CHAPTER 3 IMAGES & GRAPHIC ELEMENTS

Multimedia Communications by Marie Rutherford

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Please visit the web version of Multimedia Communications (https://ecampusontario.pressbooks.pub/multimediacomm/) to access the complete book, interactive activities and ancillary resources.

Learning Outcomes

- Explore the effective use of images in multimedia communications
- Describe colour theory and explore computerized colour palettes considering branding elements in professional multimedia presentations
- Explore Gestalt's Theory of Visual Representation
- Explore, practice, and apply the use of images and graphics

Incorporating Images and Graphics in Multimedia

Humans prefer and are drawn to visual elements and visuals are used in presentations to create a connection. The careful selection and development of the right visual is incredibly powerful. Consider an image is a visual representation of something. The terms image and graphic are often used interchangeably however they do have defined differences. An **image** is a term that refers to any visual representation of an object, scene, or person and it includes photos, drawings, paintings, and digital images. **Graphics** refers to visual elements used in design and communication and includes illustrations, charts, diagrams, and logos.

An image consists of an array of dots called **pixels**.. The physical size of the image, will depends on the

resolution of the device on which the image is displayed. The resolution is measured in dots per inch or DPI. An image file format is a way structuring image data to allow it to be saved, stored, transferred, and copied.

There are a wide array of image file formats some common formats include:

- JPEG or JPG. Used for digital images
- PNG. Used for high quality graphics that require transparency (business logo)
- GIF. Used for simple animations
- TIFF. Used for professional photography, publishing and printing

Understanding images and graphics is critical for multimedia content development as good graphics enhances the end user experience often by making the presentation easier to navigate, accessible, and conveys complex information quickly and effectively, This chapter explores the effective use of images and graphics in multimedia communication.

Chapter Organization and Preview

- Working with Graphics
- Graphic Design
- Gestalt Theory
- Colour Theory
- Working with Graphics and Text
- Explore, Practice and Apply
- Key Chapter Terms

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3.1 WORKING WITH GRAPHICS

An Overview of Graphics

Before getting into details on creating, formatting, and incorporating graphics, consider the types and their functions.

Graphics should never be for decoration. Instead, they should have a clear purpose and help the reader to understand something in the document that would be difficult to show with text alone. For that reason, you should take some extra steps to help your audience use the graphic effectively.

You can use graphics to represent the following elements in your writing:

- **Objects** — If you are describing a fuel-injection system, you will probably need a drawing or diagram of it. If you are explaining how to graft a fruit tree, you'll need some illustrations of how that is done. Photographs, drawings, diagrams, maps, and schematics are the types of graphics that show objects.
- **Numbers** — If you are discussing the rising cost of housing in Vancouver, you could use a table with the columns being for five-year periods since 1970; the rows could be for different types of housing. You could show the same data in the form of bar charts, pie charts, or line graphs. Tables, bar charts, pie charts, and line graphs are some of the principal ways to show numerical data.
- **Concepts** — If you want to show how your company is organized, such as the relationships of the different departments and officials, you could set up an organization chart (boxes and circles connected with lines showing how everything is hierarchically arranged and related). This would be an example of a graphic for a concept; this type depicts nonphysical, conceptual things and their relationships.
- **Words** — Graphics can be used to depict words. You've probably noticed how some textbooks may put key definitions in a box, maybe with different colour in the background. The same can be done with key points or extended examples.

Pick The Right Graphic For Your Purpose

Different graphics have different functions, so you should choose one that meets your needs. For example, let's say you have been asked to write a report recommending whether your company should voluntarily recall a product. You might insert a photo of the damaged product so that your readers can see proof that the damage is extensive. You might also include a diagram of the product to help the reader understand why the malfunction occurs. If you want your reader to understand that the product has been receiving a lot of
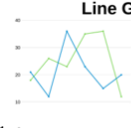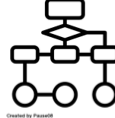
customer complaints, you might create a bar chart that compares the number of complaints received by your product to those of similar products you sell.

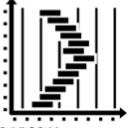When selecting a chart, graph or table, pick the one that fits the **relationship** you are trying to show. For example, if you wanted to show how something changed over time, you'd use a line graph. If you wanted to compare different numbers, you'd use a bar graph. If you wanted to show the percentages of a whole, you'd use a pie chart.

This collection of images will help you to see some popular types of charts and graphs.

Consider: Types of Charts and Graphs

Types of charts and graphs – Text version

A chart with visual representations of each of the different charts/graphs, described in the text below. Source: Adapted from 14.4: Working With Graphics In *Advanced Professional Communication* , CC BY-NC-SA 4.0.

1. **Line Graph:** The line graph shows how something has changed over time and shows trends. You can also use it to compare different trends.
2. **Table:** Use tables to show a large amount of numerical data, especially if there are many variables.
3. **Bar Graph:** Use a bar graph to help your audience compare numbers and to show how

several items relate to one another.

4. **Pie chart:** Use a pie chart to show parts of a whole. Make sure that when you use a pie chart, your data adds up to 100%. If you allowed people to select multiple survey options, for example, a pie chart won't be effective.
5. **Checklist:** Use a checklist to help readers understand the steps in a procedure and keep track of their progress.
6. **Flowchart:** Use a flow chart to help readers understand the steps in a process or procedure.
7. **Infographic:** Use an infographic to make a lot of data accessible to a general audience.
8. **Venn Diagram:** Use a Venn Diagram to show how different ideas or elements overlap. Note: The Context of Use/ Context of Production model uses a Venn diagram.
9. **Organizational tree:** The Organizational Tree shows a hierarchy. It's often used to show the structure of an organization.
10. **Gantt Chart:**The Gantt chart is used to show a project schedule, including what tasks need to be completed and when they should be completed by.

Activity source: Adapted from 14.4: Working With Graphics In *Advanced Professional Communication* , CC BY-NC-SA 4.0. / Extracted from H5P to improve user experience/print/PDF

Make Your Graphic

Once you understand your audience and the purpose of your graphic, it's time to create it. Many people create charts in Excel, Word, Google Docs, or a free chart generator. Make sure that you label your chart clearly.

Integrate Your Graphic

You chose your graphic because it shows a relationship, but without additional help your readers might not see the same connections you see. Insert your graphic close to the text that discusses it, though you should make sure that your graphic fits on one page. For example, if you have written a paragraph explaining that the defective product has three times more customer complaints than similar products, you would put the bar graph that shows this data directly below.

The first mention of a graphic is called a lead-in statement. It's also recommended to use a lead-out statement after the graphic. This is a statement that connects the figure to the material that follows.

Example

Our research shows that the BackScratcher Supreme received three times more complaints than our other backscratchers. This bar graph shows the number of customer complaints we received last quarter for each product.

Customer Complaints About Back Scratcher Products - Q2 2020

(Horizontal bar graph)

- Captain ScratchyScratcher: ~3
- ScritchyScratch Mini: ~12
- ScritchyScratcher: ~22
- BackScratcher Supreme: ~66

Legend: Customer Complaints About Back Scratcher Products - Q2 2020
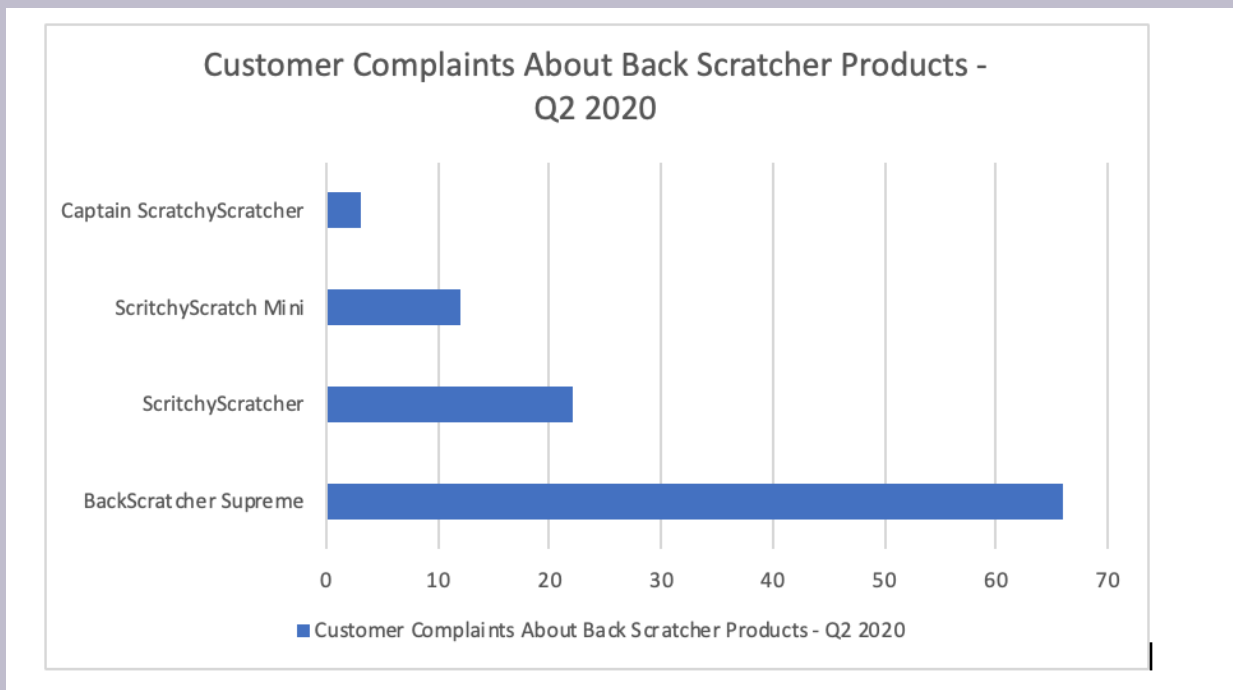
Figure 3.1a. Customer Complaints about Back Scratcher Products. A horizontal bar graph that compares customer complaints about back scratcher products in Q2 of 2020. Showing that the BackScratcher Supreme had 66 complaints, compared to 22 for ScritchyScratcher, 12 for ScritchyScratch Mini and 3 for Captain ScritchyScratcher.

As you can see, no other back scratcher comes close for the number of complaints. This suggests that the matter is systemic and that there haven't been just a few isolated incidents.

If we clearly prepare the reader for the graphic, then provide further details, the reader knows how to interpret the chart.

Label The Graphic

As you can see above, it is also important to clearly title the graphic so that your reader knows what to expect. The graphic above has a clear, precise title. It is also labeled 'Figure 11.1. This means that it is the first graphic in the 11th chapter of the report.

Add Alt Text for the Graphic

As we said above, your graphic should be accessible. If you're inserting your graphic as an image, you can add alt text. Describe the graphic so that someone who can't see it can have a similar experience. If your alt text is long, you might include an image description in the caption, as I've done above.

Cite the Graphic

Just as you would cite and reference a paraphrase or a direct quote, you must also cite and reference any graphics that you use that were created by someone else or that were based on someone else's data. Indicate the source of any graphic or data you have borrowed. Whenever you borrow a graphic or data from some other source, document that fact in the figure title using an in-text citation. You should also include the reference information in the reference list.

   This reference guide from SFU (https://www.lib.sfu.ca/help/cite-write/citation-style-guides/apa/tables-figures) tells you how to cite graphs, charts, photos and other images in a variety of settings.

Creating Accessible Graphics

Graphics are a key way to persuade and inform your audience, so you'll want to make sure that everyone can benefit from them. If you haven't written accessible text for your photos, for example, someone using a screen reader couldn't understand them. Choosing the wrong colour palette would make it hard for someone who is colourblind (or who is viewing the material in black and white) to understand your graphics. Choosing a colour that has a negative association in another culture might also give readers a negative impression of your graphics.

   Karwai Pun, who works for the U.K. Home Office, has created a series of posters to show how to design accessible graphics. You'll notice that a lot of the advice works for all users. Take a moment to scroll through these graphics and see how you can apply what you've learned when creating charts and graphs in the rest of the chapter.

Consider: Designing Accessible Graphics

Designing Accessible Graphics – Text version

Designing for Users With Dyslexia

Do

- use images and diagrams to support text
- align text to the left and keep a consistent layout
- consider producing materials in other formats (for example, audio and video)
- keep content short, clear and simple
- let users change the contrast between background and text.

Don't

- use blocks of heavy text
- underline words
- use italics or write in capitals
- force users to remember things from previous pages – give reminders and prompts
- rely on accurate spelling, use autocorrect or provide suggestions
- put too much information on page.

Designing For Deaf and Hard of Hearing Users

Do

- write in plain English
- use subtitles or provide transcripts for video
- use a linear, logical layout
- break up content with sub-headings, images and videos
- let users ask for their preferred communication support when booking appointments

Don't

- use complicated words or figures of speech

- put content in audio or video only
- make complex layouts and menus
- make users read long blocks of content
- make the telephone the only means of contact for users.

Designing For Users With Mobility Issues

Do

- make large clickable actions
- give form fields space
- design for keyboard or speech only
- use design with mobile and touch screen in mind
- provide shortcuts

Don't

- demand precision
- bunch interactions together
- make dynamic content that requires a lot of mouse movement
- have short time out windows
- tire users with lots of typing and scrolling.

Designing For Users With Low Vision

Do

- use good contrasts and a readable font size
- publish all information on web pages (HTML)
- use a combination of colour, shapes and text
- follow a linear, logical layout -and ensure text flows and is visible when text is magnified to 200%
- put buttons and notifications in context

Don't

- use low colour contrasts and small font size
- bury information in downloads
- only use colour to convey meaning

- spread content all over a page
- separate actions from their context

Designing For Users Who Use Screen Readers

Do

- describe images and provide transcripts for video
- follow a linear, logical layout structure content using HTML5
- build for keyboard use only
- write descriptive links and heading – for example, Contact us

Don't

- only show information in an image or video
- spread content all over a page
- rely on text size and placement for structure (use headers)
- force mouse or screen use
- write uninformative links and headings like "click here"

Designing For Users on the Autistic Spectrum

Do

- use simple colours
- write in plain English
- use simple sentences and bullets
- make buttons descriptive – for example, "Attach file"
- build simple and consistent layouts

Don't

- use bright contrasting colours
- use figures of speech and idioms
- create a wall of text
- make buttons vague and unpredictable (click here)
- build complex and cluttered layouts.

This Dos And Don'ts Of Designing Accessible Services page also contains plain text versions of the posters.

Source: Adapted from 14.2: Types of Graphics In *Advanced Professional Communication*, CC BY-NC-SA 4.0 . / A derivative of content by Karwai Pun, Open Government Licence v3.0, / Extracted from H5P, text version updated for PDF/Print users.

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3.2 GRAPHIC DESIGN

Graphic Design

Graphic design means creating visual concepts either by computer software or by hand to communicate a message, idea, or concept that serves a certain purpose. Uses of graphic design include: visual identity, marketing and advertising, user interface design, publication, packaging, motion design, environmental, art, and illustration.

Graphic design skills are perhaps the most broadly applicable creative skills. Almost every project, assignment, or document you produce can be enhanced by applying graphic design skills and principles.

Designing something from scratch can be a daunting task and indeed many designers find themselves stuck when they first try and launch into a new project. Fortunately, by understanding the basics of a typical graphic design process and doing a little bit of planning and research, you will have a much easier time.

Consider

Like all creative projects, it can be helpful to sit down and think about a plan before you start drafting up a design:

1. What are your goals?
2. What does the client or assignment ask for?
3. What kind of style are you aiming for?

Graphic Design Basics

When we talk about graphic design, we are talking about a number of separate 'elements' that make up a whole design. You may be familiar with some of these already, but others might be completely new. It is important to think about all of these elements as you are planning and creating your graphic.
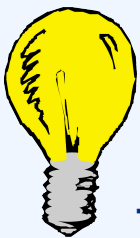
Colour

Designers and artists use a set of guidelines called colour theory to help effectively communicate ideas and create eye-catching elements for users. The use of colour theory helps with achieving a designer's goals, which may be attracting attention, organizing content, and evoking emotion. Colour theory aids the designer in choosing the right colour combination for the desired effect.

Colour terminology: There are a number of terms designers use to talk about colour that can be helpful when creating images:

- **Hue** refers to the specific colour (red, blue, purple, etc.).
- **Value** is the lightness or darkness of a hue (e.g. maroon is a dark red with a different value than cherry red).
- **Tint** is when you add white to a hue.
- **Shade** is when you add black to a hue.
- **Chroma/intensity** is the brightness or dullness of a colour (think of how close to grey, or how vibrant, a colour is).

Colour Harmony: Colours can be combined in various ways, but the common harmonies are monochromatic, analogous, and complementary.

- **Monochromatic** harmony is developed around one hue.
- **Analogous** harmony refers to choosing colours on that are close to each other on the colour wheel.
- **Complementary** harmonies are colours that are opposite of each other on the colour wheel.

Tip: Colour Modes

Where your graphic will end up will determine the "Colour Mode" you want to work in. Both modes will let you choose any colour, but the modes control how screens or printers display colours. If it is going to be posted online or on a screen, you should use **RGB Colour Mode**. For printing, you want to use **CMYK Colour mode**, which is seen in magazines, cards, posters etc.

It can be really helpful when you are starting out to play around with colour schemes to help you get a sense

of what sort of colour scheme you might want to use for your design. There are a number of free tools like Coolors (https://coolors.co/d5c5c8-9da3a4-604d53-db7f8e-ffdbda) or Adobe Color (https://color.adobe.com/create/color-wheel) that can help you try out different schemes and easily make different harmonies (you can even see thousands of schemes made by other people).

As much as colour is an important part of a design, it is equally important to consider all of the other design elements when you are working on your project.

More Design Elements

Form

An arrangement of elements in a composition and also the three-dimensional development of a two-dimensional shape, which has depth and encloses a space. There are three basic forms, which are organic, geometric, and abstract. Geometric shapes are man-made and mathematically precise, whereas organic ones are natural and asymmetrical. Abstract shapes are stylized and recognizable but are not real (and usually representing ideas and feelings).

Line

The connection between two points or a single point that continues for a distance. A line can be vertical, horizontal, diagonal, or curved. The purpose of lines is to add style, enhance comprehension, lead the viewer's eyes, create forms, and divide space. When used alone, lines can provide a framework for the page and as part of a graphic element: they can create patterns, set a mood, provide texture, create movement, and define shapes.

Shape

Flat, two dimensional enclosed areas created with lines, textures, and colours. Shapes can evoke certain emotions and be used to create a particular feeling in a composition. The use of shapes in design helps to express different ideas, the sense of movement, offer texture and dimension, and suggest mood or emotions. As an example, soft, rounded, organic shapes are often associated with calmness, whereas sharp and pointed elements refer to boldness, loudness, or dynamism.

Size

An important function in making a design layout functional, attractive, and organized. It is how large or small an element is in relation to other objects and is used to make other elements or objects stand out, or to create contrast and emphasis. In order to effectively use size in your work, you can make important elements the largest, bring them "forward" or push them "back" to give a sense of scale alongside related objects, and create unity by grouping and making similar elements the same size, such as headlines and body text.

Space

The distance between elements and shapes in a composition, also known as white or negative space. White space is important, as it allows the viewer to understand the hierarchy of the elements as it separates and groups elements, processing them as their own or as a whole piece. Space can also provide a sense of luxury

and sophistication to design work, add emphasis to certain elements, invoke imagination, and create a negative space image.

Texture

The visual or implied looks and qualities of a surface area, which suggest how it would feel. Different types of textures include patterns and images, environmental, biological, and man-made, and allow a work to create a sense of depth, evoke feelings, trigger emotions, and suggest the sensation of touch.

Graphic Design Principles

Once you've thought about all of the different elements, it's time to combine them into a full design. There are a few basic principles to keep in mind when you are roughing out your design for the first time (and as you are iterating on it to make it better!). They are: balance, rhythm, contrast, emphasis, and movement.

Balance is the arrangement of the visual weight of objects, colours, texture, and space. Balance creates emphasis, drawing the viewers attention and dividing it into symmetrical, asymmetrical, mosaic, and radial. Visual balance is important and desirable since it provides a sense of comfort for the viewer, allows them to see all areas of the composition, and emphasizes how each part may hold interest. If a composition is unbalanced, it can give a sense of tension. The areas with the most visual weight get the most attention.

Contrast is the difference between two or more visual elements in a composition. This helps to clarify the purpose of your design by creating focal points and diverting attention to the contrasting element, while adding visual interest to a composition. Certain elements that can be used as contrast in a composition include colour, type, alignment, and size. Contrast is important since the difference between the elements makes it easier to compare and comprehend.

Emphasis is when a particular element is designed to draw the attention of a viewer. This is usually an eye-catching focal point and the area that has the most significance. Emphasis can be created by using contrasts in colour, texture, and value for the eye to be drawn to a particular area, and also by strategically placing something in the area of a composition that will draw the most attention.

Movement is the direction the viewer's eyes naturally move around a composition. This can be created through lines, shapes, edges, colour, and patterns. Movement allows the viewer to know where to look and what to do next. The movement that is made through elements keeps visual interest and lets the viewer know of change. Some effects that create movement are blurs, curves, or the display of something already in motion (e.g. a person running).

Rhythm is the repeating elements in a composition that can unite, direct, and highlight. Rhythm can include elements that are repeating in shape, colour, tone, texture, accents, and direction. Using rhythm in a composition can create momentum and life, especially when used alongside the other principles.
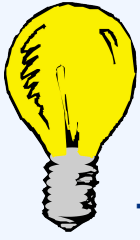
Tip: File Formats

File formats in the graphic design world can be overwhelming. In general, it's best to save your files as whatever will have the most universal use. In this case, a PDF, PNG, or JPEG at the highest resolution possible. You might encounter the terms Vector and Raster when saving. A raster is an image made up of pixels, and a vector is an image made up of shapes, lines, and points. The difference is that you can always increase the scale of a vector (because it has no pixels), whereas a raster will start to show individual pixels.

Creating Your Design

Now that you have a plan (you've roughed out your design and thought through all of its elements while applying design principles), it's time to actually use some design tools to create it. Most graphic design professionals use Adobe programs such as Illustrator, Photoshop, and InDesign to create their graphics.

Those can be both expensive and difficult to learn. Luckily, there are a number of free or less expensive alternatives that you can use to create your own high quality graphics.

Dig Deeper

Here are some extra options for you to explore for editing images that are free and/or open source.

GIMP

GIMP (Windows Store (https://apps.microsoft.com/detail/xpdm27w10192q0?hl=en-us&gl=CA)) is a free and open source alternative to Photoshop that allows for photo manipulation, retouching, and restoring, while also providing tools for users to create their own artwork, icons, graphic elements, user interface components, and mockups.

Inkscape

Inkscape (Windows Store (https://apps.microsoft.com/detail/9pd9bhglfc7h?amp%3Bgl=US&hl=en-us&gl=CA) | Apple Store) is a free and open source alternative to Illustrator and includes features for object creation with shapes, drawing, and text tools, as well as object manipulation that allows for grouping, merging, layers, and the transformation of images with multiple format support options.

Gravit Designer

Gravit Designer (Chrome Web Store) (https://chromewebstore.google.com/detail/gravit-designer/pdagghjnpkeagmlbilmjmclfhjeaapaa) is a free, browser-based, and full featured vector graphic design application that works on all browsers and operating software. This application allows you to create vector graphics with common tools, along with some photo adjustment, filters, and blending.

Canva

Canva (https://www.canva.com/) is a browser-based design platform that allows users to create a variety of content: videos, infographics, social media posts, documents, presentations, etc. The platform is free to use with a pro version available, and includes templates and the function to collaborate with other members.

Consider: Elements of Design

Elements of Design Activity – Text version

Which element of design do each of these images convey?
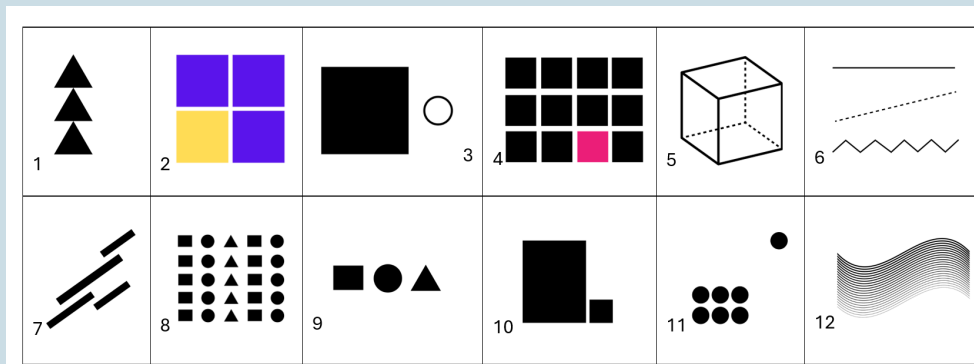
Source: Chart of images is adapted from Elements of Design activity from Graphic Design In *Liberated Learners* by Terry Greene et al. , CC BY-NC 4.0 . / Extracted from H5P activity for use in Print/PDF.

Description of images on chart:

1. three triangles stacked on top of each other
2. three purple squares, one yellow, stacked 2×2 to create a larger square
3. large solid square and small outline of a circle
4. 12 black squares, with one pink, stacked 4×3, with the pink square on the bottom row in the second last position
5. outline of a cube
6. straight line, dotted line, wavy line not overlapping

7. 4 lines that do not intersect, pointing upwards at a 45 degree angle
8. 5 rows of repeating images in a pattern of square, circle, triangle, square, circle
9. square, circle, triangle
10. large rectangle sitting beside a small rectangle
11. collection of 6 circles at the bottom left, one circle top right
12. wavy line with variations and gradients

Check Your Answers in footnote[1]

Activity source: Adapted from Elements of Design Activity from Graphic Design In *Liberated Learners* by Terry Greene et al. , CC BY-NC 4.0 . / Extracted from H5P activity for use in Print/PDF

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Notes

1.
   1. Balance
   2. Colour
   3. Contrast
   4. Emphasis
   5. Form
   6. Line
   7. Movement
   8. Rhythm
   9. Shape
   10. Size
   11. Space
   12. Texture

3.3 GESTALT THEORY

Gestalt Theory

Gestalt Theory is a framework that can help us understand how people look at visuals as a whole. It was developed in the 1920s by the German psychologists Max Wertheimer, Wolfgang Kohler, and Kurt Koffka (Pappas, 2014). The term Gestalt means *unified whole,* and there are six basic Gestalt principles: (1) similarity, (2) continuation, (3) closure, (4) proximity, (5) figure/ground, and (6) symmetry and order.

Similarity

When visual elements have a similar shape or look as one another, a viewer will often connect the discrete components and see a pattern. This effect can be used to create a single illustration, image, or message from a series of separate elements. Basically, if something has he same shape, colour, size or texture, humans will see them as linked. For example, every 'Questions for Reflection' section in this book has the same colour, shape and layout. If you start using a particular font and size for a heading, you should continue the pattern so that readers aren't confused.
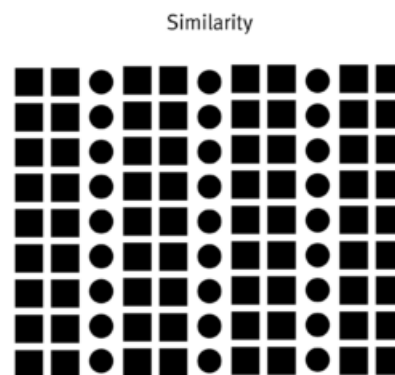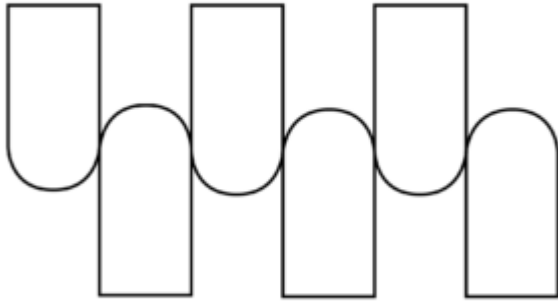
Similarity

A series of rectangles and circles arranged in a repeating pattern to indicate the similarity principle.
Source: Similarity © Ken Jeffrey

Continuation

Continuity

A series of rounded rectangles lined up to create a continuous curvy line across the shapes to illustrate the principle of continuity. **Source:** Continuity © Ken Jeffrey

Continuation is the tendency of the mind to see a single continuous line of connection rather than discrete components (see Figure 2). The eye is drawn along a path, line, or curve, as long as there is enough proximity between objects to do so. This tendency can be used to point toward another element in the composition, or to draw the eye around a composition. The eye will continue along the path or direction suggested by the composition even when the composition ends, continuing beyond the page dimensions.

To understand this principle, think about this famous optical illusion (https://metro.co.uk/2016/01/01/how-many-faces-can-you-see-in-this-tree-5595695/), which is a drawing of a tree that has several faces hidden in it. You're able to see the faces because your mind "continues" the lines to complete the shape of the face.

Closure
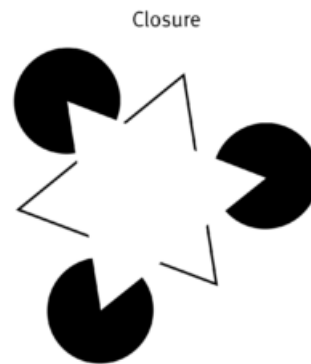
Closure

Three black circles surround a triangle with a black outline that has a triangle of whitespace on top illustrating closure.

Source: Closure © Ken Jeffrey

Closure is a design technique that uses the mind's tendency to complete incomplete shapes (see Figure 14.3.3). The principle works if the viewer is given enough visual information to perceive a complete shape in the negative space. In essence, the mind 'closes' a form, object, or composition. In the example above, the triangle is formed by the viewer's mind, which wants to close the shape formed by the gaps and spaces of the adjacent circles and lines. The partial triangle, outlined in black, also hints at the missing shape. The above optical illusion is also an example of closure, because your mind 'closes' the head shape.

Proximity

Proximity

A series of black boxes lined up in a 5 by 8 grid. In the bottom right, the boxes begin to fall away. **Source:** Proximity © Ken Jeffrey

Proximity is an arrangement of elements that creates an association or relationship between them (see Figure 4). If individual elements are similar, they will probably be perceived first as a whole and second as discrete components. If, like the example above, some of the components form to create a large 'whole,' similar elements positioned away from the main shape will also be associated with the large shape. In this case, the viewer interprets them as falling off or away from the main shape. The shapes used do not have to be geometric to create the effect of proximity. Any components that are similar in shape, colour, texture, size, or other visual attribute can achieve proximity.

Thinking about proximity helps you to think about how your audience is finding relationships between the parts of your document. For example, if a photo is under a headline in a newspaper, the audience will associate the two elements.

Figure/Ground

Figure/ground segregation refers to the contrast between the foreground and background of an image. Graphic designers often use this principle to design negative space around an object. The area where it's most commonly used is when laying text over an image. If there is not enough contrast between the figure and the ground, the reader will not be able to read the text.
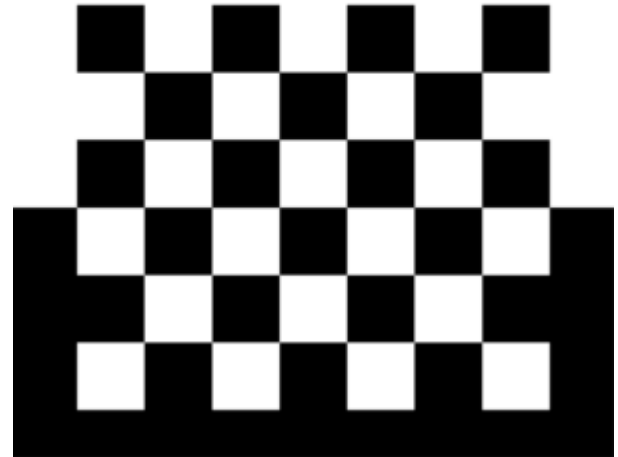
Symmetry and Order

A checkerboard of black and white shapes. The top half of the checkerboard has a white background, the bottom half has a black background, showing figure/ground segregation. **Source:** Figure/Ground, © Ken Jeffrey

Black squares make up the shape of a heart. **Source:** Symmetry © Ken Jeffrey

composition balance and a feeling of harmony.

Symmetry and order follow the premise that a composition should not create a sense of disorder or imbalance (see Figure 6), because the viewer will waste time trying to mentally reorder it rather than focus on the embedded content. The photographic example in Figure 14.3.7 is composed symmetrically and allows the viewer to concentrate on the figure in the centre. Achieving symmetry in a composition also gives the

Figure 3.3a: Example of symmetry and order is seen in this poster for the Chicago World's Fair, which has a strong sense of symmetry in its composition. There is a big tower stretching across the middle of the page and two smaller towers of equal lengths on each side of it. **Source:** Poster, originally by Weimer Pursell, silkscreen print by Neely Printing Co., Chicago, PDM

Consider

Looking at Figure 3.3a, identify:

1. What element is unbalanced or disordered?
2. Which element(s) in the poster help to create symmetry and order?

Attribution & References

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- Images by Ken Jeffrey are reused from "3.3 Compositional Principles — Strategies for Arranging Things Better" In *Graphic Design and Print Production Fundamentals* by Alex Hass & Ken Jeffrey, CC BY 4.0

References

Pappas, C. (2014, January 7). Instructional design models and theories: Gestalt theory. https://elearningindustry.com/gestalt-theory

3.4 COLOUR THEORY

Colour Theory in Context

Colour is used in so many aspects of our lives – in the objects and environments that we see all around us every day, our clothes, homes, art and design creations, and digital media like photography, videos, games and websites.

This chapter explains the colour systems used in mixing and creating colour in both digital media, such as images, videos, websites, and physical materials, such as printing, paint pigments, and dyes.

Consider

1. What colours do you find calming?
2. Are there colours that you find energizing?
3. How could you use such preferences to enhance your designs?

Additive and Subtractive Colour

Additive colour works by mixing colours of light. The more colours of light you **add** together, the closer you get to **white light**. It is the opposite of the colour spectrum, where white light is *refracted* (broken up) into a rainbow of colours.

Subtractive colour involves mixing physical materials like paint pigments, printing inks, and dyes. The more colour materials you mix, the darker the colour gets. It's called 'subtractive' because of the absorption or **subtraction** of certain wavelengths **from white light**. This absorption is based on how different atoms behave when light hits them.

Understanding the difference between additive and subtractive colour can help you when working with different kinds of materials and digital media. Learn more about each of the following topics in the OER *Colour Theory: Understanding and Working with Colour*:

- Additive and subtractive colour (https://rmit.pressbooks.pub/colourtheory1/part/additive-and-subtractive-colour/)
- Additive and subtractive colours on the colour wheel (https://rmit.pressbooks.pub/colourtheory1/chapter/additive-and-subtractive-colour-systems/)
- How additive and subtractive colour works when printing a digital image (https://rmit.pressbooks.pub/colourtheory1/chapter/additive-and-subtractive-colours-on-the-colour-wheel/)

Colour systems: digital

Digital colour systems are used by visual creation tools, such as apps for image editing and illustration, digital photography and video, interactive objects like games and websites, online media, 3D, and extended reality environments (XR) (including Augmented Reality and Virtual Reality).

These colour systems and their terminology have become industry standards and part of the knowledge base required for any digital media creator. This section explains some of the technical terms commonly used and how these systems work.

Learn more about each of the following topics in the OER *Colour Theory: Understanding and Working with Colour*:

- Colour spaces or gamuts (https://rmit.pressbooks.pub/colourtheory1/chapter/colour-spaces-or-gamuts/)
- How digital screens display colour (https://rmit.pressbooks.pub/colourtheory1/chapter/how-digital-screens-display-colour/)
- What is Hexadecimal colour? (https://rmit.pressbooks.pub/colourtheory1/chapter/what-is-hexadecimal-colour/)
- Other RGB colour models (https://rmit.pressbooks.pub/colourtheory1/chapter/other-rgb-colour-models/)
- How do digital images and videos display colour? (https://rmit.pressbooks.pub/colourtheory1/chapter/how-do-digital-image-and-video-file-formats-display-colour/)

Colour systems: printing

Colour printing requires a range of different methods for printing all kinds of imagery onto different kinds of materials. This includes photographic imagery, artwork, publications, and graphic, industrial, fashion, and textile design products.

Understanding how subtractive colour systems work, how inks, pigments and materials behave in printing processes, and how to achieve effects like metallic and fluorescent colours or gloss and embossed finishes requires special skill and expertise.

Learn more about how different colours are produced for the printing process including Process (CMYK+) and Spot (Pantone) colour in the OER *Colour Theory: Understanding and Working with Colour*:

- Do I need to convert an RGB image to CMYK to print it? (https://rmit.pressbooks.pub/colourtheory1/chapter/do-i-need-to-convert-an-rgb-image-to-cmyk-to-print-it/)
- Process (CMYK+) and Spot (Pantone) colour printing (https://rmit.pressbooks.pub/colourtheory1/chapter/spot-pantone-and-process-cmyk-colour-printing/)
- Colour management – what can go wrong? (https://rmit.pressbooks.pub/colourtheory1/chapter/colour-management/)

Colour systems: pigments and dyes

The development, mixing and use of pigments and dyes throughout history, across all cultures, is an important part of understanding colour theory. From early human use of natural pigments made from ochres in the earth to synthetic colours developed in science labs, there are many interesting stories behind the colours we know and use today.

Learn more about the history and development of colour materials and how they are used in creative practice in the following sections from the OER *Colour Theory: Understanding and Working with Colour*:

- Colour pigments: history and usage (https://rmit.pressbooks.pub/colourtheory1/chapter/paint-pigments/)
- Mixing paint pigments (https://rmit.pressbooks.pub/colourtheory1/chapter/mixing-paint-pigments/)
- Colour dyes: a (very) short history of dyes from around the world (https://rmit.pressbooks.pub/colourtheory1/chapter/dyes-history-and-techniques/)
- Colour dyes: methods and processes (https://rmit.pressbooks.pub/colourtheory1/chapter/colour-dyes-methods-and-processes/)
- Colour dyes: synthetic colours and sustainability (https://rmit.pressbooks.pub/colourtheory1/chapter/colour-dyes-synthetic-colours-and-sustainability/)
- Special colours, controversial colours and interesting facts (https://rmit.pressbooks.pub/colourtheory1/chapter/special-colours-and-fun-facts/)
- Problematic colours (https://rmit.pressbooks.pub/colourtheory1/chapter/problematic-colours/)

Colour wheels and relationships

Colour wheels have been used for hundreds of years as a method of working with colour – to understand mixing colour, creating colour palettes and relationships, and selecting colour in software applications.

Many early colour wheels used the RYB (Red, Yellow, Blue) primaries alongside secondary and tertiary

colours in a wheel, but today, with digital technologies influencing how we create works that use colour, it is accepted that the additive colour primaries (RGB) (or CMY for subtractive colour) are the standard used in software applications as screen-based media work with additive colour (pixels are made of light).

Learn more about an interactive colour wheel and information about colour relationships, schemes, properties and colour systems used in creative industries in the following sections from the OER *Colour Theory: Understanding and Working with Colour*:

- Interactive colour wheel and colour relationships (https://rmit.pressbooks.pub/colourtheory1/chapter/ interactive-colour-wheel/)
- The properties of colour (https://rmit.pressbooks.pub/colourtheory1/chapter/the-properties-of-colour/)
- Colour properties learning activities:
  - tints, shades and tones (https://rmit.pressbooks.pub/colourtheory1/chapter/colour-properties-tints-shades-and-tones-learning-activity/)
  - light to dark (https://rmit.pressbooks.pub/colourtheory1/chapter/colour-properties-light-to-dark-learning-activity/)
  - monochrome (greyscale) (https://rmit.pressbooks.pub/colourtheory1/chapter/colour-properties-monochrome-greyscale-learning-activity/)
  - bias colour
- Colour charts – Pantone and Munsell systems (https://rmit.pressbooks.pub/colourtheory1/chapter/ colour-charts/)

The visible spectrum

Sir Isaac Newton was the first to classify the visible spectrum as we know it today.

Visible Light Spectrum and other non-visible electromagnetic radiation

This diagram shows the visible light spectrum and other types of non-visible electromagnetic radiation measured in nanometres (nm).
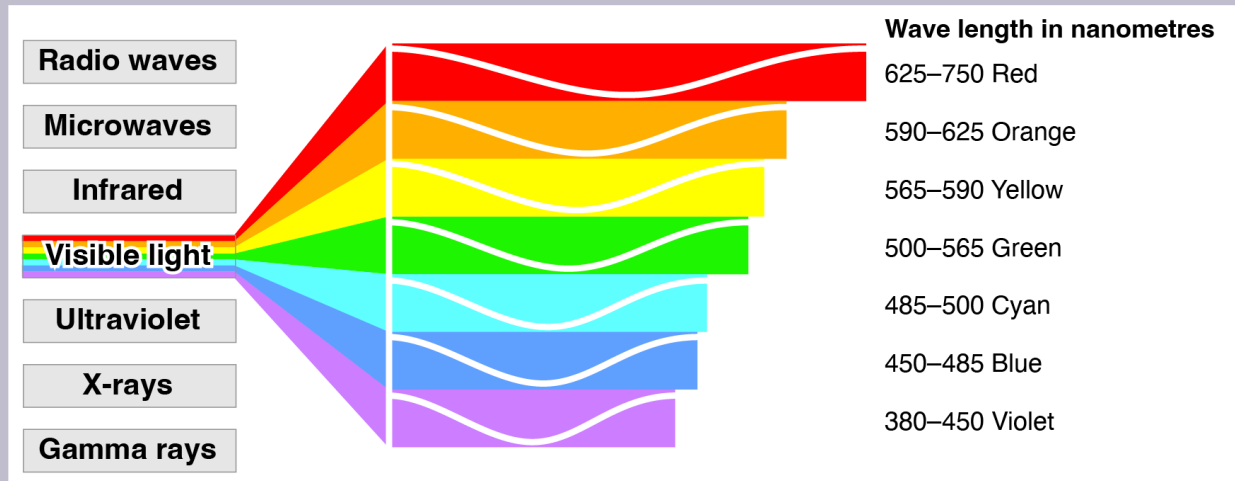
Figure 3.4a Wave lengths in nm: violet 380–450, blue 450–485, cyan 485–500, green 500–565, yellow 565–590, orange 590–625, red 625–750. Source: The light spectrum with visible wave lengths in nanometres. The light spectrum with visible wave lengths in nanometres. **Source:** The light spectrum with visible wave lengths in nanometres. by RMIT, licensed under CC BY-NC 4.0.

The colours we see are based on wavelengths, and as Figure 3.4a shows, there are wavelengths that the human eye cannot see, like radio waves, X-rays, and microwaves. In the visible spectrum, violet rays, which are the shortest wavelengths are also the highest in energy. Red light wavelengths are the longest and the lowest in energy.

The physics of light and colour

Physics is the science that deals with energy and matter. To understand what colour is and how we see it, we need to explore the physical properties of light as a form of energy and how it interacts with matter – the objects we see.

Learn more about physics-related topics in an introductory way with videos, links, and learning activities to help you to extend your knowledge of the physics of light and colour:

- Light: electromagnetic radiation (https://rmit.pressbooks.pub/colourtheory1/chapter/light-electromagnetic-radiation/)
- Optics 1: lenses and ocular devices (https://rmit.pressbooks.pub/colourtheory1/chapter/optics/)
- Optics 2: electronic technologies and spectral analysis (https://rmit.pressbooks.pub/colourtheory1/chapter/optics-part-2/)

- Why are things different colours? (https://rmit.pressbooks.pub/colourtheory1/chapter/why-are-things-different-colours/)

The eye – how we see colour

Understanding how we see colour is fundamental to understanding colour theory. The human eye has evolved to detect lightwaves from a limited bandwidth, as previously discussed in this resource – this is the visible spectrum. But how exactly do our eyes detect light and distinguish between different light wavelengths?

Learn more about how we see and how our brains interpret visual information:

- Anatomy of the human eye (https://rmit.pressbooks.pub/colourtheory1/chapter/biology-of-the-human-eye/)
- How the brain interprets colour information (https://rmit.pressbooks.pub/colourtheory1/chapter/how-the-brain-interprets-colour-information/)
- Colour blindness (https://rmit.pressbooks.pub/colourtheory1/chapter/colour-blindness/)
- Vision difference: tetrachromacy and synesthesia (https://rmit.pressbooks.pub/colourtheory1/chapter/vision-difference/)
- Accessible colour (https://rmit.pressbooks.pub/colourtheory1/chapter/accessible-colour/)
- How animals see colour (https://rmit.pressbooks.pub/colourtheory1/chapter/how-animals-see-colour/)

Trends and Palettes

A **trend** is a direction that is developing or changing – as with fashion, which is constantly evolving. **Colour trends** are how we describe certain colours or colour **palettes** (selected groups of colours that are used together) that become popular at different times. Knowing about colour trends is useful in design fields like fashion and textile design, interior design, product and packaging design and web design, where new products are continuously emerging.
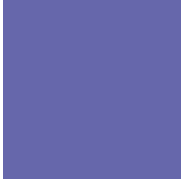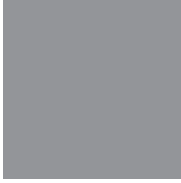
Commercial colour charts are easy to find for paints and textiles. In design, the href="https://www.pantone.com/color-tools/physical-color-tools/graphics">**Pantone Matching System (PMS)** () for graphics and print and the **Pantone Fashion, Home and Interiors System (FHI)** (https://pantone.net.au/pages/color-consulting-services) for textiles and pigments have become industry standards for colour selection for a wide range of design and commercial production solutions.
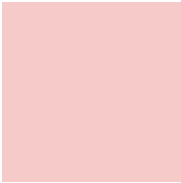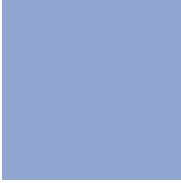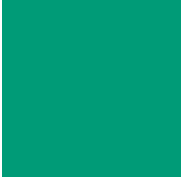
The Pantone Colour Institute has also become known for its colour trend influencing. They select a

"colour of the year" each year.

Here are some past Pantone colours of the year (Table 3.4a):

Table 3.4a – Pantone Colours of the Year 2023-2011

Year	Code	Name	Swatch	Colour Description
2023	PANTONE 18-1750	Viva Magenta		Magenta, red
2022	PANTONE 17-3938	Very Peri		Blue-purple colour, periwinkle
2021	PANTONE 17-5104	Ultimate Gray		Medium gray
	PANTONE 13-0647	Illuminating		Bright yellow
2020	PANTONE 19-4052	Classic Blue		Dark blue
2019	PANTONE 16-1546	Living Coral		Salmon
2018	PANTONE 18-3838	Ultra Violet		Purple
2017	PANTONE 15-0343	Greenery		Green

2016	PANTONE 13-1520	Rose Quartz		Light Pink
2016	PANTONE 15-3919	Serenity		Light blue, periwinkle
2015	PANTONE 18-1438	Marsala		Rust/brown
2014	PANTONE 18-3224	Radiant Orchid		Pink/purple
2013	PANTONE 17-5641	Emerald		Green
2012	PANTONE 17-1463	Tangerine Tango		Dark orange
2011	PANTONE 18-2120	Honeysuckle		Dark pink

Source: Pantone past colours of the year.

Aesthetics of colour palettes

A colour palette is a set of colours that a designer or artist chooses to work with on a project like an image, website, fashion range, product packaging etc.

Choosing the right set of colours can play an important role in how successful your design, artwork or product is and how users respond to it.

As previously discussed in this chapter, colour perception and aesthetic taste are subjective things, but colours do have common links to our emotions and moods. Any artist or designer will have their preferred palettes for working with specific projects. However, if you have a design brief from a client, you may need to create a unique colour palette for your client's website or product. It can be difficult to know which colours work best together, and if those colours successfully symbolise or represent your client's business.

Many online tools can recommend currently trending and aesthetically pleasing colour palettes or can help you create your own palettes by using keyword searches. Other online tools allow you to upload images to create a colour palette from the colours used in the image, or use AI to create colour palettes based on machine learning.
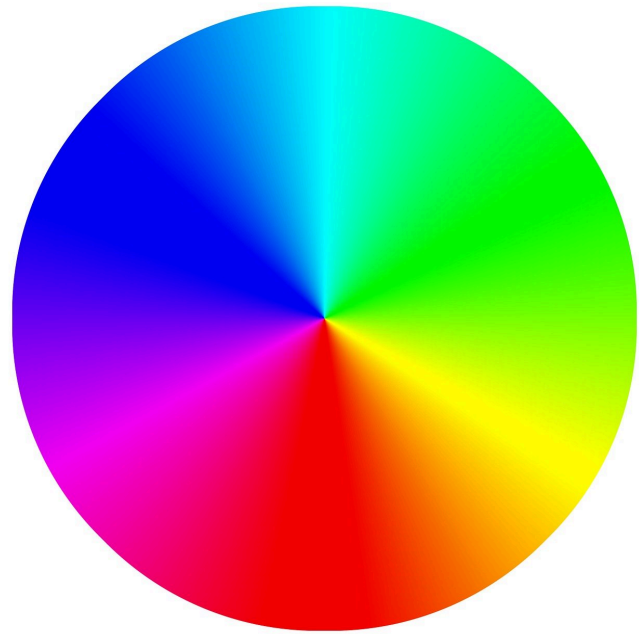
Colour wheel shows the rainbow of colours. Colour wheel by TheDigitalArtist via Pixabay, licensed under CC0.

Attribution & References

Except where otherwise noted, this page is adapted from "Colour theory: the visible spectrum", "Colour trends and palettes" and "Working with colour" In *Colour Theory: Understanding and Working with Colour* by Lisa Cianci, CC BY-NC 4.0 . / Combined 3 pages from the same source, created table of contents links back to original text.

References

Pantone. (n.d.). Color of the year. https://www.pantone.com/articles/color-of-the-year

3.5 WORKING WITH GRAPHICS AND TEXT

Key Principles for Working with Graphics and Text

- Visual design is important because people don't read workplace documents for fun. They read them because they have to. Your job is to make documents as readable and usable as possible.
- Before you design your document, define your purpose and think about your audience.
- To make sure that everyone can benefit from your graphics, consider accessibility.
- Gestalt Theory helps us to think about how the document functions as a whole. The six principles of Gestalt Theory are: similarity, continuation, closure, proximity, figure/ground segregation and symmetry.
- When designing charts and graphs, think about what relationship you are trying to show.
- It is important to revise graphics and other document design elements, as well as to revise your text, and to make the entire document reader-centred.

Revising your Work

Just like written text, graphics have to be revised. The following checklist will help you revise your visual communication to make sure that it's as effective as possible, as well as revise your text both from a visual and a linguistic perspective to make it as reader-centred as possible.

Consider: *Revision Checklist*

1. First Pass: Document-level Review

- Review specifications to ensure that you have included all required content.
- Make sure your title, headings, subheading, and table/figure labels are clear and descriptive. Headings should clearly and efficiently indicate the content of that section; Figure and Table

captions should clearly describe the content of the visual.

- Make sure visual elements have appropriate passive space around them.
- Make sure ideas flow in a logical order and explanations come in a timely manner. Make sure visuals illustrate your textual information.
- Write "reader-centred" prose: determine the relationship between your purpose in writing and your reader's purpose in reading. Give your readers the information they want and need to get from your document as efficiently as possible.
- Make sure you are using an appropriate tone (neutral, objective, constructive, formal)

2. Second Pass: Paragraph-level Review

- Make sure each paragraph begins with a topic sentence that previews and/or summarizes the content to come.
- Add coherent transitions to link one sentence logically to the next.
- Cut unnecessary or irrelevant information.
- Avoid overly long or short paragraphs (5-10 lines long is a reasonable guideline).

3. Third Pass: Sentence-level Review

- Watch sentence length; consider revising sentences longer than 25 words. Vary the length and structure of sentences.
- Look at the ratio of *verbs: number of words per sentence*. Generally, the more verbs in the sentence, the better the sentence.
- Use concrete, strong, active verbs – avoid vague, passive, verbs and "is/are/was/were/being" whenever feasible (move the *–tion* and *–ment* words up the verb scale).
- Create a clear Actor/Action relationship (Subject-Verb).
- Verbs like "make" "do" 'have' and "get" have many possible meanings. Try to find more precise ones.
- In general, keep subject and verb close together, and keep the subject and the main verb near the beginning of the sentence.

4. Fourth Pass: Word-level Review

- Use concrete, specific, precise words; avoid vague, abstract, generalizing words.
- Match your vocabulary to your audience: experts can tolerate complex information with a lot of terminology; general readers require simpler, less detailed descriptions/explanations.

- Use clear, plain language rather than pompous diction; write to **express**, not impress.
- Avoid "sound bite" phrases that have no real meaning; use a single word instead of a phrase whenever possible.
- Avoid clichés, colloquial expressions, and slang.
- Use second person (you) pronouns carefully and sparingly—and only if you want to address your readers directly (not to refer to "people in general").
- Avoid "ad speak"—don't sound like you are "selling" something; use objective, measurable descriptors.

Attribution & References

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3.6 IMAGES

Image Basics

An **image** is a visual representation of something, There are two main types of images digital and analog. Digital images are created using a computer or camera. Analog images are film photographs and paintings. Resolution, bit-depth (colour depth) and colour management make up the core of a digital image.

Image resolution

A digital image is a structured matrix (or grid) of tiny squares known as pixels (**pi**cture **el**ements). Each of these pixels has an assigned tonal value and when viewed in combination with surrounding pixels form the illusion of a continuous tone image.

Image resolution is simply a measurement of the density (or number) of pixels within the digital image. It describes the amount of detail encoded within a digital image. In the scanning world, resolution is a representation of the number of samples taken from the analogue original (photograph, document etc). In general, a greater number a samples (or higher resolution) should result in a more representative digital surrogate.

Resolution can be measured using two methods. In most software programs these are referred to as *pixel dimensions* and *document size/pixels per inch*.

Pixel dimensions (also known as pixel array) – makes reference to the number of pixels in the matrix arrangement (array) horizontally and vertically.

For example:

- 1024 x 768 pixels, or width=1024 and height=768

Document size/pixels per inch – resolution is most commonly expressed in *pixels per inch* (ppi) and measures the number of pixels per square inch.
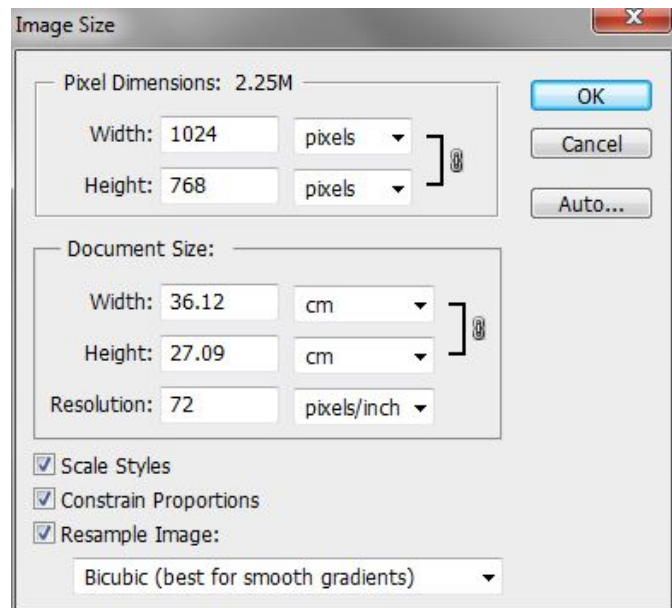
Adobe Photoshop Image Size dialog box, showing dimensions of the image (measured in pixels), and document size (measured in cms, with overall resolution). **Source:** Adobe Photoshop © Adobe, used under Fair Dealing.

For example:

- a 1 inch x 1 inch image @ 300ppi image = 300 x 300 pixels

Pixel per inch (ppi) is a variable measurement and is dependent on knowing the size of overall the image; without this scale (or magnification ratio) the measurement loses context.

[You might be familiar with the term *dots per inch* (dpi) and while the two terms are often interchangeable *dpi* refers to printed resolution whereas *ppi* refers to the pixels within the digital image file].

Example of image resolution

Here is an image from investigator records (University Hotel, Parramatta Road, Glebe 1890). Take note of the horse bottom right.

Image University Hotel, Parramatta Road, Glebe, Proposed hotel perspective, Applicant/owner, Alfred Bennett Esquire, Architect N C Day. Dated: 21/01/1890 Digital ID: 9590_62784 Series: NRS 9590. **Source:** Image from Museums of History NSW – State Archives Collection, PDM.

Below is a close-up of the horse and shows three derivatives from the one master file. The higher the resolution, the greater the (uncompressed) file size – from 300ppi for printing down to 75ppi for web delivery.

Close up of horse in three different resolutions (300 PP1, 150 PP1, 75 PP1) for comparison of image quality and file size. Largest PPI has the largest file size. **Source:** Image from Museums of History NSW – State Archives Collection, PDM.

Bit depth (tonal or colour depth)

This is the measurement of the number of bits – or binary digits – devoted to storing the colour information about each pixel. The number of bits available determines the maximum possible range of colours and luminosity values (or grey shades) that can be represented within an image's colour space or palette.

For instance, in a one bit image, each pixel is stored as a single bit (0 or 1) so there are only two digits available (black [0] or white [1]).

1-bit = 2 shades   8-bit = 256 shades
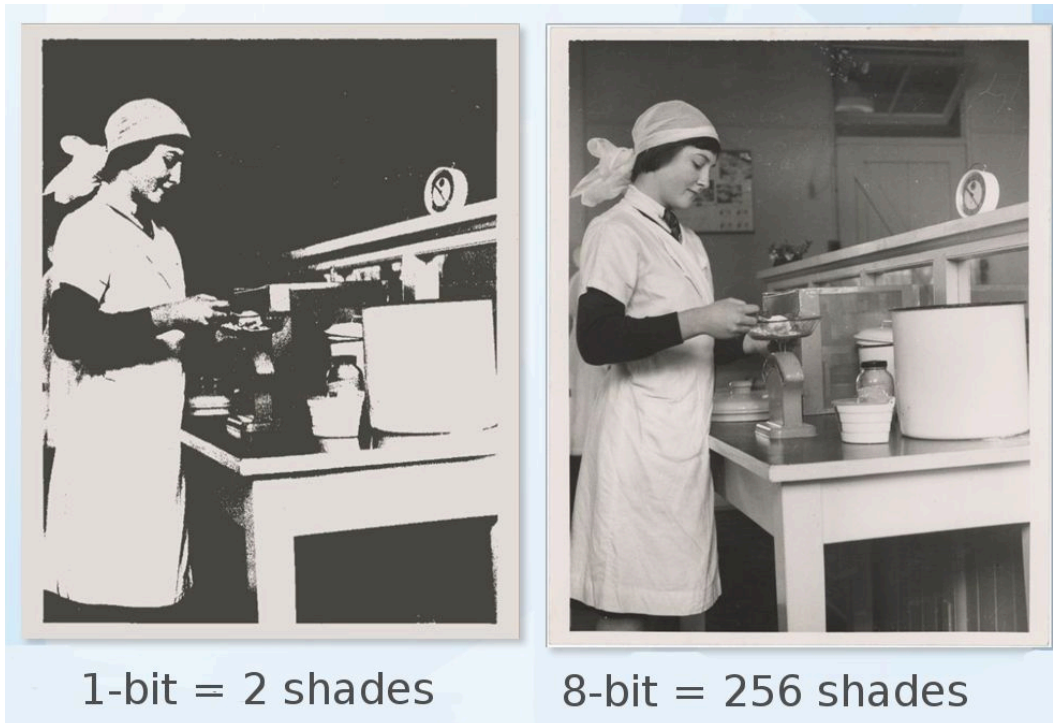
The same black and white photograph is shown in 1-bit (2 shades) and 8-bit (256 shades). The image in 8-bit is considerably more clear and defined. **Source:** Digitising your collection – Part 3: Technical specifications, CC BY-NC-SA 3.0 Australia License.

Colour management

Colour management outlines the colour capabilities of hardware devices – cameras, scanners, monitors and printers – by creating a translation (profile) that controls how the colour is displayed (or printed) by those devices.

Colour profiles ensure the quality of reproduced colour across many output devices. The minimum requirement for most projects should be an input profile outlining the colour space of the device that was used to digitise the document (most devices will default to sRGB (https://en.wikipedia.org/wiki/SRGB)).

Image File types

TIFF (TIF) – Tagged Image File Format

This is currently the preferred archival format for storage of images. It is the most common uncompressed image file type and retains all of the image information. It also offers lossless compression options (see below under File Compression). Most software programs use this format and it is available for both Macintosh and Windows.

JPG (JPEG) – Joint Photographic Experts Group

This format is highly compressed and removes "unnecessary" image information. Most software programs use this format and it is available for both Macintosh and Windows.

JPEG 2000

A compression standard enabling both lossless and lossy storage. The compression methods are different from the ones in standard JPEG and improve quality and compression ratios. However it requires more computational power (or to be more technical, *grunt*) to process.

	Typical Image Formats	
Format	**Bit depth**	**Compression**
TIFF (TIF)	• RGB – 24/48 bits • Grayscale – 8/16 bits • Indexed colour – 1 to 8 bits	No Compression or Lossless (LWZ)
PNG	• RGB – 24/48 bits • Grayscale – 8/16 bits • Indexed colour – 1 to 8 bits	Lossless (ZIP)
JPEG2000 (JP2)	• RGB – 24/48 bits • Grayscale – 8/16 bits	Lossless or Lossy
JPEG (JPG)	• RGB – 24 bits • Grayscale – 8 bits	Lossy
PSD	• RGB – 24/48 bits • Grayscale – 8/16 bits • Indexed colour – 1 to 8 bits	No compression

Image File compression

Compression shrinks the digital images for storage. There are two ways to compress:

1. **Lossless** eg: TIFF – keeps all data by encoding the image files. It can reduce the file size by 40-60% information.
2. **Lossy** eg: JPEG/JPG – this way of compression permanently removes "un-important data" (subtle colour/tonal information that is hard to distinguish with the human eye) aiming to strike a balance between acceptable loss of detail and bandwidth.

While lossless compression is preferable you can see in the image below that lossy compression doesn't always show a loss of detail. It depends on the amount of compression that is applied which in turn depends on the image content and resolution.

Lossy compression
High quality 10

Lossy compression
Low quality 1

Two photos of the same historical document, at different lossy compressions. The image quality is not dramatically different, despite the lossy compression.
Source: Digitising your collection – Part 3: Technical specifications, CC BY-NC-SA 3.0 Australia License.

The more compression applied the more visible the result. With lossy compression you can reduce an image from 1/10 to 1/20 of its original size without perceived loss.

Tip: Lossy Compression

Lossy compression is irreversible. Each time a jpeg file is saved – even after minor edits – it will lose quality.

Consider: Image Storage

Factors to consider for Image Storage

1. **Security** – can the files be tampered with/can an unauthorised user gain access?
2. **Accessibility** – are the files easy to retrieve by an authorised user? Is there a record of where items are stored? This could include sensible naming conventions for the digital files; organised folders/labels; keywords (metadata). Will they remain accessible long-term as storage systems change/or update?
3. **Media** – will you store images on a hard-drive; USB stick/memory card? There's no perfect medium – each has a limited lifespan.
4. **Back-ups** – any of the above media could malfunction – have you made a back-up? Do you regularly update your back-up or check its functionality?

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3.7 INFOGRAPHICS

What is an Infographic?

An infographic is a collection of images, visual data such as pie charts and bar graphs as well as minimal text to give a quick understanding of the topic.

Caution!

Canva has a very detailed data terms of services and privacy policy which explains the data they collect from users. Before using Canva, be sure to read their privacy policy. If this is something that concerns you, use at your own discretion. Other services to make infographics are Microsoft PowerPoint, Piktochart, and Visme, but this chapter will focus on Canva.

Sign Up

Once you have arrived at the Home page of Canva (https://www.canva.com/), you will see a Sign up button. You will need a name and an email address. You can create a free account using your email address.

Starting Your First Infographic

Once you have signed up and logged in, you will see your profile at the top right as well as a "Create a Design" button to the left of your profile.

After clicking on the "Create a Design" button, a drop down menu will appear, containing numerous designs. Pick "Infographic". You will then be greeted with a blank page and a side menu.

How to make an infographic – By Harsh Bhavsar
Infographics use visuals and text to communicate

Side Menu

On the left side of the page, you will see 5 options:

- Templates
    - Choose a template that suits best for your content
- Elements
    - Adding shapes, graphics, pictures and more can help liven up your infographic
- Uploads
    - Upload images, videos and audio to use in your design
    - You can also record yourself using your device's camera and or microphone in this section
- Text
    - Include text headings with multiple font combinations to add variation to your infographic
- More
    - Allows you to access more content to create amazing designs
    - Includes apps and integrations as well as popular websites you can embed to your design

information clearly and concisely. 1. Outline the goals: Your infographic should address an issue as well as a solution to it. 2. Collect data; Obtain any data required to better explain your proposed solution. 3. Visualize the data: Choose the best charts or images to accompany your data and text. 4. Choose the right template: Pick your design template based on it's structure. 5. Add style: Experiment with using different fonts, color, icons and arrangement of your content. Created on Canva. **Source:** *Creating Ebooks in Pressbooks*, CC BY 4.0

Watch How To Make Infographic In Canva 2024 (Step-by-Step) (8 mins) on YouTube (https://youtu.be/IrxVN0aArfw) for an overview of this process

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Attribution & References

Except where otherwise noted, this page is adapted from Design 8: Infographics In *Creating Ebooks in Pressbooks* by Trevor Winchester; Harsh Bhavsar; madelyn; paesanom; and Dave Cormier, CC BY 4.0

References

Canva. (2021). *Collaborate & create amazing graphic design for free*. Canva. Retrieved December 13, 2021, from https://www.canva.com

3.8 EXPLORE, PRACTICE AND APPLY

Overview: Explore, Practice and Apply

Activities found on this page are designed to provide opportunities to explore, practice, and apply concepts presented in chapter 3.

Explore

Explore Activity 1

Colour palette generators. Here are some online tools that can help you to create your own unique colour palettes for creative projects. Try them!

- Canva Color palette generator (https://www.canva.com/colors/color-palette-generator/)
- Adobe Color Wheel (https://color.adobe.com/create/color-wheel)
- Colormind (http://colormind.io/)
- Coolors (https://coolors.co/)
- Muzli Colors (https://colors.muz.li/)

Explore Activity 2

Locate examples of multimedia content (e.g., websites, advertisements, or presentations). Analyze how images and graphics are used effectively or ineffectively, focusing on resolution, file format, and alignment with branding.

Explore Activity 3

This is a collaborative group based activity. Working in small groups select one of the three colour schemes as listed below:

1. Complementary Color Scheme

- Description: Uses colours that are opposite each other on the color wheel.
- Example: Blue and orange.
- Effect: High contrast and vibrant look, great for drawing attention.

2. Monochromatic

- Description: Uses varying shades, tints, and tones of a single color.
- Example: Different shades of blue (light blue, medium blue, dark blue).
- Effect: Creates a cohesive and harmonious look, but may lack contrast.

3. Triadic Color Scheme

- Description: Uses three colors that are evenly spaced around the color wheel.
- Example: Red, yellow, and blue.
- Effect: Balanced and vibrant, offers strong visual contrast while retaining harmony

Each group locates 2-3 examples of their assigned color scheme used in various types of media (e.g., advertisements, websites, presentations). Assess the effectiveness of the colour design in the media examples located. Prepare to share your findings in your class.

Practice

Practice Activity 1

Choose an assignment that you have created in this class or another class that does not currently have a chart or graph. Find some data that could benefit from being presented as a chart or graph. Create a chart or graph that illustrates the data, making sure to choose the correct relationship. For example, you might find a sentence in an essay you wrote that says that 10% of Millennial's don't own a smart phone. You could show this visually using a pie chart.

Practice Activity 2

Find an infographic online. Then, evaluate it according to what you have just learned. Write a short paragraph that answers the following questions: How does it present data? Is it easy to understand? Is it ethical? Can you understand where the data came from?

Practice Activity 3

Image File Format Comparison. Create a chart comparing the advantages and disadvantages of different image file formats (JPEG, PNG, GIF, TIFF) for specific use cases (e.g., web design, professional printing).

Apply

Apply Activity 1

Find a poster in your campus or workplace, or out in the community. Take a photo of it, then evaluate it according to Gestalt Theory. Can you identify all of the principles?

Apply Activity 2

Choose a website that you like to visit, then use what you learned about accessibility to evaluate how accessible the website's visuals are. Write a short email (you do not have to send it) to the website's owner suggesting three changes they could make to improve the accessibility of their visuals.

Apply Activity 3

Create your own personal logo or brand graphic

1. **Consider you brand and brainstorm**: Think about words that describe your personality, values, and what you want your logo to represent.
2. **Research**: Look at logos you admire and note what elements you like.
3. **Sketch ideas**. **Draw rough sketches**: Start with simple sketches on paper. Don't worry about perfection; focus on getting your ideas down.
4. **Experiment with shapes and symbols**: Consider how different shapes and symbols can convey your brand's message.
5. **Fonts**: Select fonts that match your brand's personality. For example, a bold font can convey strength, while a script font can be more elegant.
6. **Colors**: Pick colors that resonate with your brand. Use color psychology to choose colors that evoke the right emotions.
7. **Feedback.** Share your design with peers and get their feedback

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3.9 KEY CHAPTER TERMS

Chapter 3 Terms

Additive Colour:

A color system that mixes light (reds, greens and blues) to create other colors; used in digital screens.

Alt Text:

Text descriptions of images to aid in accessibility, especially screen readers.

Analogous:

Colors which are adjacent to each other on the color wheel and are considered harmonious.

Balance:

The placement of visual elements to make a design feel stable.

Bar Graph:

A graph that uses rectangular bars to depict data and is useful for comparing data.

Closure:

A design principle, incomplete shapes are perceived as whole due to the brain's tendency to fill gaps.

CMY:

Cyan, Magenta, and Yellow-Subtractive primary colors in printing.

Colour Palette:

A collection of colors used for a design or a brand identity.

Colour Blindness:

A vision deficiency whereby one cannot differentiate certain colors, usually red and green.

Colour Harmony:

Pleasing color combinations based on specific rules like complementary or analogous schemes.

Colour Management:

Processes which ensure color consistency on devices such as printers and screens.

Colour Modes:

Color creation systems such as RGB (digital) and CMYK (printing).

Colour Perception:

The perception of color by humans in terms of light, context and physiology.

Colour Spaces/Gamuts:

The gamut or range of colors possible within a color system such as RGB or CMYK

Colour Trends:

Current Choruses of Color popular color trends in design given the current culture, fashion, and technology.

Colour Wheel:

A circular diagram showing the relationships of primary, secondary and tertiary colors

Continuation:

Direction, a design principle leading the viewer's eye in a particular direction.

Contrast:

The difference in visual properties (light vs. dark, large vs. small) to emphasize elements.

Design Principles:

Guidelines like balance, contrast, and proximity to create effective designs.

Digital Colour Systems:

Methods of displaying color on screens, primarily RGB.

Electromagnetic Radiation:

Energy traveling in waves, including visible light and other types like UV and infrared.

Emphasis:

Drawing attention to a specific element in design using contrast or placement.

Figure/Ground:

The relationship between the main focus (figure) and the background (ground).

File Formats:

Standards for storing digital media, such as JPEG for images or MP4 for videos.

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