with pure Primary colors and pure Secondary colors.**

* **If you're adventurous, go ahead and buy yourself some Tertiary colors. Just be sure they contain as few pigments as possible. There should be no more than two pigments in the mixture, a Primary Color and a Secondary Color. To be clear, when more pigments are used, the chance of them clashing with your other colors rises about 80%.**

## Let's Review What You Learned

- **Primary Yellow, Primary Red** and **Primary Blue** are considered the **root** of every other color. They are colors that can't be created by a mixture.
- The **Secondary** colors are **Orange, Purple** and **Green.** They are the 'children' of each **pair of Primary colors.**
- **Tertiary** colors are the **six 'in-between'** colors. They are each a mixture of **one Primary Color plus its nearest Secondary**. They are complex and seductive. But beware!
- If you're a painter and want clear, harmonious colors when you paint, **keep it simple.** Work with **3 pure warm Primary** Colors + **3 pure cool Primary** Colors.
- You can paint faster and more spontaneously, if you **add a few Secondary pigments** to your palette. As I said before, try to find a single **pigment Orange** + a single **pigment Purple** + a single **pigment Green.**

**BONUS TIP:** Always get familiar with how your paint palette mixes before you start painting. Take a little time to **do some mixing tests.**

SUMMARY

| | | | | |
|---|---|---|---|---|
| YELLOW | + | BLUE | = | GREEN |
| BLUE | + | RED | = | PURPLE |

| RED | + | YELLOW | = | |
|---|---|---|---|---|

# 2 colours and the emotions they evoke

By Jerry Cao 4 months ago

A web designer's guide to using colour to target key audiences.



(Image credit: Getty Images)

Did you know that one of the lesser-known ways to invoke emotion is through colour? It's well-known that poetry can make people swoon and a shocking image can enrage people into action, but the right use of colour can be equally as powerful. You only need to look at the world around you to see, and feel, its impact.

Colours elicit unique responses in the viewer, and a savvy web designer (or any visual professional, actually) will be well versed in the effect of each individual colour, plus how and when to use each.

The discipline of colour theory may be broad (find out more about colour theory here), this article will teach you the fundamentals in a single quick-reference source. However, before we delve into the emotional nuances of 12 separate colours, we need to add a quick note about vibrancy. Want more? Explore these uses of colour in branding.

Different shades of the same colour will also have different effects

Simply put, a colour's vibrancy is how dark or light it is. The tricky part about vibrancy is that, just like each individual colour has its own properties, so does each shade of the same colour.

While light green and dark green have more in common than green and purple, they will still have smaller, more subtly different effects on the user.

Below, we'll explain all the noteworthy differences between a colour's shades, and consider their impact on web design. As a general rule, though, brighter shades tend to be more energetic, while darker shades feel more relaxing. The brighter shades of calls-to-action attract the eye, while the darker shades in backgrounds help create an immersive effect.

Now on to the impact of different colours on viewers...

# 01. Red

Used here, red is playful and stimulating

**Passionate, aggressive, important**

As a dominating colour, red adds gravity and heightened awareness – quite literally, as the colour increases blood circulation, breathing rates, and metabolism.

Red can take on a variety of meanings, associated with both love and war, but the unifying factor in all meanings is a sense of importance. Think of the red carpet.

Red is a colour best used cautiously. Its knack for attracting attention makes it a priceless tool for designers, but used excessively it will inhibit relaxation. Lighter shades emphasise the energetic aspects of red – including youthfulness – while darker shades emphasise power, and even durability, such as a brick wall.

The landing page for the game design company Playtika has an aggressive but potent flair. Playful and stimulating, the red suits the cheetah logo – a powerful icon itself, softened by its cartoonish qualities and anthropomorphic smile.

# 02. Orange

Epic uses orange as a highlight colour on its website (Image credit: Epic)

**Playful, energetic, cheap**

Sharing red's energising aspects, but to a safer degree, orange is a good way to add excitement to a site without severity. It is generally playful, and some claim it creates haste and plays on impulse. It can even signify health, suggesting vitality and vibrance.

Creative agency Epic uses orange as the highlight colour on its website. The choice emphasises the team's playfulness and youthfulness.

## 03. Yellow

Yellow can be revitalising or jarring (Image credit: post-it)

**Happy, friendly, warning**

Yellow is a strange colour: it is often associated with happiness, but also activates the anxiety centre of the brain. Like red and orange, it's able to stimulate and revitalise – it's the colour of warning signs and taxis – but use bright yellow sparingly because of the potential negative connotations.

Lighter shades play on the happiness aspects, reminding users of summer and the sun. Darker shades, including gold, add more weight and give a sense of antiquity.

The bright yellow-dominated colour palette on the Post-it website is synonymous with the product itself. It creates an energetic vibe, and is instantly recognisable as that particular brand.

## 04. Green

The green scheme emphasises Sanhok's outdoor adventure

**Natural, stable, prosperous**

Green mostly represents the environment and outdoors, for obvious reasons, making it the clear choice to suggest nature and an organic quality.

As the bridge between stimulating, warm colours (red, orange, yellow) and calming, cool colours (blue, purple), green is the most balanced of colours, lending it an air of stability. It's also a popular choice as an accent or for calls-to-action because it stands out, but more softly than the warmer colours. In Western culture, it also represents money and financial safety.

The site for game Sanhok uses green to emphasise being outdoors and in the wild, with different subtle hues used throughout.

## 05. Blue

Advertisement

Image courtesy of Evolve Wealth

**Serene, trustworthy, inviting**

Blue is one of the most popular colours in web design – and for good reason. You see blue on a lot of websites because, to put it simply, it is the colour of trust. Blue is the colour of calm and serenity, and as such inspires security and a feeling of safety.

For this reason, blue is a colour often used by banks: CitiBank, Chase, Capital One and Barclays, for example, all use blue. However the calming effects also make blue a friendly and inviting colour, which explains its adoption by Facebook and Twitter.

As if that weren't reason enough to use it, blue is also incredibly versatile; its vibrancy has more drastic effects than other colours. Light blue is the colour of water and the sky, so it generally has a refreshing and free feeling – and can be even energising if bright enough, while still retaining that reliable calm.

Darker blues tend to be more sombre, heightening the security aspects, which makes them an excellent choice for professionalism. Trust is essential for financial advisors such as Evolve Wealth, so most of its site is designed in varying hues of blue.

All this comes at a small price, though: blue shouldn't be used for food-related sites. Because blue foods aren't common in the wild, studies show that the colour actually acts as an appetite suppressant.

# 06. Purple

Purple has links to wealth and luxury (Image credit: Woo)

**Luxurious, mysterious, romantic**

Long associated with royalty, purple creates an air of luxury, even decadence. Using a purple dominantly is a quick way to create a sense of elegance or high-end appeal, even if your product is budget-minded (an 'expensive' effect that's quite the opposite of orange).

Lighter shades of purple – especially lavender – bring to mind spring and romance. Darker shades add more mystery, and can even symbolise creativity. Darkening the shade will also turn the romantic elements more sensual.

Advertisement

With its ties to personal wealth, WooCommerce chose purple as the colour to represent its WooView app, playing on themes like royalty and panache that fit the function of checking how much money you're making in real time.
**Next page: 6 more colours and the effects they have on viewers**

## 07. Pink

Pink creates a soft mood on this renting website

**Feminine, young, innocent**

Pink is a specialist colour that won't work for a lot of websites, but will work perfectly with the right audience. Because most people interpret pink as feminine, the colour is popular for targeting female users. However, don't overdo the pink-femininity connection, or else you're walking a fine line between appealing to users and pandering to gender stereotypes.

Its links with childhood and with sugary treats give pink a sweet, sometimes innocent appeal (not surprisingly a self-perpetuating cycle). It is also traditionally used with love and romantic themes, alongside red and light purple.

Rental service Rentberry's website uses pink as its key colour. In this case, it creates a soft, safe vibe, and intentionally distances itself from more corporate, traditional rental services.

## 08. Brown

B&O Play uses brown in an unexpected way on its site

**Earthy, sturdy, rustic**

While not a popular choice in web design, brown can, under the right circumstances, be effective nonetheless. As the colour associated with the earth and trees, brown can add an outdoorsy feel, maximised by a pairing with green. The tree connotations also give a sturdy and reliable feeling.

In web design, brown is often used in conjunction with wood texturing, giving the same old-fashioned and rustic atmosphere of a wooden cabin.

Advertisement

While tech websites are typically dominated by stronger, bolder shades, the microsite for B&O Play used brown to great effect. The muted tones suggest a classier, more human side to the technology on offer. Natural connotations also remain: wood and leather feature prominently in the hero video, while a marble effect is used in the background.

# 09. Black

Black creates a real impact on Cartelle's website

**Powerful, sophisticated, edgy**

As the strongest of all colours, black is often used only sparingly – such as for text – but it works quite well as a primary colour element (like for backgrounds). Much like purple, black adds an air of sophistication and elegance, and also mystery, though with much bolder confidence.

The heavy use of black for the Cartelle creative agency creates unquestionable impact on its homepage and subsequent animations.

# 10. White

An off-white background keeps the focus on the shoes here

**Clean, virtuous, healthy**

Literally the opposite of black, white pairs well with just about anything, making it ideal as a secondary colour. In a supporting role, white draws out the elements of more stimulating colours, and can even guide your user's attention if you know how to use it (check out UXPin's Zen of White Space in Web UI Design guide to learn more).

As a primary colour, though, white gives off an impression that is both clean and chaste. White has that 'spotless' feeling that, for the right site, feels completely effortless. Its association with purity can make it seem virtuous, but also sterile and cold.

Advertisement

To soften this feeling of sterility, some web designers will tend towards an ivory or cream instead. These offshoots of white are softer and even less noticeable, but with the same minimalist and complementary aspects. They are the more comforting and less stark alternatives to white.

The shoe company ETQ uses a dominant off-white background to keep the users' attention where it belongs: on the shoes.

# 11. Grey

Grey is used sensitively on the Galvan Mobili website

**Neutral, formal, gloomy**

As the intermediary between black and white, grey exudes neutrality, or a lack of any particular sensation. However, in the hands of an expert, this intermediary position can be a powerful tool.

By varying the vibrancy, grey can take on the properties of either black or white – attention grabbing or repelling – to specific degrees. That means if black is too powerful for your design, try dark grey. If white is too bland, try light grey.

On its own, though, grey is rich with individual characteristics. It is the colour of formality, so sites aiming to look traditional or professional tend to favour it. It can also give a depressing vibe, as it's the colour of gloomy, rainy days. When used dominantly, it can be somewhat subduing, for better or worse.

You can tell the Italian furniture company Galvan Mobili uses grey well because you don't even notice it. The grey background gives a professional air, and keeps attention on the pictures and bright red logo.

## 12. Beige

Beige here creates a calming backdrop

**Accentuates surrounding colours**

Beige may not be a primary colour, but it's worth mentioning because of its accentuating effects: it takes on the characteristics of the colours around it. While dull on its own, its enhancing effects make it a powerful choice as a background or secondary colour.

The use of beige for the aptly named Tokyo restaurant Beige Alain Ducasse creates a calming, comfortable backdrop to the more relevant elements such as clickable text and photos.

# Secondary colours

**Secondary** colours are made by mixing equal amounts of primary colours together:

- **Blue** and **red** mixed together make **purple**
- **Yellow** and **red** mixed together make **orange**
- **Blue** and **yellow** mixed together make **green**

Purple, orange and green are **secondary** colours. On the colour wheel, each secondary colour sits halfway between the two primary colours it is mixed from.

Franz Marc uses primary and secondary colours in *The Tiger*.

The tiger is made from bold yellow and black shapes. They stand out against the blue leaf shapes in the bottom left of frame and the purple areas to the top right.

There is a closer harmony with the green and orange – both secondary colours that contain yellow. These colour relationships and the similar shapes used suggest the tiger is at home in its surroundings.

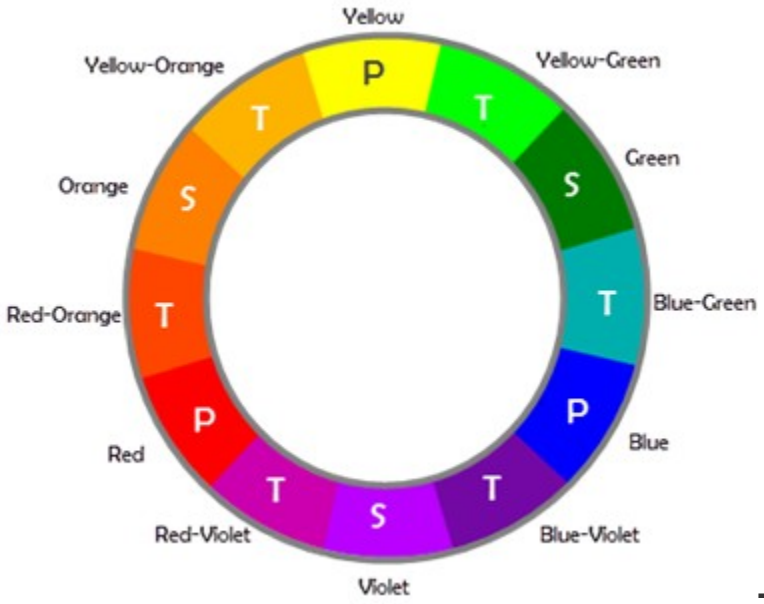


# Color Basics

A color wheel is an illustrative model of color hues around a circle.  It shows the relationships between the primary, secondary, and intermediate/ tertiary colors and helps demonstrate color temperature. Digital teams communicate exact colors through the use of hex codes.

## Understanding the Color Wheel

Many color wheels are shown using 12 colors.  Using this color wheel as an example, it can be read as follows:




- **Three Primary Colors (Ps)**: Red, Yellow, Blue
- **Three Secondary Colors (S')**: Orange, Green, Violet
- **Six Tertiary Colors (Ts)**: Red-Orange, Yellow-Orange, Yellow-Green, Blue-Green, Blue-Violet, Red-Violet, which are formed by mixing a primary with a secondary

It's important to note that some people add more intermediates, for 24 total named colors, and some color wheels show interior points and circles, which represent color mixtures.

## Color Temperature

The colors on the red side of the wheel are warm; the green side of the wheel has the cooler colors. These color temperature designations are absolute. More subtle color temperature relationships are relative, meaning that each color on the warm side of the wheel can be known as cool, and colors on the cools side of the wheel can be known as warm depending on the relationship to their neighboring color. Colors from the same hue, for instance red, can also be warmer or cooler than one another.

Color temperatures affect us both psychologically and perceptually by helping us determine how objects appear positioned.

| Warm Colors | Cool Colors |
| --- | --- |



- Warm colors include red, orange, and yellow, and variations of those three colors.
- Red and yellow are both primary colors, with orange falling in the middle.
- Warm colors appear closer to the observer.



- Cool colors include green, blue, and purple, and variations of those three colors.
- Blue is the only primary color within the cool spectrum.
- Greens take on some of the attributes of yellow, and purple takes on some of the attributes of red.
- They are often more subdued than warm colors.
- Cool colors appear farther from the observer.

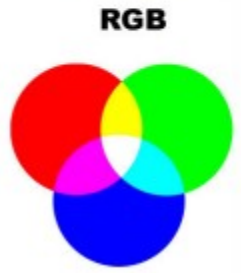
## Neutrals

Neutral colors include black, white, gray, tans, and browns. They're commonly combined with brighter accent colors but they can also be used on their own in designs. The meanings and impressions of neutral colors depend more so upon the colors around them.

## Color Models: CMYK vs. RGB

There are two models for colors.  They have different purposes and different attributes.  They are as follows:




- **CMYK Color Models**: Stands for cyan, magenta, and yellow. It applies to painting and printing.  The CMYK model is a subtractive model, meaning that colors are created through absorbing wavelengths of visible light. The wavelengths of light that don't get absorbed are reflected, and that reflected light ends up being the color we see.
- **RGB Color Models**: RGB stands for red, green, and blue. It applies to computers, televisions, and electronics. The RGB model is an additive model, meaning that colors are created through light waves that are added together in particular combinations in order to produce colors.

## Hex Codes

To name colors in web design, teams use hexademal code. All hexadermal codes:

- Start with a hash mark (#)

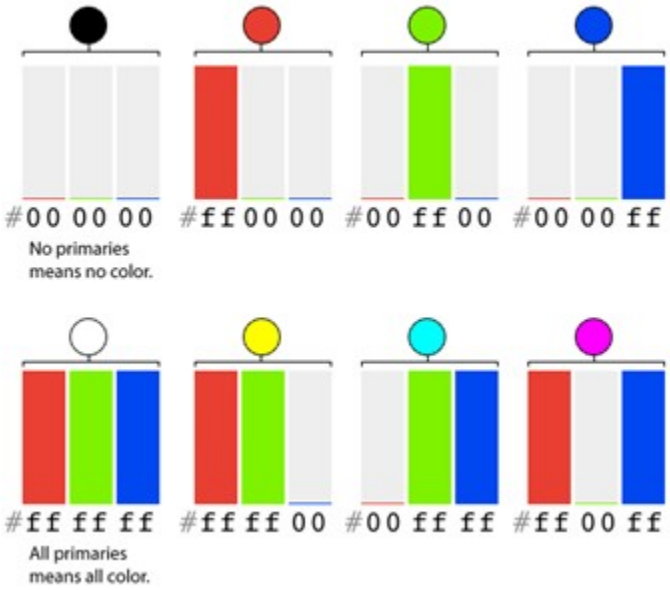



- Consist of three pairs of characters sequenced together (totaling of six characters), with each pair controlling one of the primary additive colors (red, green, blue)
- Those six characters following the hash mark consist of ten numerals (0-9) and/ or six letters (a-f)

It is easy to identify patterns in the hex codes some colors;
see SmashingMagazine's great chart at the right for this. Some things to know include:

- 00 is a lack of primary
- ff is the primary at full strength

To find additive colors, start with black and change each pair to ff:




- #000000 is black (no primaries)
- #**ff**0000 is the brightest red
- #00**ff**00 is the brightest green
- #0000**ff** is the brightest blue

To find subtractive colors, start with white and change each pair to 00:

- #ffffff is white (all primaries
- #**00**ffff is the brightest cyan
- #ff**00**ff is the brightest magenta
- #ffff**00** is the brightest yellow

It is also possible to abbreviate some hex numbers.  For instances #fae expands to #ffaaee and #09b expands to #0099bb.

## Additional Resources

- Color Meaning
- Color Pallets
- Color Theory for Designers, Part 1: The Meaning of Color

- The Code Side of Color
- Color Theory 101: Deconstructing 7 Famous Brands' Color Palettes
- Color
- Color Meanings
- Color Wheel Pro: Color Meaning

## Some Positive and negative aspects of the colour Violet

| positive aspects of this colour | negative aspects of this colour |
|---|---|
| Reverence for all life | Feelings of superiority |
| Outstanding in their chosen job | Flaunt power |
| Great mental powers | Morbid interest in black magic or Spiritual awareness |
| Humanitarians | No concern for others |
| Pure idealists | Fanatics |
| Self sacrificing | Lack of contact with reality |
| Kind and just | |

The **three** additive **primary colours** are red, green, and blue; this means that, by additively **mixing** the **colours** red, green, and blue in varying amounts, almost all other **colours** can be **produced**, and, when the **three** primaries are added together in **equal** amounts, white is **produced**.

By convention, the **three primary colors** in additive mixing are red, green, and blue. In the absence of light of any **color**, the result is black. If all **three primary colors** of light are **mixed** in equal proportions, the result is neutral (gray or white). When the red and green lights **mix**, the result is yellow.

## What are Management Skills?

Management skills can be defined as certain attributes or abilities that an executive should possess in order to fulfill specific tasks in an organization. They include the capacity to perform executive duties in an organization while avoiding crisis situations and promptly solving problems when they occur. Management skills can be developed through learning and practical experience as a manager. The skills help the manager to relate with their fellow co-workers and know how to deal well with their subordinates, which allows for the easy flow of activities in the organization.



Good management skills are vital for any organization to succeed and achieve its goals and objectives. A manager who fosters good management skills is able to propel the company’s mission and vision or business goals forward with fewer hurdles and objections from internal and external sources.

Management and leadership skills are often used interchangeably as they both involve planning, decision-making, problem-solving, communication, delegation, and time management. Good managers are almost always good leaders as well.

In addition to leading, a critical role of a manager is to also ensure that all parts of the organization are functioning cohesively. Without such integration, several issues can arise and failure is bound to happen. Management skills are crucial for various positions and at different levels of a company, from top leadership to intermediate supervisors to first-level managers.

## Types of Management Skills

According to American social and organizational psychologist Robert Katz, the three basic types of management skills include:

### 1. Technical Skills

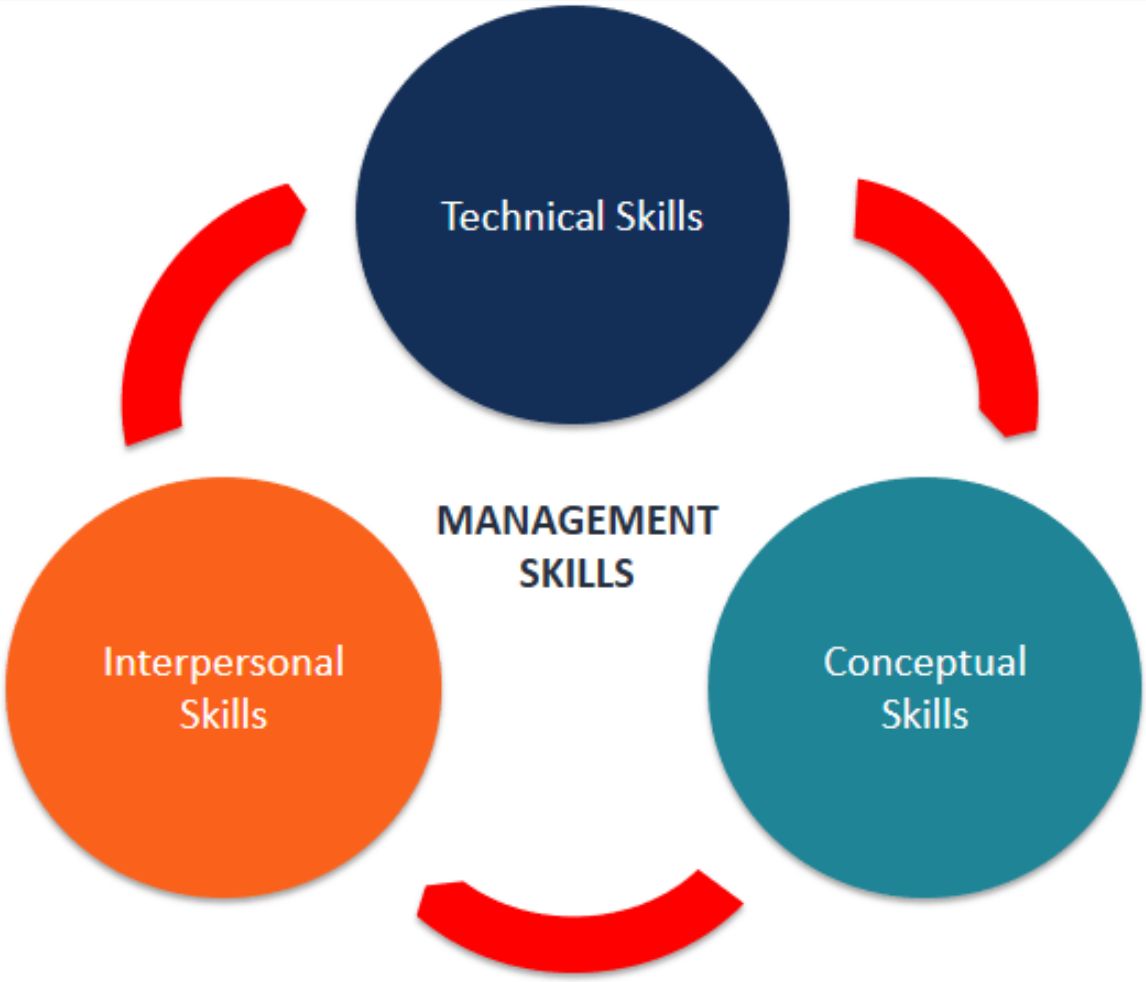
Technical skills involve skills that give the managers the ability and the knowledge to use a variety of techniques to achieve their objectives. These skills not only involve operating machines and software, production tools, and pieces of equipment but also the skills needed to boost sales, design different types of products and services, and market the services and the products.

### 2. Conceptual Skills

These involve the skills managers present in terms of the knowledge and ability for abstract thinking and formulating ideas. The manager is able to see an entire concept, analyze and diagnose a problem, and find creative solutions. This helps the manager to effectively predict hurdles their department or the business as a whole may face.

### 3. Human or Interpersonal Skills

The human or the interpersonal skills are the skills that present the managers' ability to interact, work or relate effectively with people. These skills enable the managers to make use of human potential in the company and motivate the employees for better results.




## Examples of Management Skills

There is a wide range of skills that management should possess to run an organization effectively and efficiently. The following are six essential management skills that any manager ought to possess for them to perform their duties:

### 1. Planning

Planning is a vital aspect within an organization. It refers to one’s ability to organize activities in line with set guidelines while still remaining within the limits of the available resources such as time, money, and labor. It is also the process of formulating a set of actions or one or more strategies to pursue and achieve certain goals or objectives with the available resources.

The planning process includes identifying and setting achievable goals, developing necessary strategies, and outlining the tasks and schedules on how to achieve the set goals. Without a good plan, little can be achieved.

### 2. Communication

Possessing great communication skills is crucial for a manager. It can determine how well information is shared throughout a team, ensuring that the group acts as a unified workforce. How well a manager communicates with the rest of his/her team also determines how well outlined procedures can be followed, how well the tasks and activities can be completed, and thus, how successful an organization will be.

Communication involves the flow of information within the organization, whether formal or informal, verbal or written, vertical or horizontal, and it facilitates smooth functioning of the organization. Clearly established communication channels in an organization allow the manager to collaborate with the team, prevent conflicts, and resolve issues as they arise. A manager with good communication skills can relate well with the employees and thus, be able to achieve the company’s set goals and objectives easily.

### 3. Decision-making

Another vital management skill is decision-making. Managers make numerous decisions, whether knowingly or not, and making decisions is a key component in a manager’s success. Making proper and right decisions results in the success of the organization, while poor or bad decisions may lead to failure or poor performance.

For the organization to run effectively and smoothly, clear and right decisions should be made. A manager must be accountable for every decision that they make and also be willing to take responsibility for the results of their decisions. A good manager needs to possess great decision-making skills, as it often dictates his/her success in achieving organizational objectives.

### 4. Delegation

Delegation is another key management skill. Delegation is the act of passing on work-related tasks and/or authorities to other employees or subordinates. It involves the process of allowing your tasks or those of your employees to be reassigned or reallocated to other employees depending on current workloads. A manager with good delegation skills is able to effectively and efficiently reassign tasks and give authority to the right employees. When delegation is carried out effectively, it helps facilitate efficient task completion.

Delegation helps the manager to avoid wastage of time, optimizes productivity, and ensures responsibility and accountability on the part of employees. Every manager must have good delegation abilities to achieve optimal results and accomplish the required productivity results.

### 5. Problem-solving

Problem-solving is another essential skill. A good manager must have the ability to tackle and solve the frequent problems that can arise in a typical workday. Problem-solving in management involves identifying a certain problem or situation and then finding the best way to handle the problem and get the best solution. It is the ability to sort things out even when the prevailing conditions are not right.

When it is clear that a manager has great problem-solving skills, it differentiates him/her from the rest of the team and gives subordinates confidence in his/her managerial skills.

### 6. Motivating

The ability to motivate is another important skill in an organization. Motivation helps bring forth a desired behavior or response from the employees or certain stakeholders. There are numerous motivation tactics that managers can use, and choosing the right ones can depend on characteristics such as company and team culture, team personalities, and more. There are two primary types of motivation that a manager can use. These are intrinsic and extrinsic motivation.

## Bottom Line

Management skills are a collection of abilities that include things such as business planning, decision-making, problem-solving, communication, delegation, and time management. While different roles and organizations require the use of various skill sets, management skills help a professional stand out and excel no matter what their level. In top management, these skills are essential to run an organization well and achieve desired business objectives.

## Additional Resources

Thank you for reading CFI's guide to management skills. CFI is a leading provider of career resources for finance professionals. To continue learning and advancing your career, the additional resources below will be helpful:

- Adaptive Leadership
- Crisis Management
- Interpersonal Skills
- Leadership Traits

**Gerber Technology** (GT) is the largest business of GSI (accounting for 2/3 of revenues). ... **Gerber's** Yunique Solutions business, acquired by **Gerber** in Dec. 2009, and based in New York City, offers YuniquePLM product lifecycle management software.

**Lectra** (EPA:LSS Euronext Paris) is a technology company headquartered in Paris, France. It operates in 34 countries with 34 subsidiaries. **Lectra** specializes in CAD software and CAM cutting-room systems for industries using soft material such as leather and textiles.

**modaris**Deliver products of exceptional quality and fit by revamping your product development and patternmaking process with the most widely used 2D and 3D patternmaking, grading and prototyping solutions on the market.

Your color preferences why buying items might say something about the type of image you may be trying to project. Color preferences, from the clothes you wear to the car you drive, can sometimes make a statement about how we want other people to perceive us. Other factors such as age and gender can also influence the color choices we make.

- **White**: As many of our readers have suggested, the color white can feel fresh and clean. The color is often used to evoke a sense of youth and modernity.
- **Black**: Our readers often describe black as a "powerful" color, which might be the reason why black is the most popular color for luxury vehicles. People often describe the color as sexy, powerful, mysterious, and even ominous.
- **Silver**: It's the third most popular color for vehicles and linked to a sense of innovation and modernity. High tech products are often silver, so the color is often linked to things that are new, modern, and cutting-edge.
- **Red**: Dreaming of a red vehicle? Red is a bold, attention-getting color, so preferring this type of car might mean you want to project an image of power, action, and confidence.
- **Blue**: People often describe blue as the color of stability and safety. Driving a blue car or SUV might indicate that you are dependable and trustworthy.
- **Yellow**: According to the experts, driving a yellow vehicle might mean that you are a happy person in general and perhaps a bit more willing than the average person to take risks.
- **Gray**: The experts suggest that people who drive gray cars don't want to stand out and instead prefer something a bit more subtle.

Of course, the color selections we make are often influenced by factors including price, selection, and other practical concerns. Not only that, but color preferences can also change in time.[7]

A person might prefer brighter, more attention-getting colors when they are younger, but find themselves drawn to more traditional colors as they grow older. The personality of the buyer can play an important role in color selection, but buyers are often heavily influenced by factors such as price as well as availability.

For example, purchasing a white vehicle might be less about wanting people to think that you are young and modern and more about the climate you live in; people who live in hot climates typically prefer light-colored vehicles over dark ones.

## Flow Chart of Garments Manufacturing Process / Technology:

A basic garment manufacturing flow chart is presented below:

Design

↓

Pattern Making

↓

Fit Sample Making

↓

Production Pattern Making

↓

Grading

↓

Marker Making

↓

**Fabric Spreading**

↓

Fabric Cutting

↓

Cutting Parts Sorting or Bundling

↓

Sewing

↓

Garments Inspection

↓

Garments Ironing and Finishing

↓

Final Inspection

↓

Garments Packing

↓

Cartooning

↓

Shipment

***Each process of garments manufacturing flow chart is discussed in the below with the details:***

**1. Design:**
Design is provided by the buyer. After placing an order buyer send the technical sheet and art-work of an order to the merchandiser. This process is done both manually or by using the computer.

**2. Pattern Making:**
By following the technical sheet and art-work, the pattern of each garment style should be made. It's done both manually and by using a computerized method.

**3. Fit Sample Making:**
The main target of making a fit sample is to follow the detailed instruction about the style of that garment. After making it's sent to the buyer to rectify. It's done manually.

**4. Production Pattern Making:**
For bulk production, allowance is added here with net dimension. Production Pattern Making is done both manually and by using the computer.

**5. Grading:**
During an order confirmation, the buyer suggests the size ratio of that order. So that order should be graded according to the buyer's instruction. Grading is done manually or by using the computer.

**6. Marker Making:**
Marker is a very thin paper that contains all the parts of a particular garment. To make the cutting process easy, it's must be needed. Marker making process can be done both manually and by using the computer.

**7. Fabric Spreading:**
To cut the fabric properly fabric is spread inlay form. Fabric Spreading is done manually or by using a computerized method.

**8. Fabric Cutting:**
Fabrics have to cut here according to the marker of garments. The fabric **Cutting** process is done by using a manual method or computerized method.

**9. Cutting Parts Sorting or Bundling:**
Here, cutting parts have to sort out or make bundling to send these easily into the next process. This process is done manually.

**10. Sewing:**
All the parts of a garment are joined here to make a complete garment. The sewing process is done manually.

**11. Garments Inspection:**
After completing sewing, inspection should be done here to make fault free garments. Garments Inspection is done by using the manual method.

**12. Garments Ironing and Finishing:**
Here garments are treated by steam; also required finishing should be completed here. This process is done by using the manual method.

**13. Final Inspection:**
Finally, the complete garments are inspected here according to the buyer's specification. Final Inspection is done by manual method.

**14. Garments Packing:**
Complete garments are packed here by using the buyer's instructed poly bag. Garments packing are done by using the manual method.

**15. Cartooning:**
To minimize the damages of garments, all the garments have to cartooned by maintaining buyers' instruction. This process is done manually.

**16. Shipment:**
After completing all the required processes it's finally sent to the buyer.

# Bias

Bias: **A slanting or diagonal line cut or sewn across the weave of the cloth**.
100 Multiple Choice Questions
(Answers are given below of article)
1. Pattern making is basically divided in to a)..... b).....
2. ..... is the basic pattern that is used for all adaptions.
3. The block pattern is placed (or) wheeled on to pattern paper to produce the .....
4. A garment is a ..... product
a) Two Dimensional b) Three Dimensional
c) Four Dimensional d) None above
5. Pattern is a replica or a garment (say True / False)
6. Black pattern does not included seam allawance, in lays and hem allawance. (say True / False)
7. A system of pattern making deperds on a series figure measurement to complete the paper pattern.
a) Trueing b) Basic pattern set
c) pattern drathing d) pattern draping
8. A two - dimensional piece or fabric draped around a form, a figure conferming to its shape creating a three - dimensional fabric pattern.

a) Drafting or pattern b) pattern draping
c) Trueing d) set of pattern
9. A 5 - piece pattern set, consisting of a front / back / sleeve and skirt front, back is called
a) Drafting b) Draping
c) Trueing d) Basic pattern set
10. ..... is the measurement added to the patterns and line for comfort
a) Test - fit b) Ease
c) Figure balance d) Fabric balance
11. A muslin garments cut from a first pattern is called.....
a) Sample b) Template
c) Test - fit d) Dress
12. ..... a wedge - shape cutout in a pattern used as a means of controlling the fit of the garment
a) Ease b) Garment balance
c) Tracing d) Dart
13. The direction in which the yarn is passing in the fabric.
a) Fibre b) Grain
c) Length wise d) Cross wise
14. Yarns parallel to selvedge and at right angler to the cross grain of woven fabric is called .....
a) Cross Grain b) Balance live
c) Bias (45') d) Length Grain
15. Finding and adjusting the difference between joining pattern parts to improve the hang and fit of the garment is called .....
a) Garment balance b) Bicep line
c) Pattern balance d) Grain
16. ..... is the process of matching two components to establish, grain line, scane length and pattern is introduced
a) Garment balance b) Pattern balance
c) Fabric balance d) Grain
17. A slanting or diagonal line cut or sewn across the weave of the cloth is called .....
a) Selvedge b) Bias
c) Bowing d) Muslin
18. ..... is a line drawn on each pattern piece to indicate low the pattern should the aligned with the length grain of the fabric
a) True bias b) Thick line
c) Pattern grain line d) Arrows
19. ..... at the top or the bottom indicates that the pattern must be placed in one direction only
a) Vertical b) Cross - wise
c) Grain line with arrows d) Horizontal
20. ..... grain line is drawn parallel with center for garments to be cut on straight grain
a) Cross wise b) Vertical
c) Horizontal d) Bias
21. Garment cutting and manufacturing is based on .....

a) Measurements b) Fit
c) Style d) Fullness
22. The study or man and his measurement is called .....
a) Anatomy b) Anthropology
c) Anthropometry d) Architecture
23. Drafting of pattern making is one of the ..... methods of garment making.
24. Draping is the .....method used in fashion industry
25. To reduce or enlarge a given size pattern technique is called .....
26. Seam allowance added pattern making is called .....
27. Component pattern template are used in shop floor (True / False)
28. Pattern parts are made without seam allowance is called .....
29. Muslin cloth is used on dress form for draping (True / False)
30. Which are the following pattern making is / are widely used in garment industry in Bangladesh?
a) Draping b) Template
c) Industrial pattern making d) Block pattern
31. Pattern template is made up or .....in approved industry.
32. Effectively lay length is reduced while fabric width is wider (True / False)
33. Effectively lay length reduced while cloth width in wider (True / False)
34. ..... layout is widely used in garment industry
35. Any product capable of being spun/ woven or otherwise made into a fabric is
a) Fiber b) Yarn
c) Thread d) Cotton
36. Conversion of a yarn is carried out by a process termed as
a) weaving b) spinning
c) combing d) carding
37. A primary property of a textile fiber which refers to adequate strength is
a) cohesiveness b) flexibility
c) density d) tenacity
38. Find the odd one out
a) cotton b) jute
c) linen d) silk
39. The basis of poly propylene fibers are
a) methane b) propane
c) propylene d) ethane
40. The secondary property of a textile fiber is
a) tenacity b) luster
c) flexibility d) uniformity
41. Fibers that are measured in centimeters or inch are
a) staplefibers b) filament fibers
c) shorfibres d) long fibres
42. Fibres that are measured in miles or kilometers are
a) staplefibres b) filament fibres
c) shortfibres d) long fibres
43. Tenacity is the term usually applied to the strength of
a) fibre b) yarn
c) fabric d) cotton

44. Denier is the term applied to the strength of
a) fibre b) yarn
c) fabric d) cotton
45. The property of bending without breaking is
a) bending sterngth b) flexibility
c) spinning quality d) tenacity
46. Cohesiveness is otherwise termed as
a) spinning quality b) uniformity
c) adhesivity d) tenacity
47. Texturizing is the processes that introduce
a) coils b) crimp
c) zigzag shaping d) all the above
48. Density is expressed as
a) mass per unit volume b) relative mass per unit volume
c) none of the above d) both a and b
49. The primary property essential for a fibre is
a) lustre b) density
c) length to width ratio d) resiliency
50. Lustre of fibres can be reduce through the addition of
a) sodium hydroxide b) titanium dioxide
c) diphosphate d) pottasium dichromate
51. The ability of a fiber to return to shape following compression, bending or similar deformation is termed as
a) elastic recovery b) elongation
c) resiliency d) spinning quality
52. If the arrangement of molecules within the fibre are parallel to each other and to the longtitudinal axis of the fibre then
a) high orientation b) low orientation
c) crystalline d) amorphous
53. If the arrangement of molecules within the fibre are parallel to each other but not parallel to each other and to the longitudinal axis of the fibre then it is
a) high orientation b) low orientation
c) crystalline d) amorphous
54. When the fibre molecules are arranged in random then it is
a) high orientation b) low orientation
c) crystalline d) amorphous
55. An important type of associative force in textiles
a) carbon bonding b) hydrogen bonding
c) oxygen bonding d) coo bonding
56. Molecular slippage is likely to be at a maximum in
a) amorphous areas b) crystalline areas
c) both d) none of the above
57. Molecular slippage is likely to be at a minimum in
a) amorphous areas b) crystalline areas
c) both d) none of the above
58. Cat tail is a .....fibre
a) seed hair b) bast
c) leaf d) animal hair

59. Spot the odd one out
a) kenaf b) urene
c) sunn d) yucca
60. The leaf fibre is
a) cotton b) palm
c) jute d) kapok
61. Dupioni is a
a) animal hair b) animal secretion
c) leaffibre d) none of the above
62. Sunn is a
a) cellulosicfibre b) protein fibre
c) minarelfibre d) rubber
63. Spot the odd one out
a) wet spinning b) dry spinning
c) melt spinning d) pad spinning
64. Cellulose is made up of
a) C,H,O b) C,H,N
c) C,H,COOH d) C,N,COOH
65. Tenacity of cotton is
a) 3 - 5 gms / denier b) 3 - 7 gms / denier
66. ..... are used as the garment fasteners
67. ..... is used in front fly open
68. This effect is produced by applying pieces of fabric or different shapes and sizes to the user face and another fabric
a) band b) beads
c) applique d) motif
69. This is effectively used on many areas of a garment
a) riping c) embroidery
b) draq string d) rouleau
70. This is inserted in the casing or hem to pull area or fulled together
a) a cord b) hook
c) velcro d) elastic
71. This is a decerativelenotting using two basic knots, the flat and the haly hitch, with variations
a) patch b) macrame
c) applique d) mofit
72. One strip is coverd with hooks and the other with very fine loops.
a) lace b) velcro
c) zippers d) buttons
73. These are rolls or folds of fabris, used for making loops and piping for fastening
a) snap fasteners b) zip fasteners
c) rouleau fastening d) draw string
74. This type of fastening is introduced on sports wear and industrial garments
a) hook& eye b) button & button hole
c) velcro d) snap fasteners
75. This is often used at the nack of a dress, or blarse or at the waist as a belt, serve as a fastener

a) bows b) button loops
c) draw string d) frog fastening
76. These may be made from cording or braid
a) frog fastening b) velcro
c) lacing d) snap fasteners
77. This is a decreative fastening that can be introduced into a design in many ways.
a) tie knot b) eye lets
c) lacing d) zippers
78. An attractive feature used in design
a) fringing b) darts
c) pleat d) vent
79. Are used in a variety of ways on different areas or a garment such as the yolles, sleeves, skirt or panel lines.
a) gathering c) pleats
b) darts d) tucks
80. A round, flat type of cap clietly associated with the basque peasant
a) Gandhi cap c) hat
b) beret d) turban
81. Genarally speaking, this means made - to - measure
a) prer - a - parter b) ready - to - wear
c) bespoke d) fitting
82. This type or garment is usrally wear, while riding a harse
a) blazer b) fitted pant
c) bell bottem pant d) breeches
83. Gt is used to remove fullness from certain parts or the garment
a) gather b) pleat
c) dart d) tuck
84. LEVI'S brand is the example or .....
a) swim wear b) bridal
c) jeans d) childrens
85. 'Olega' brand is the example for .....
a) womens intimate wear b) suits
c) sports wear d) leotards
86. DKNY is the example of the brand name of .....
a) leotards b) jeans
c) womens sports wear d) underwear
87. 'Van Heusew' is the example of the brand name of .....
a) jeans b) womens shirts
c) suits d) men's shirts
88. 'Jockey' is the example of the brand name of .....
a) underwear b) ladies wear
c) pants d) shirts
89. 'NIKE' is the example of the brand name of .....
a) women's swim wear b) children's wear
c) bridal d) sports wear
90. Cotton is affected by
a) alkalies b) strong acids

c) cold dilute acids d) all the above
91. “King of fibres” is
a) cotton b) jute
c) silk d) nylon
92. Which fibre is popularly called ‘Golden fibre’?
a) cotton b) silk
c) jute d) flax
93. ‘Chain crass’ is
a) cotton b) kapok
c) ramie d) linen
94. Linen is the other name given to
a) cotton b) flax
c) ramie d) kapok
95. The short fibres are termed as
a) line b) tow
c) filament d) lint
96. Hacking is the term given to ..... operation
a) carding b) scutching
c) combing d) pulling
97. In fabric form jute is frequently called
a) blended fabric b) burlap
c) jute d) kenaf
98. The tenacity of ramie varies from
a) 5.3 - 7.6 gms / denier b) 9 - 11 gme / denier
c) 7 - 8 gms / denier d) 1 - 5 gms / denier
99. The fibre abaca is obtained from
a) sisal b) banana
c) pineapple d) jute
100. The fibre which is mainly used for padding and stuffing particularly upholstery is
a) cotton b) kapok
c) hemp d) urena
Key Answers of Above Questions:
1. a) drafting, b) draping
2. block pattern
3. working pattern
4. b) three dimensional
5. true
6. true
7. c) pattern drafting
8. b) pattern draping
9. d) basic pattern set
10. b) ease
11. c) test fit
12. d) dart
13. b) grain
14. d) length grain
15. c) pattern balance

16. a) garment balance
17. b) bias
18. c) pattern grain line
19. c) grain line with arrows
20. b) vertical
21. a) measurement
22. c) anthropometry
23. basic
24. oldest
25. grading
26. production pattern / industrial pattern
27. true
28. block pattern
29. true
30. c) industrial pattern making
31. thick paper bound
32. true
33. false
34. marsh dam layout
35. a) fibre
36. b) spinning
37. d) tenacity
38. d) silk
39. b) propare
40. b) luster
41. a) staple fibres
42. b) filament fibres
43. a) fiber
44. b) yarn
45. b) flexibility
46. a) spinning quality
47. d) all the above
48. a) mass per unit volume
49. c) length to width ratio
50. b) titanium dioxide
51. c) resiliency
52. a) high orientation
53. c) crystalline
54. d) amorphous
55. b) hydrogen bonding
56. a) amorphous areas
57. b) crystalline area
58. d) animal hair
59. d) yucca
60. b) palm
61. b) animal secretion
62. a) cellulosic fibre
63. d) pad spinning

64. a) CHO
65. a) 3 - 5gms / denier
66. buttons
67. zipper
68. c) applique
69. b) draw string
70. a) a cord
71. b) macrame
72. b) velcro
73. c)rouleam fastenings
74. d) snap fastenings
75. a) bows
76. a) frog fastenings
77. c) lacing
78. a) fringing
79. a) gathering
80. b) beret
81. c) bespoke
82. d) breeches
83. c) dart
84. c) jeans
85. a) women’s intimate wear
86. c) women’s wear
87. d) men’s shirt
88. a) underwear
89. d) sports wear
90. b) strong acids
91. a) cotton
92. c) jute
93. c) ramie
94. b) flax
95. b) tow
96. c) combing
97. b) bur lap
98. a) 5.3 - 7.5 gms / denier
99. b) banana
100. b) kapok