FIGURE FOR PUBLICATIONS

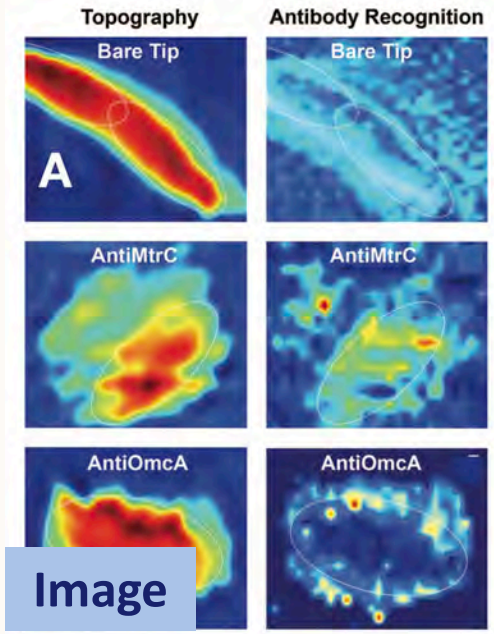
AGENDA

- Imaging essentials
- Guide of using science images for publication
- Guidelines for designing scientific illustrations and figures
- General figure submission guidelines for publication
- Poster making tips
- Recommended links for publication

IMAGING ESSENTIALS

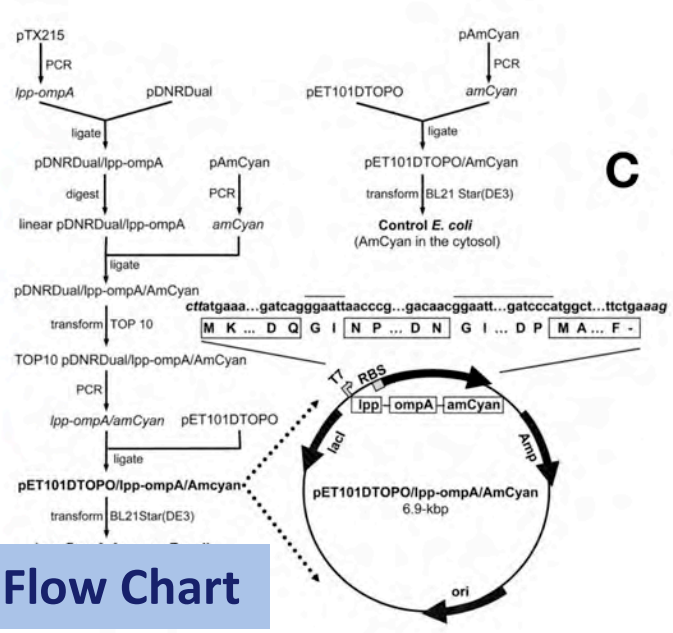
Basic imaging concepts

TYPES OF SCIENTIFIC FIGURES

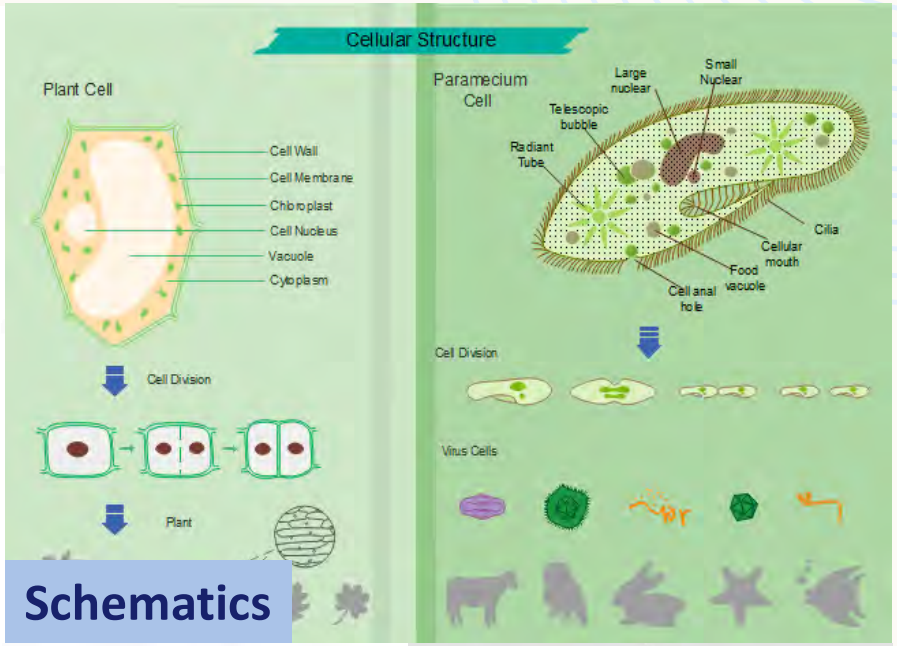


Image

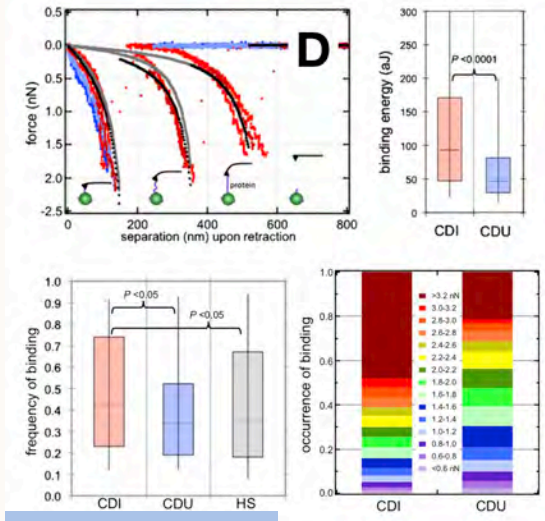
Map



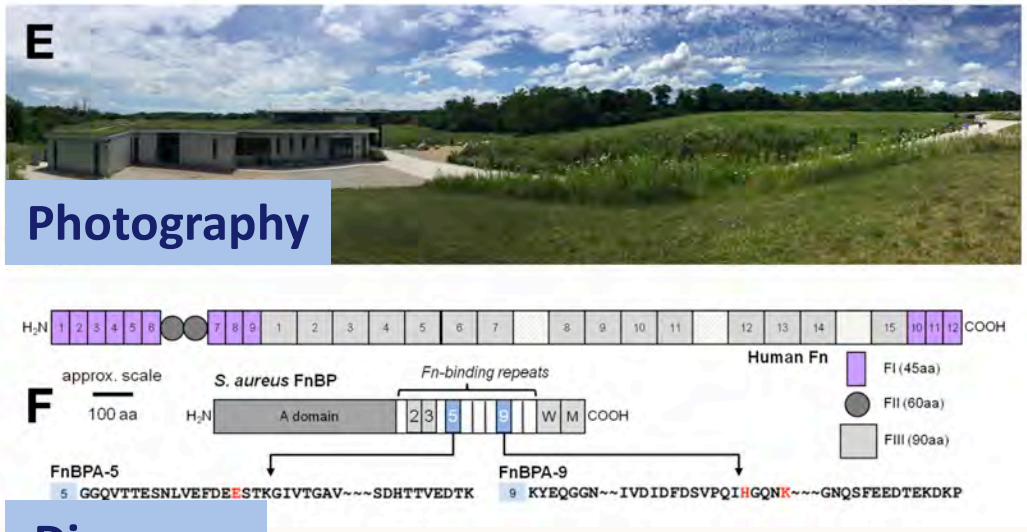
Flow Chart



Schematics

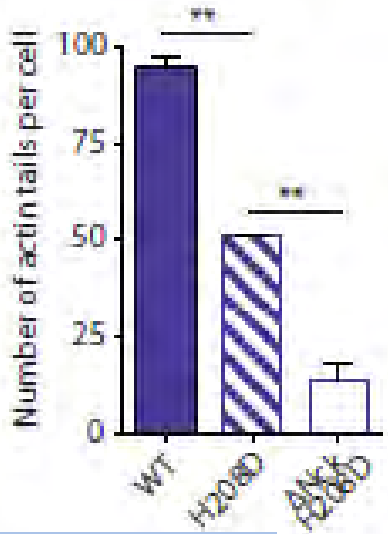


Line & Bar

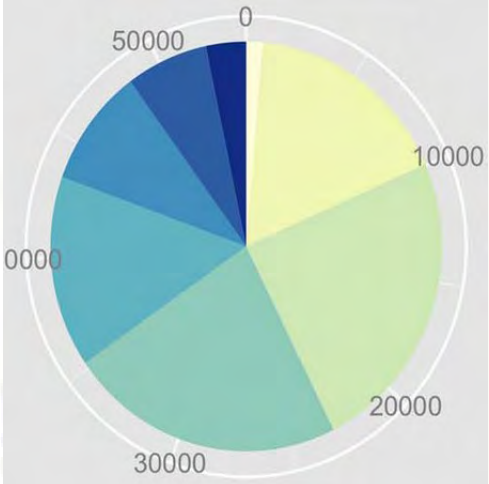


Photography

Diagrams



Bar Chart



Pie Chart

WHAT IS RASTER IMAGE ?

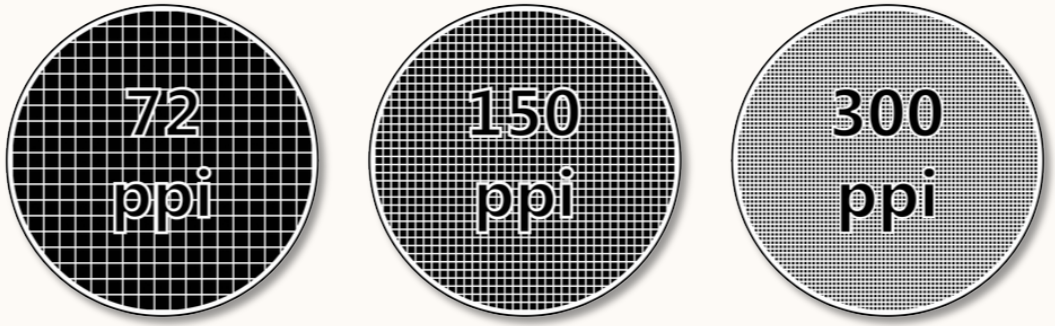
- Built with fixed pixels, When a raster image is resized to fit a larger or smaller space, it can become distorted or blurry.
- Editing raster graphics can be difficult because it involves editing individual pixels using software like Adobe Photoshop.
- Commonly used in photographs and images
- The image resolution is measured in PPI (Pixels per inch).
- The file formats that are typically raster include:

Joint Photographic Expert Group

Portable Network Graphics

Tagged Image File Format

Photoshop Document

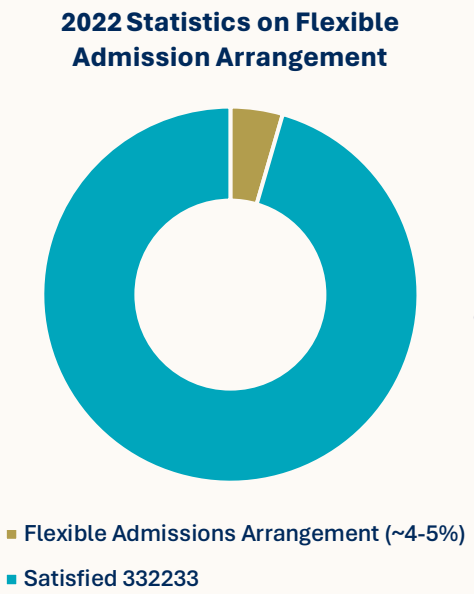


Pixels: Individual squares on a grid makes up an image and each square are made up of a color.

WHAT IS VECTOR IMAGE ?

- Made up of mathematically described points, lines, and areas, which means they can be scaled up or down infinitely without losing quality.
- Easier to edit because the elements of an image are recognized as individual, overlapping shapes.
- Can be converted into raster images, but rasterized an image can be a bit tricky (E.G. You can convert raster images to vector artwork in Adobe Ai by using image trace)
- Graphs ,diagrams, schematics, text, charts, tables are usually created in a vector format, keeping edges looking crisp & sharp.
- The file formats that are typically vector include:

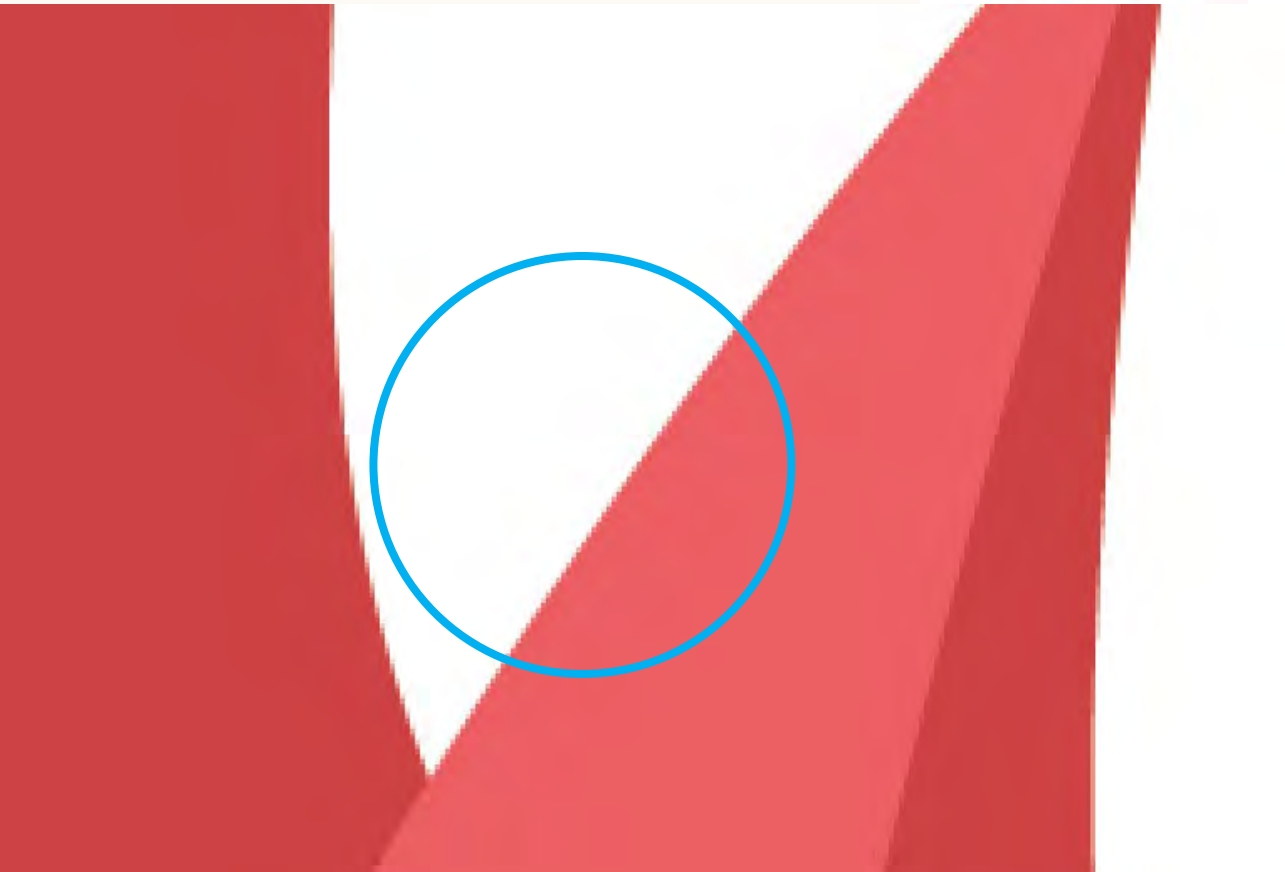
Adobe Illustrator | Encapsulated PostScript | Scalable Vector Graphics | Enhanced Metafile



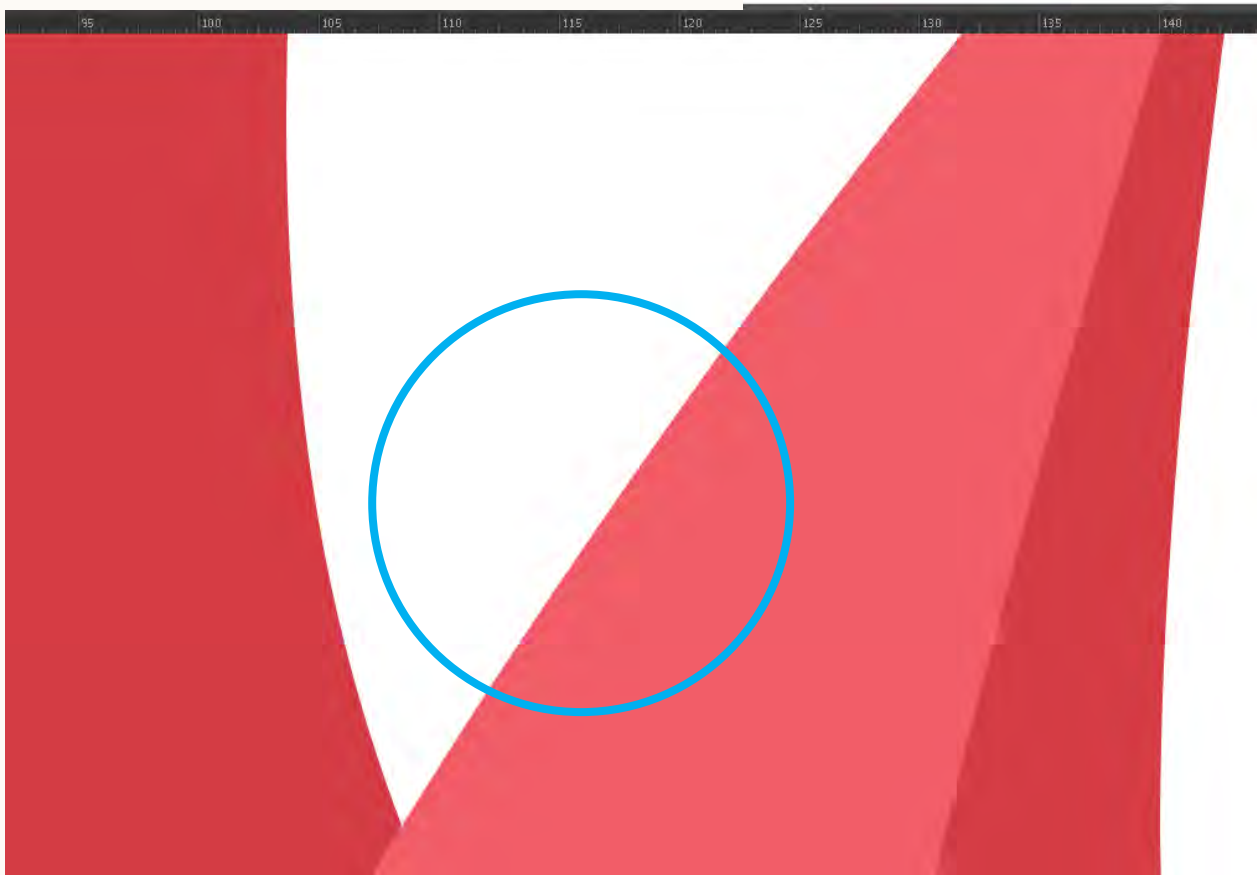
For example:

- Diagrams (vector file) can be copied and pasted from excel to PowerPoint directly

Raster image (Jpg)



Vector image (in Adobe Ai)

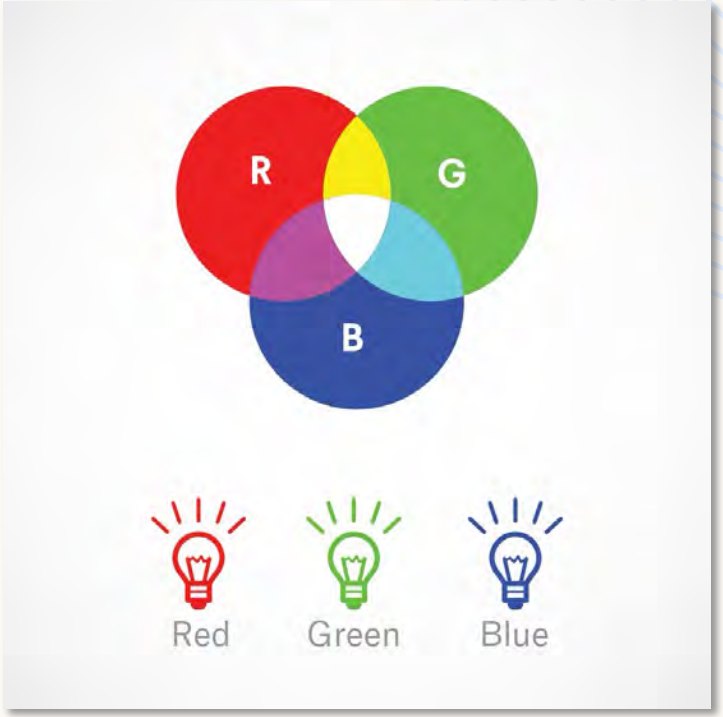


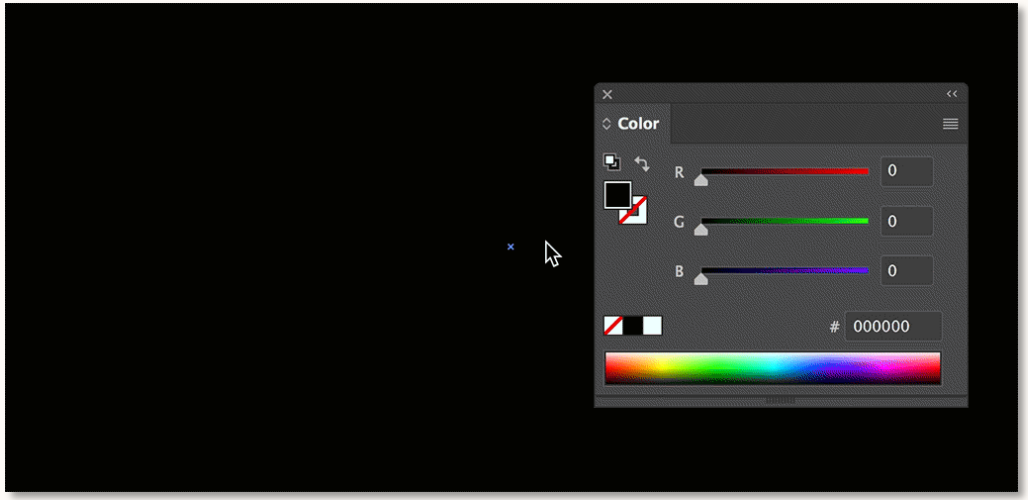
THE DIFFERENCES BETWEEN RASTER AND VECTOR FILES

	Raster		Vector	
Characteristics	• Pixel based images (aka bitmap images) • Images that composed of grid of pixels		• No pixels/ no resolutions • Mathematical formulas	
Resolution	Identifies the number of pixels • Described using Pixels Per Inch (PPI) • Lose image quality when resized		Made up of mathematical formulas • Resize, rescale, and reshape vectors infinitely without losing any image quality	
Uses	• Common for images and web-based graphics		• Common for logos, graphic design, illustration, typography and print	
File sizes	Generally larger than vector files • Contains millions of pixels and high levels of details		More lightweight than raster files • Only the mathematical formulas that determine the design	
Compatibility and conversion	• Common for images and web-based graphics		• Requires specialized software to open & edit	
Usual file types	• JPG • TIFF • GIF	• PNG • PSD • BMP	• AI • SVG	• EPS • EMF

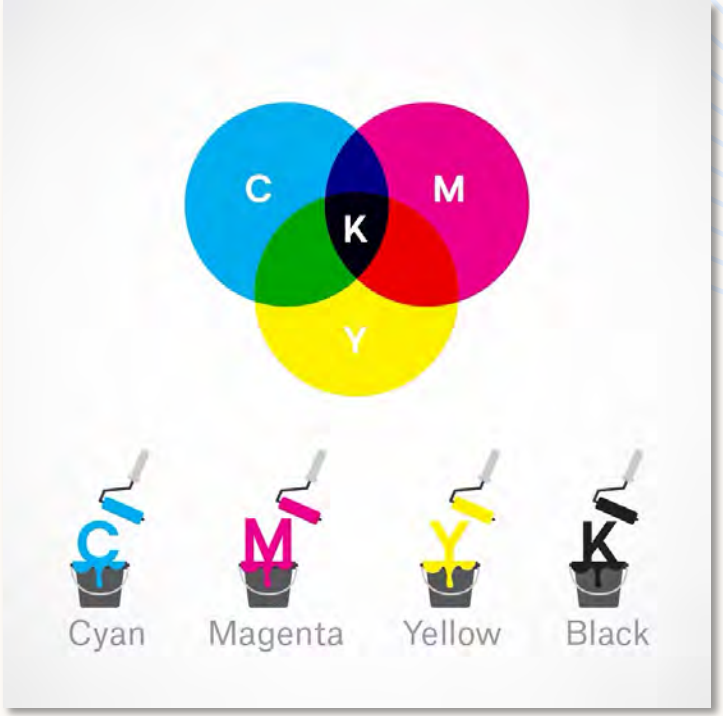
WHAT IS COLOR MODE?

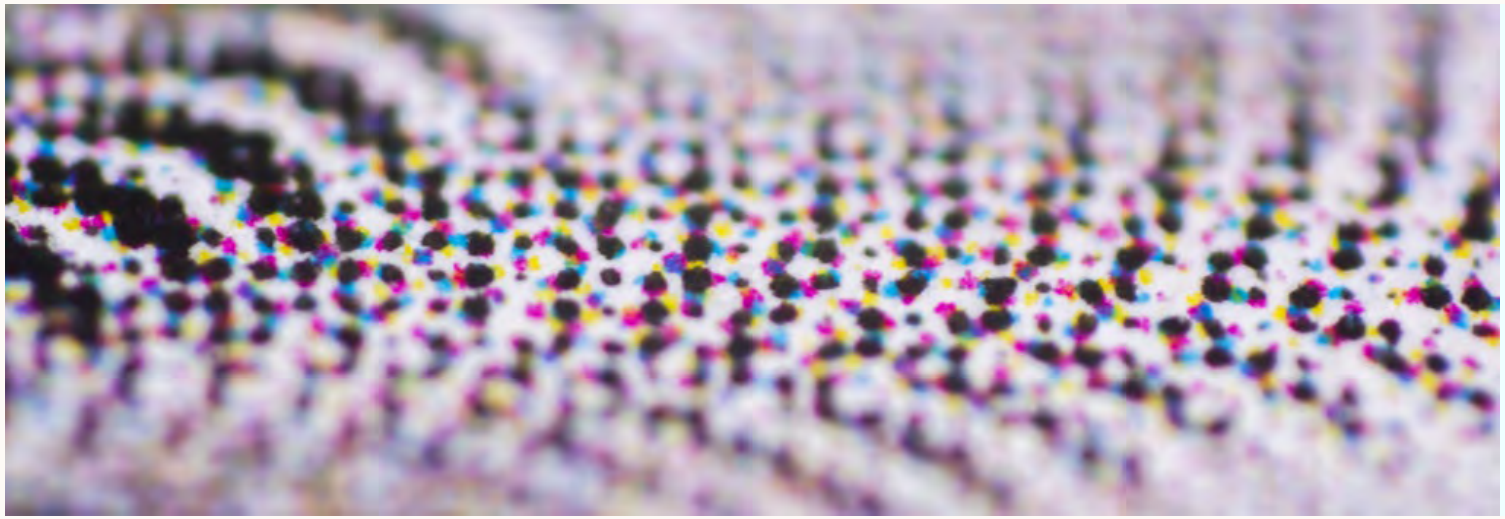
- **RGB**
  - RGB is known as an ‘additive’ color profile, because you add the primary colors of light together to create new colors
  - Colors begin as black and then red, green and blue light is mixed at equal intensity; they create pure white.
  - Exists exclusively in digital formats



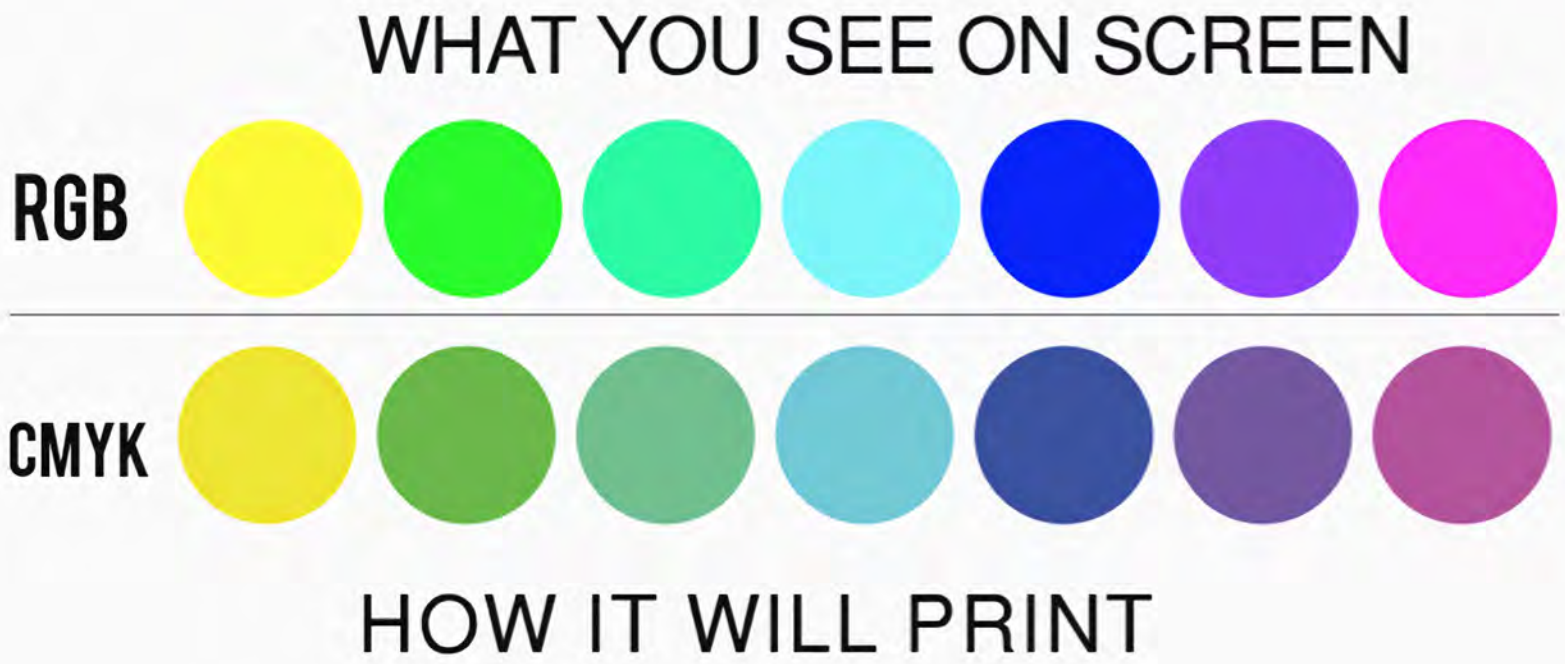


- **CMYK**
  - Comprises cyan, magenta, yellow and key(black), which combine to produce a range of hue.
  - Known as a ‘subtractive’ color profile, Subtractive color begins with white (paper) and ends with black; as color is added, the result is darker.
  - Used in commercial printing to create full-color graphics and images.
  - This four-color process works for any type of printer; you can see the four-color dots that layer to create different hues and gradations.
  - **DPI** refers to the physical **Dots of ink Per Inch** on a printed or scanned image

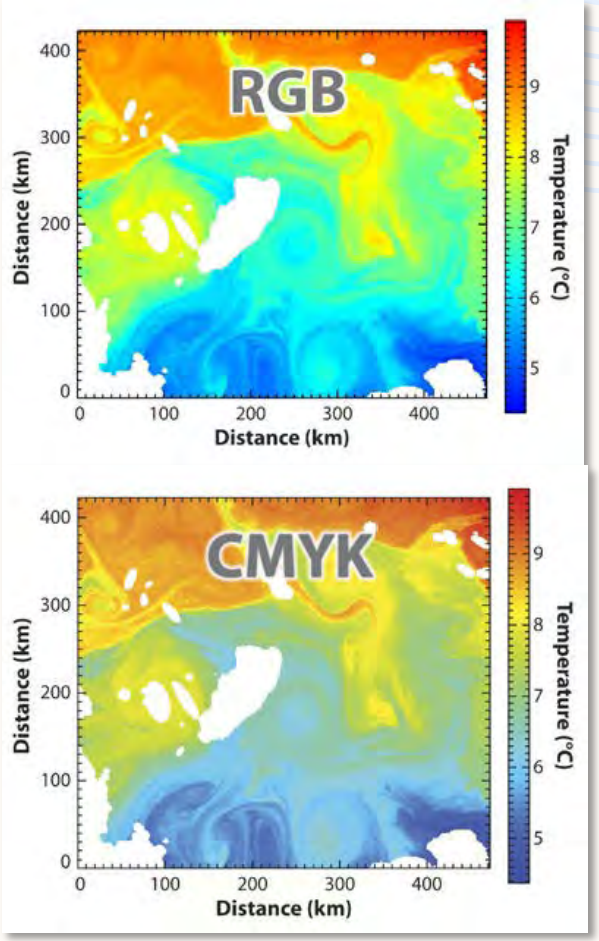




WHAT HAPPENS OF YOU PRINT RGB INSTEAD OF CMYK?



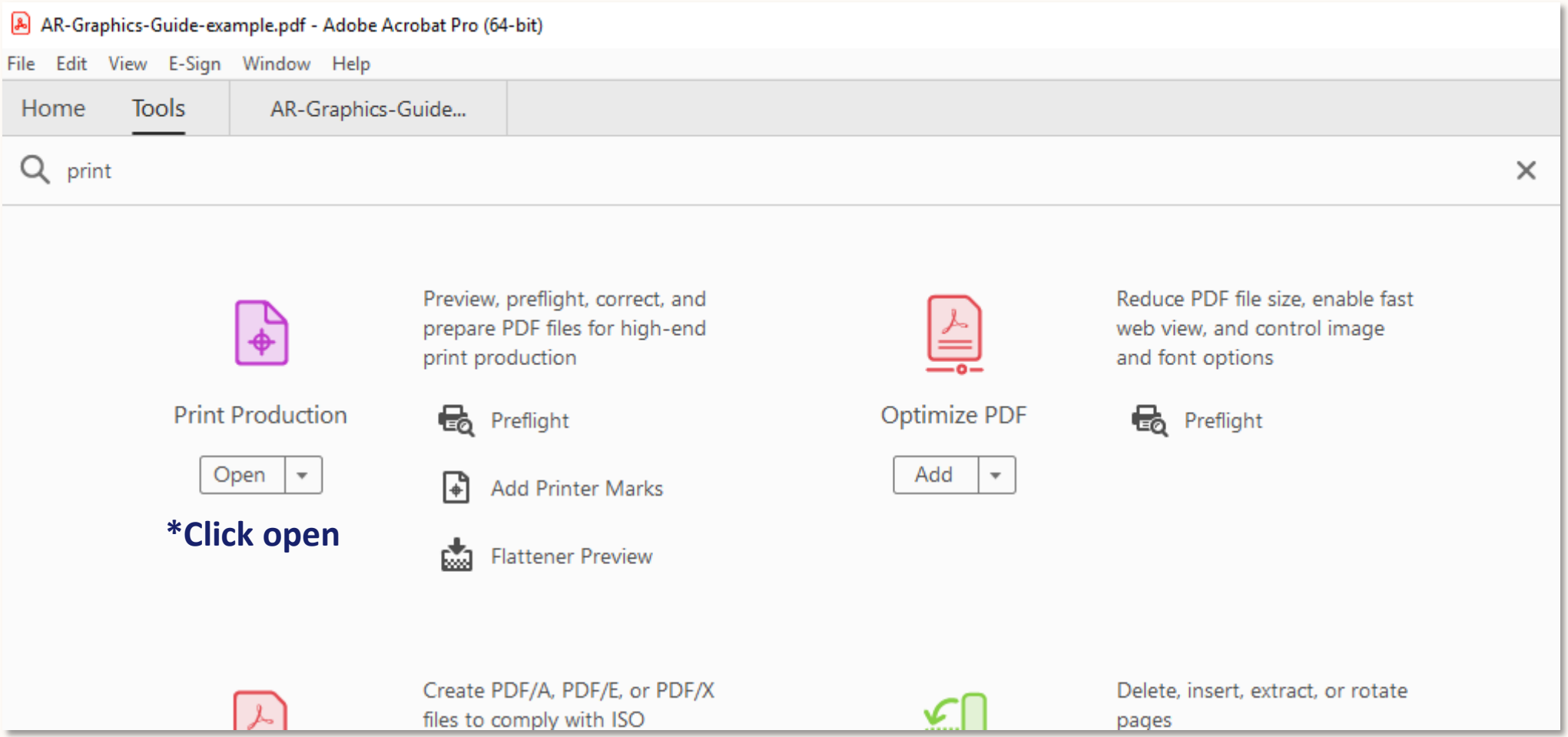
- The RGB color space is slightly larger than the CMYK color space due to the properties of transmitted versus reflected light
- Therefore, certain colors that can be shown RBG will look less bright when converted to CMYK.
- Most printers will convert your RGB file to CMYK, which can result in some colors appearing washed out



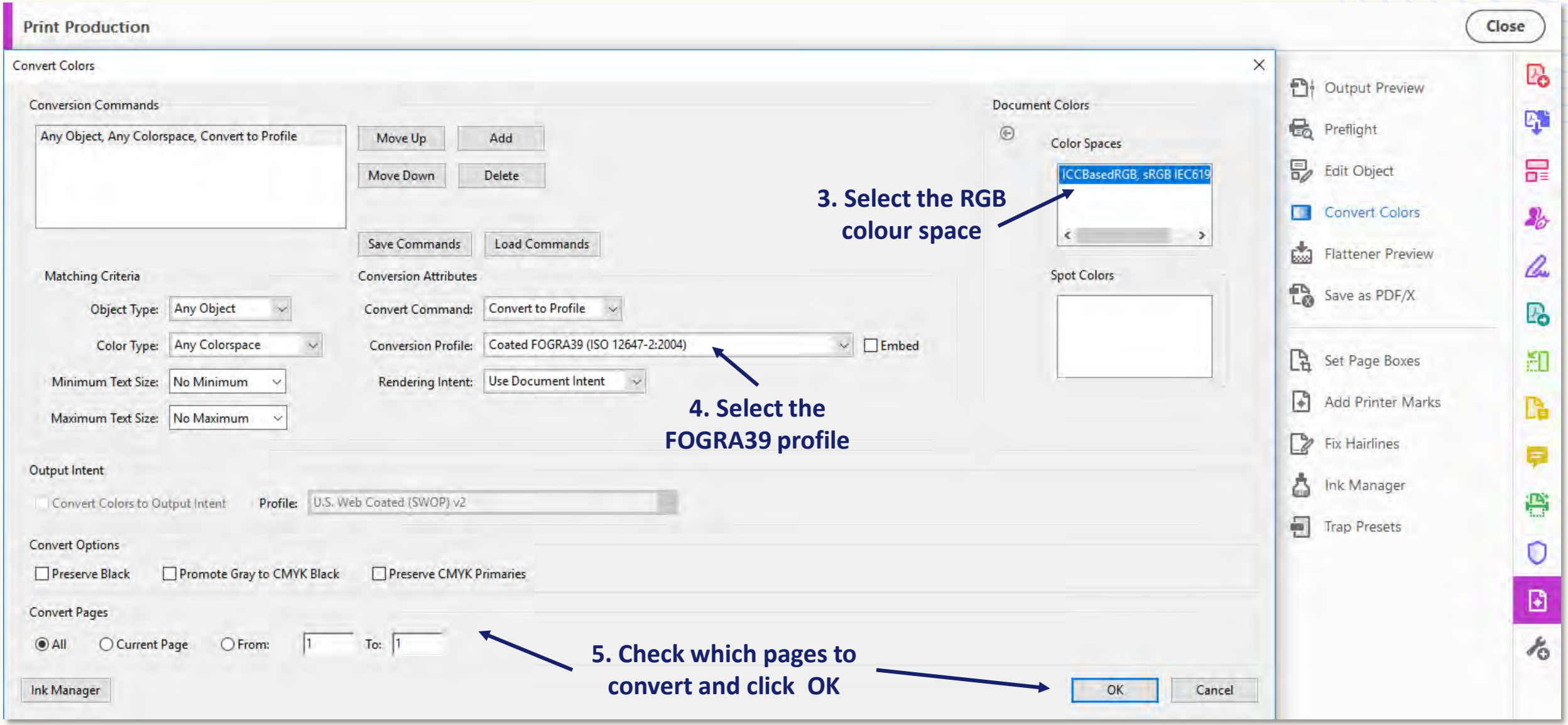
Example of the same image in RGB VS CMYK colour space

HOW TO CONVERT RGB TO CMYK COLOR?

- **PDF file in Adobe Acrobat**
  1. Open the PDF in Acrobat
  2. Choose Tools > Print Production > Choose Convert Colors



3. Select the RGB color space
4. Select the **FOGRA39 profile** (this is a print industry standard)
5. Check which pages you would like to convert and click OK



REMEMBER

“ RGB FOR SCREEN
CMYK FOR PRINT ”

Any colors produced with RGB on the digital space will not create the same output on the physical print.

GUIDE TO USING SCIENCE IMAGES FOR PUBLICATION

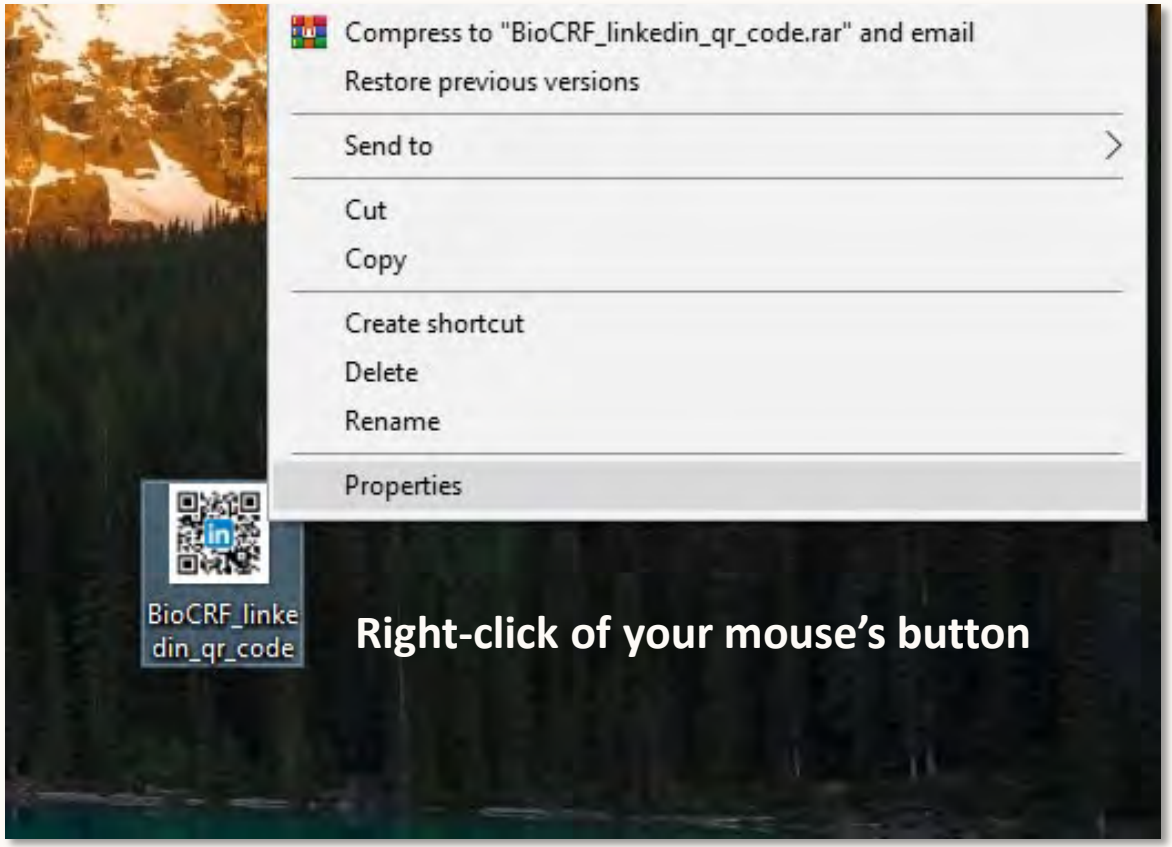
METHODS TO ADD DESIGN AND DATA TO GRAPHICAL ABSTRACT

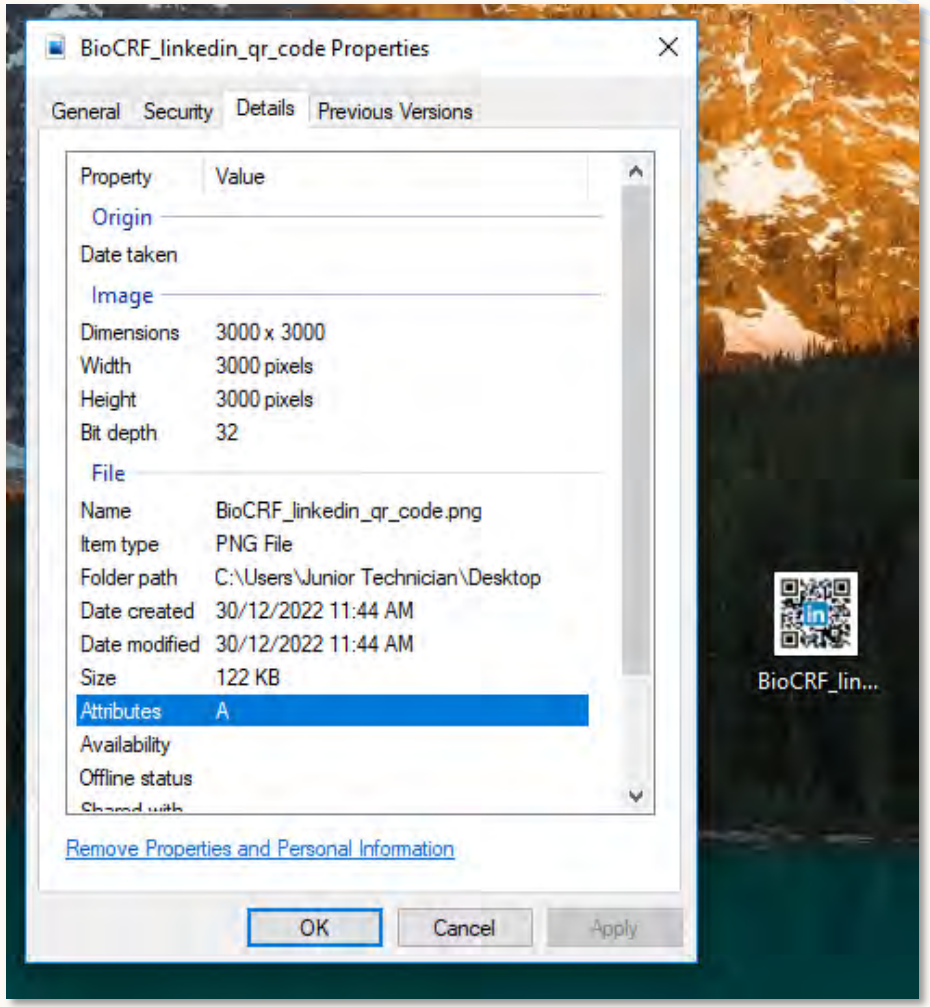
- **Download editable images and template designs that have appropriate copyrights.**
  - Download images from online databases such as Freepik.
  - Make sure that the images have high resolution and are permitted for use in publications with attribution.
- **Draw your own illustrations.**
  - Draw illustrations using Adobe illustration, power point…
- **Import and optimize graphs from software such as Excel.**
  - Graphing software has a lot of designs that will allow you to design and export graphs that match your graphical abstract color, size and spacing.
- **The most important aspect of downloaded image or scientific figure – resolution**
  - A low-resolution image will have around 72 PPI
  - Most scientific journals require images and figures to be at least 300 PPI/DPI
  - "**PPI**" stands for **Pixels Per Inch** and is used when referring to digital file resolution
  - "**DPI**" stands for **Dots Per Inch** and is used for printing resolution.

HOW TO CHECK IMAGE RESOLUTION?

o In Windows OS

- Right-click on the file, select properties, then details and you will see the DPI in the image section, labeled horizontal resolution and vertical resolution.





HOW CAN I FIND COPYRIGHT-FREE IMAGES?

Types of copying licenses for scientific use:

- **Public Domain**
  - Images generally become public domain 70 years after the creator's death. If the copyright is not renewed on the creator's behalf, the image can become part of the ‘public domain’, and the copyright no longer applies.
- **Creative Commons license**
  - You can adapt and share the image in any way you like, but this license requires attribution, so you will need to include the original creator in the acknowledgements of the research paper, posters, and acknowledged on your presentation slides.
- **Stock Images**
  - Image databases that allow you to license the designs. Make sure to read the fine print on how you are allowed to use the image (e.g., personal and commercial uses).

ETHICAL CONSIDERATIONS

- **If you are using previously published figures:**
  - Be careful with the copyright, resolution, and sizing rules of using downloaded images in academic journals
  - Request permission from the copyright holders to adapt figures; include citations/ license / permission info in the captions
  - **Redrawing a figure does not change the copyright**; the original author would recognize the figure as theirs, permission to adapt/ modify the figure must be obtained

GUIDELINES FOR DESIGNING SCIENTIFIC ILLUSTRATIONS AND FIGURES

DESIGN PROCESS

THE IDEA

Consider your key message, target audience & timeline to refine the concept details

RESEARCH

Use your expert research skills to collate your inspiration for the design.

STYLE & LOOK

Select the style, color scheme & look of your graphic.

MOCKUP

Create the draft for your design.

EXPERIMENT

Play around with background, layout & typography.

“HOW TO MAKE GOOD FIGURES FOR SCIENTIFIC PUBLICATIONS?”

FOUR RULES TO CREATE HIGH QUALITY FIGURES

PURPOSE

- Is the figure explain a process, compare or contrast, show a change, or establish a relationship?

COMPOSITION

- What are the components of the figure and how do you arrange them to clearly show the purpose?

COLOUR

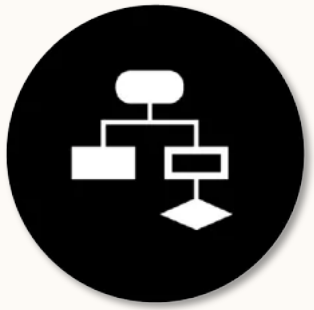
- Do you use color to focus on important information and to tell a compelling story?

CLARITY

- How easily do people understand the purpose of the figure?

Rule 1. Clearly show the main purpose to your audience

- **Here are the common types of graphs and figures**
  - **Explain a process**
    - Flow chart, diagram, infographic, Gantt chart, illustration, and timeline, etc.

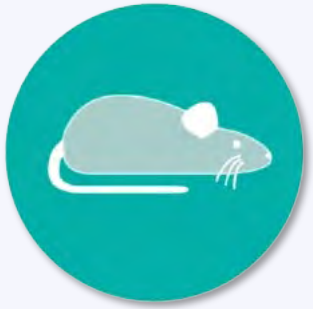


Flow Chart

Diagram

Infographic

Gantt Chart



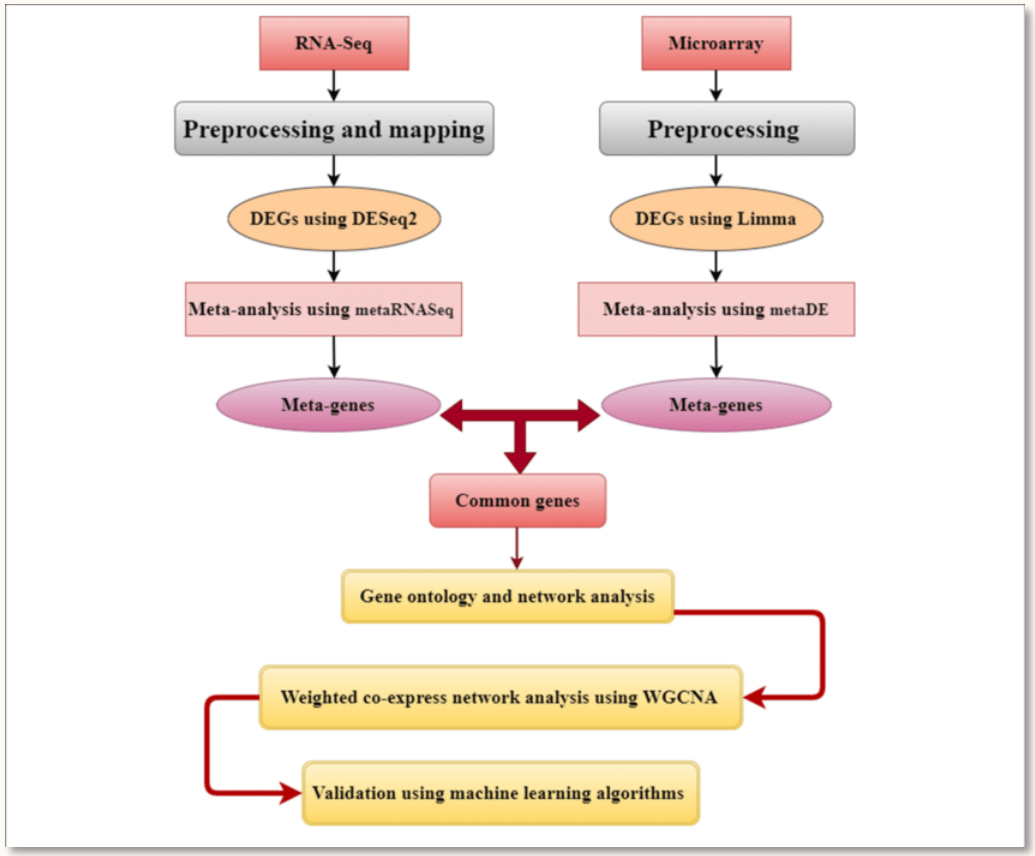
Illustration

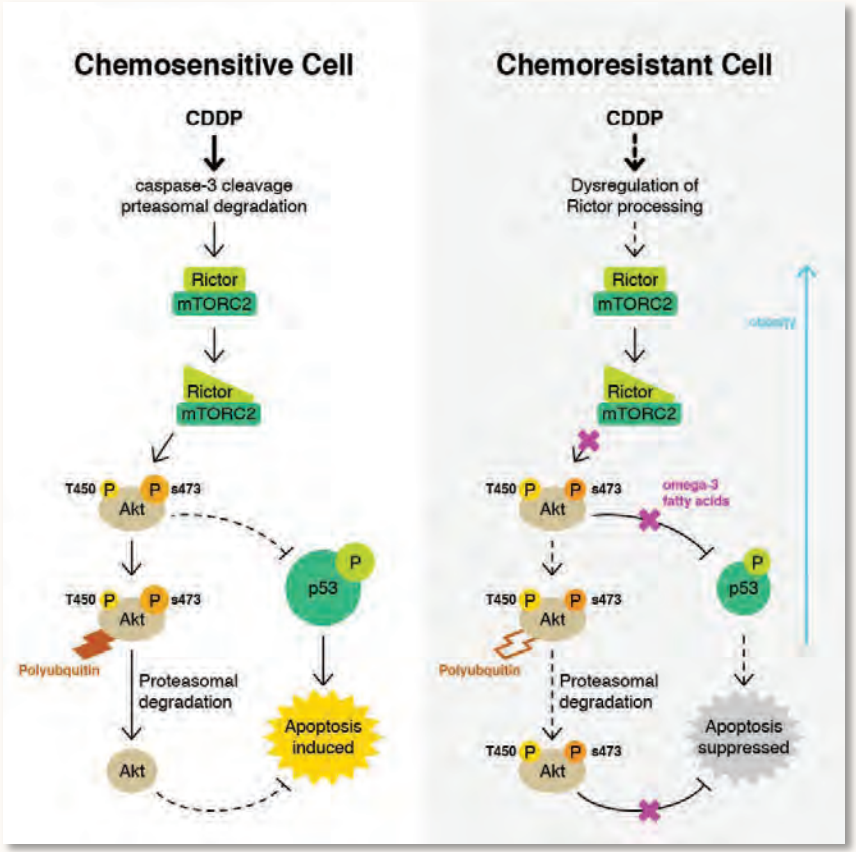
Timeline

❖ **They could quickly help your audience understand your research methods or scientific model.**

For example: Flow Chart

- Shows the steps in a process
- Visualizing the sequence of actions or information needed for training, documenting, planning, and decision-making.





Rule 1. Clearly show the main purpose to your audience

- **Compare, contrast, or show a change**
  - Bar chart, line chart, box & whisker, bubble chart, stacked area, and pie chart, etc.

Bar Chart

Line Chart

Box & Whisker

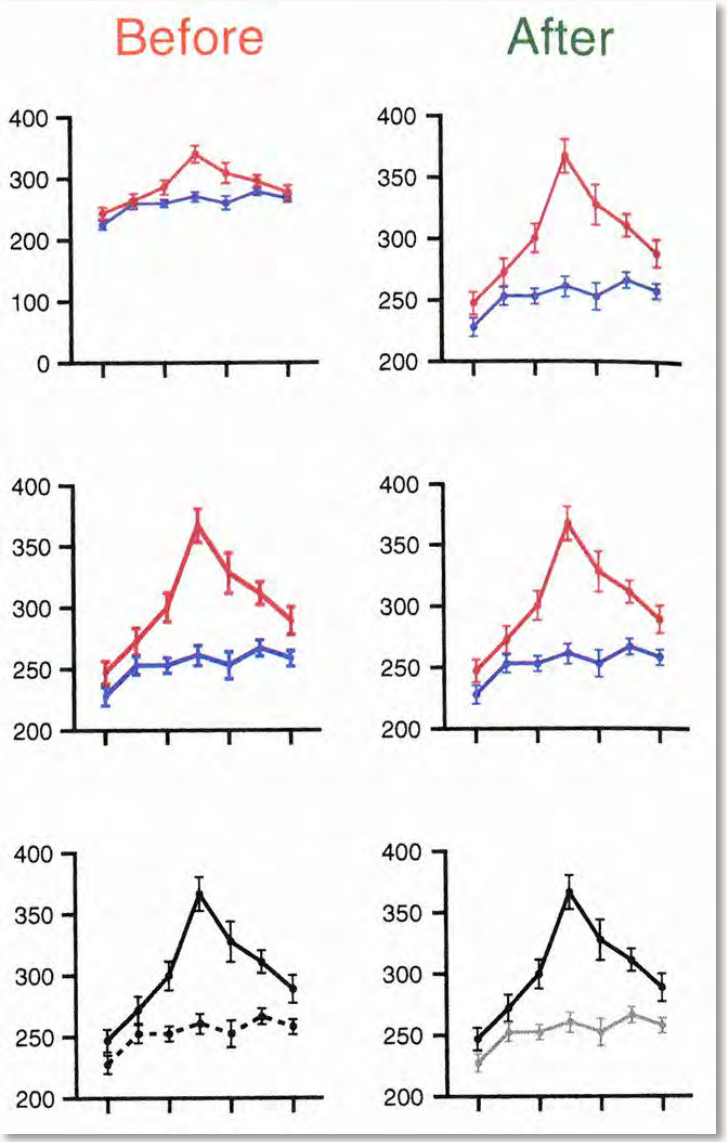
Bubble Chart

Stacked Area

Pie Chart

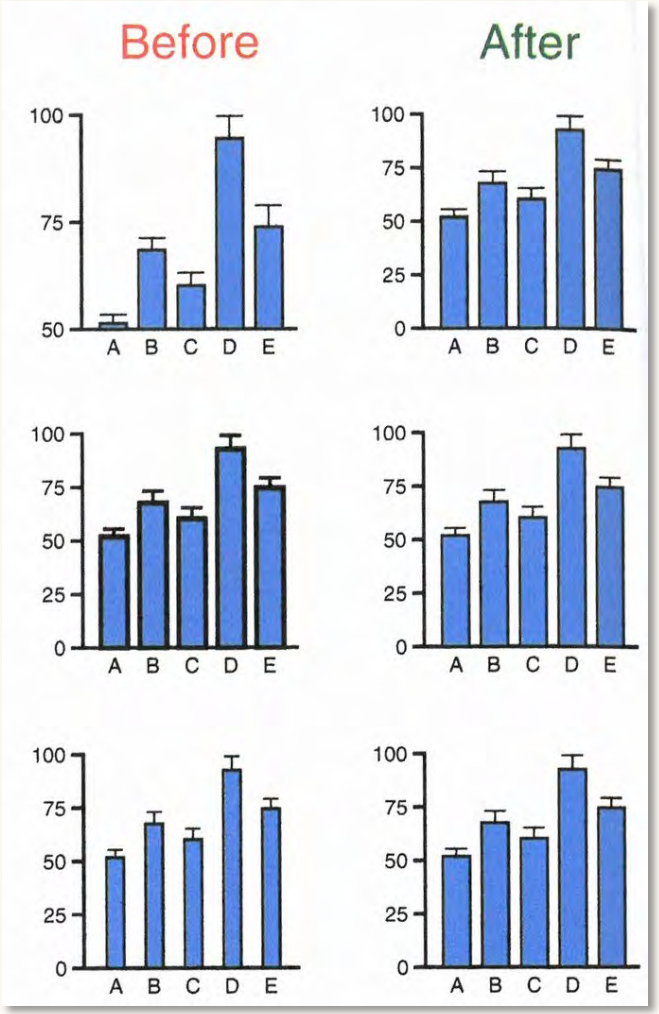
❖ **Help you highlight contrasts or compare your datasets.**

For example: Line Chart

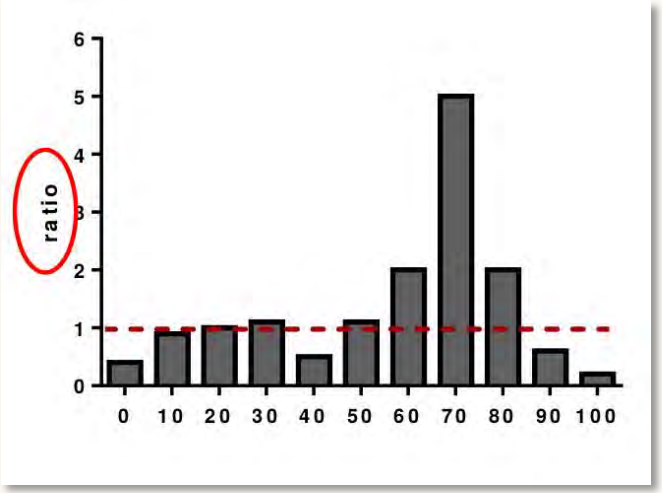


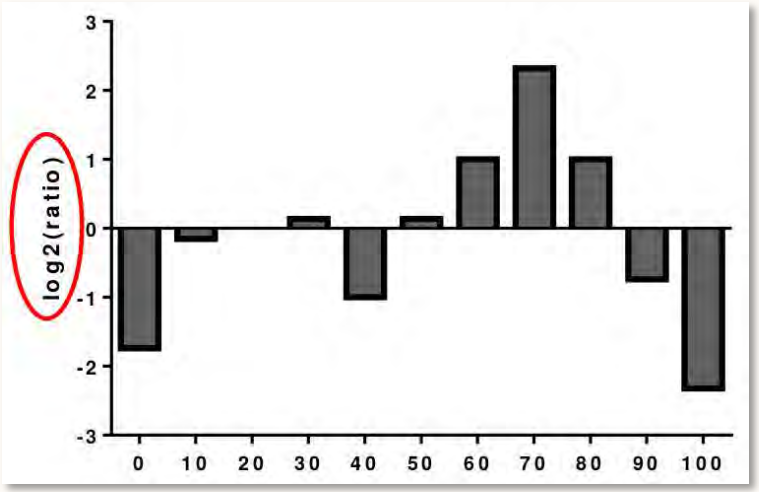
- To show a trend of continuous data (usually over time)
- Suitable for matched, paired, or repeated data, as well as for time-series.
- To tell a story about how data change, rather than just showing discrete values of the data.

For example: Bar Chart



- To compare discrete quantities of non-continuous data
- Useful for presenting results and emphasizing differences.





- The choice of the x axis and point of reference can affect how comparisons are perceived

Rule 1. Clearly show the main purpose to your audience

- **Establish a relationship**
  - Network diagram, heatmaps, maps, radar chart, mosaic chart, venn diagram, chord diagram or arc diagram, etc.

Network diagram

Heat maps

Maps

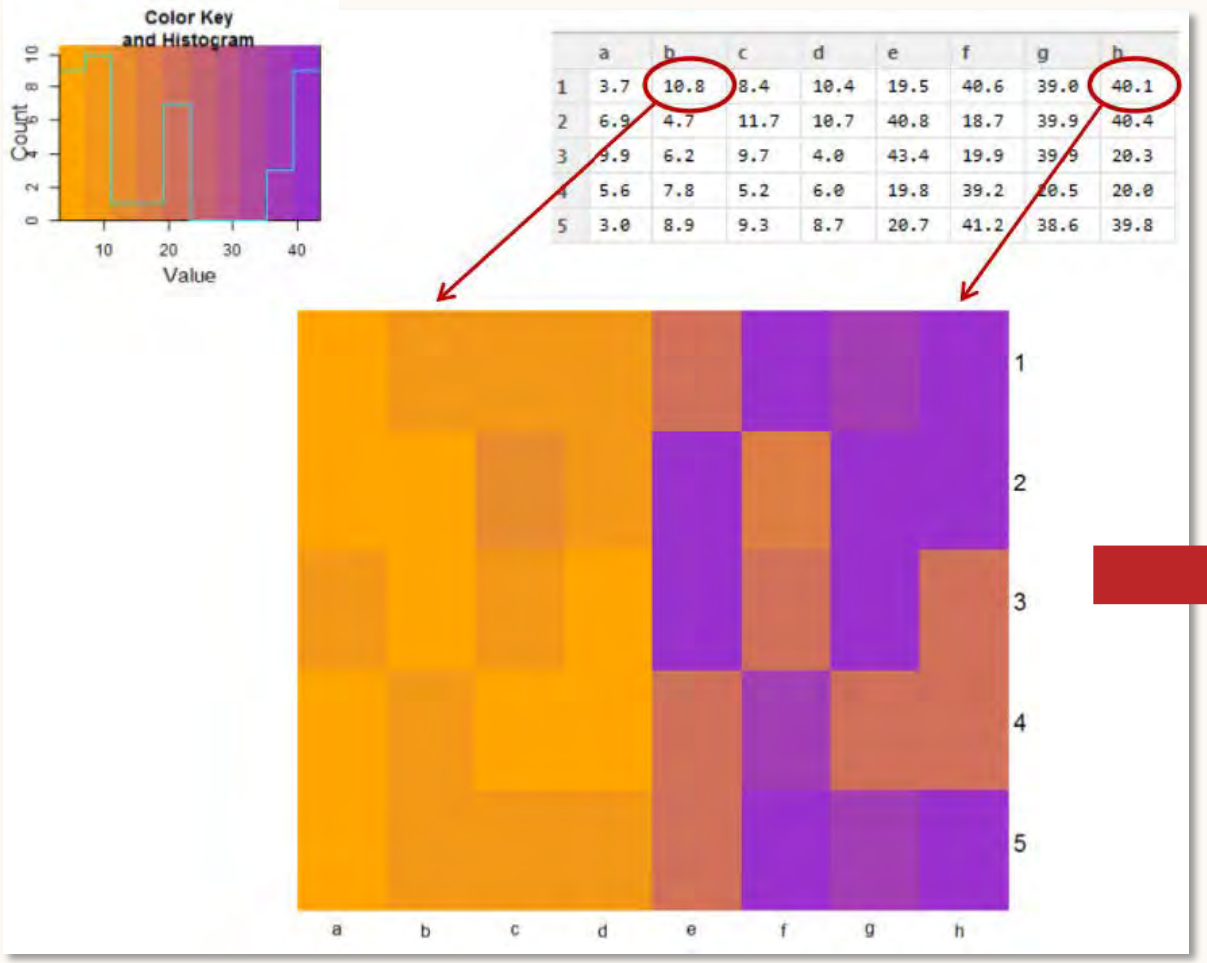
Radar chart

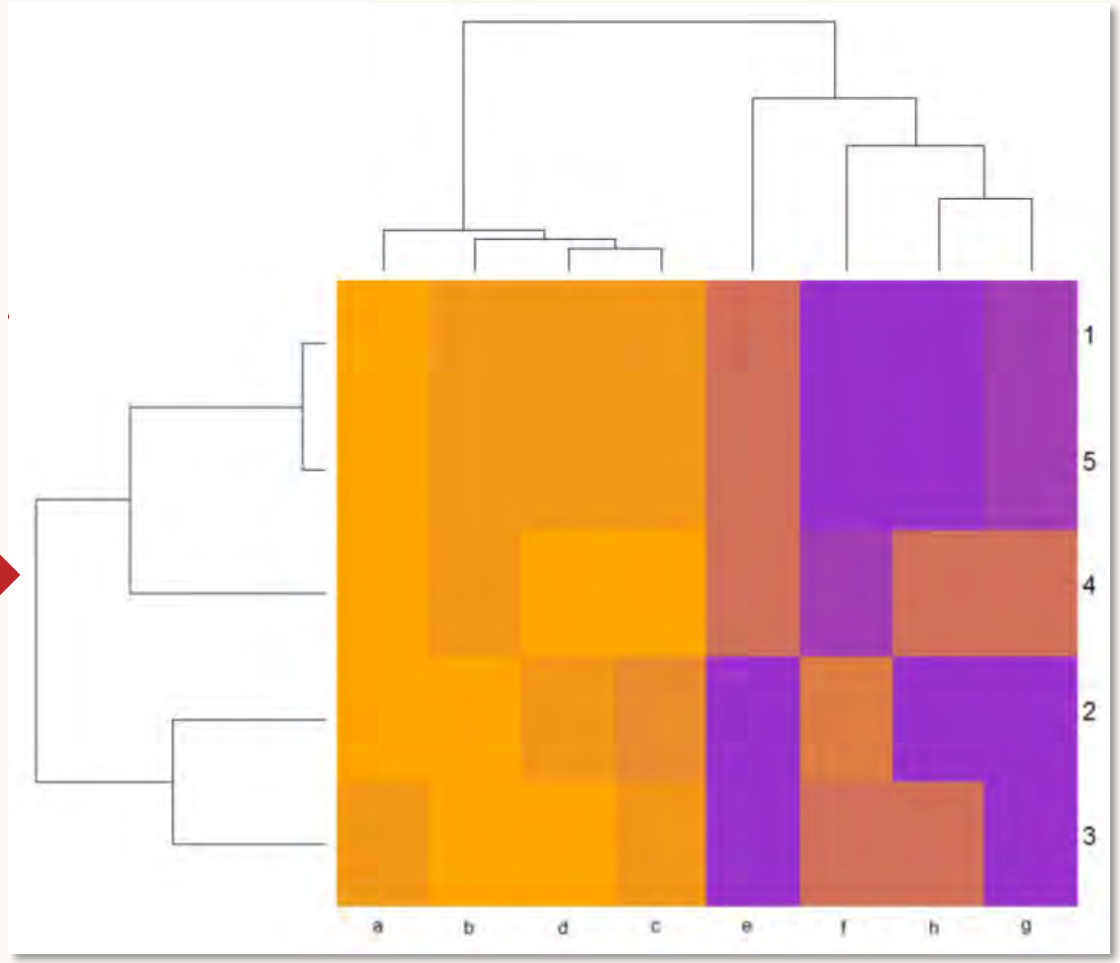
Mosaic diagram

Venn Diagram

- **Highlight the relationship between datasets and can help you highlight the main point in their connection.**

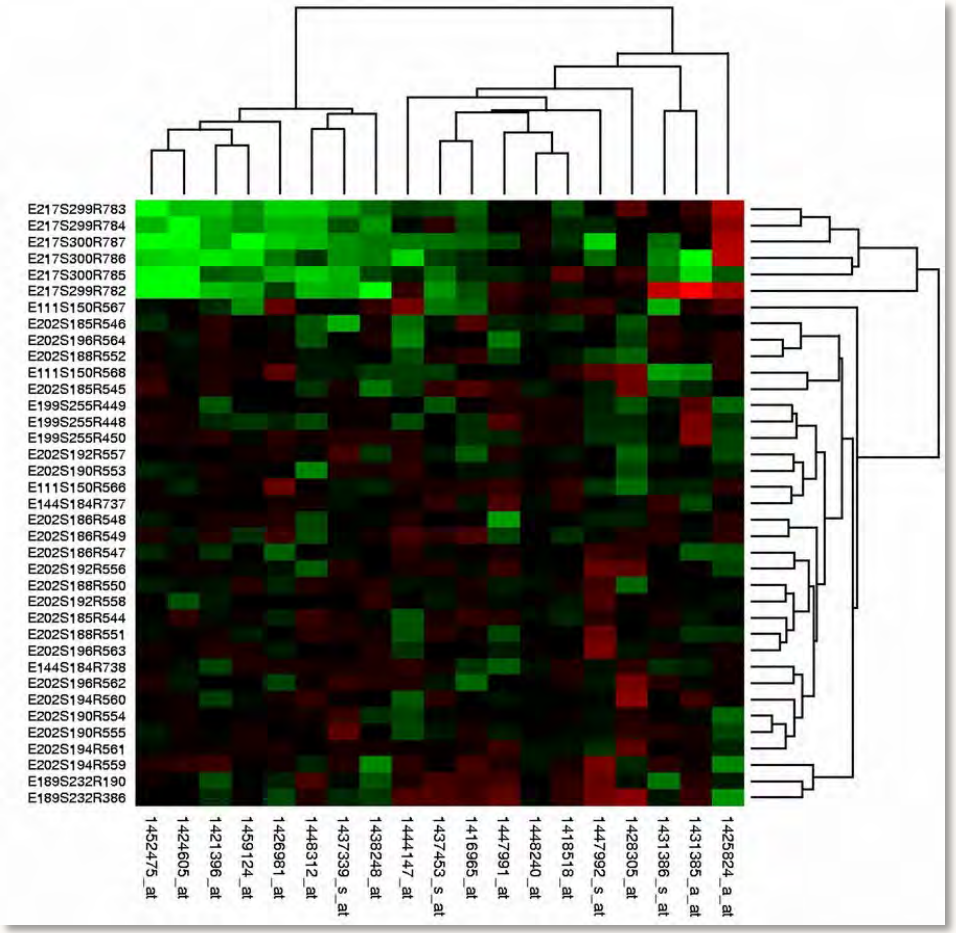
For example: Heatmap

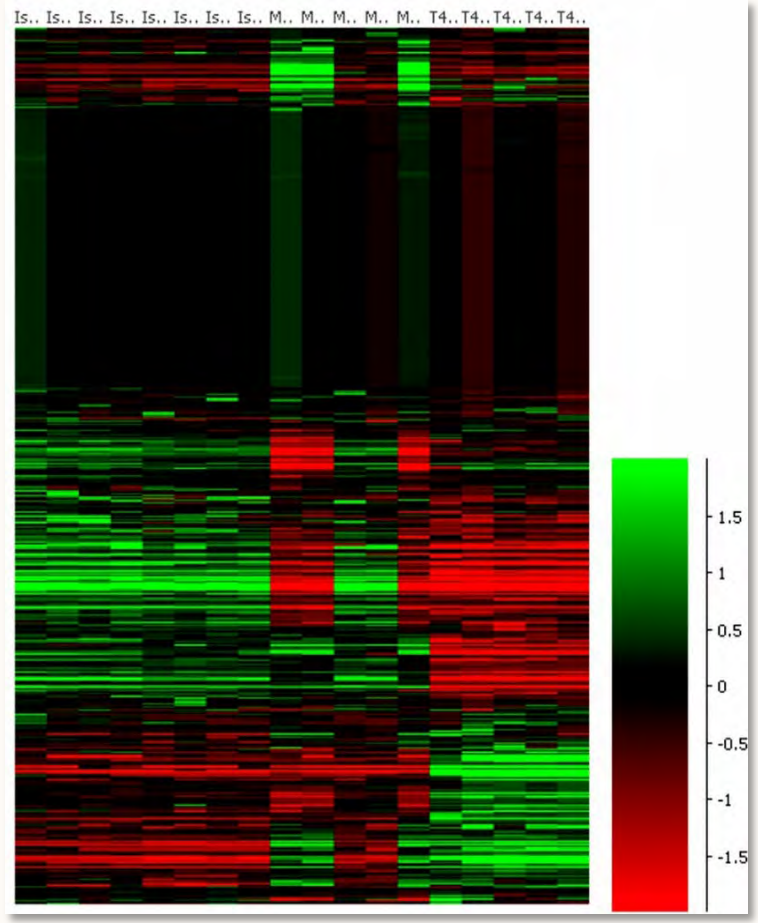




- A heatmap is essentially a table that uses colors instead of numbers.
- Can be used for grouping data through clustering

For example: Heatmap





- Used to show relationships between two variables, one plotted on each axis.
- The more intense the color, the greater the number represented on the figure.

- Heatmaps are great but be careful with clustering
- Best to plot data that are changing
- Remove unchanging points to focus on differences.

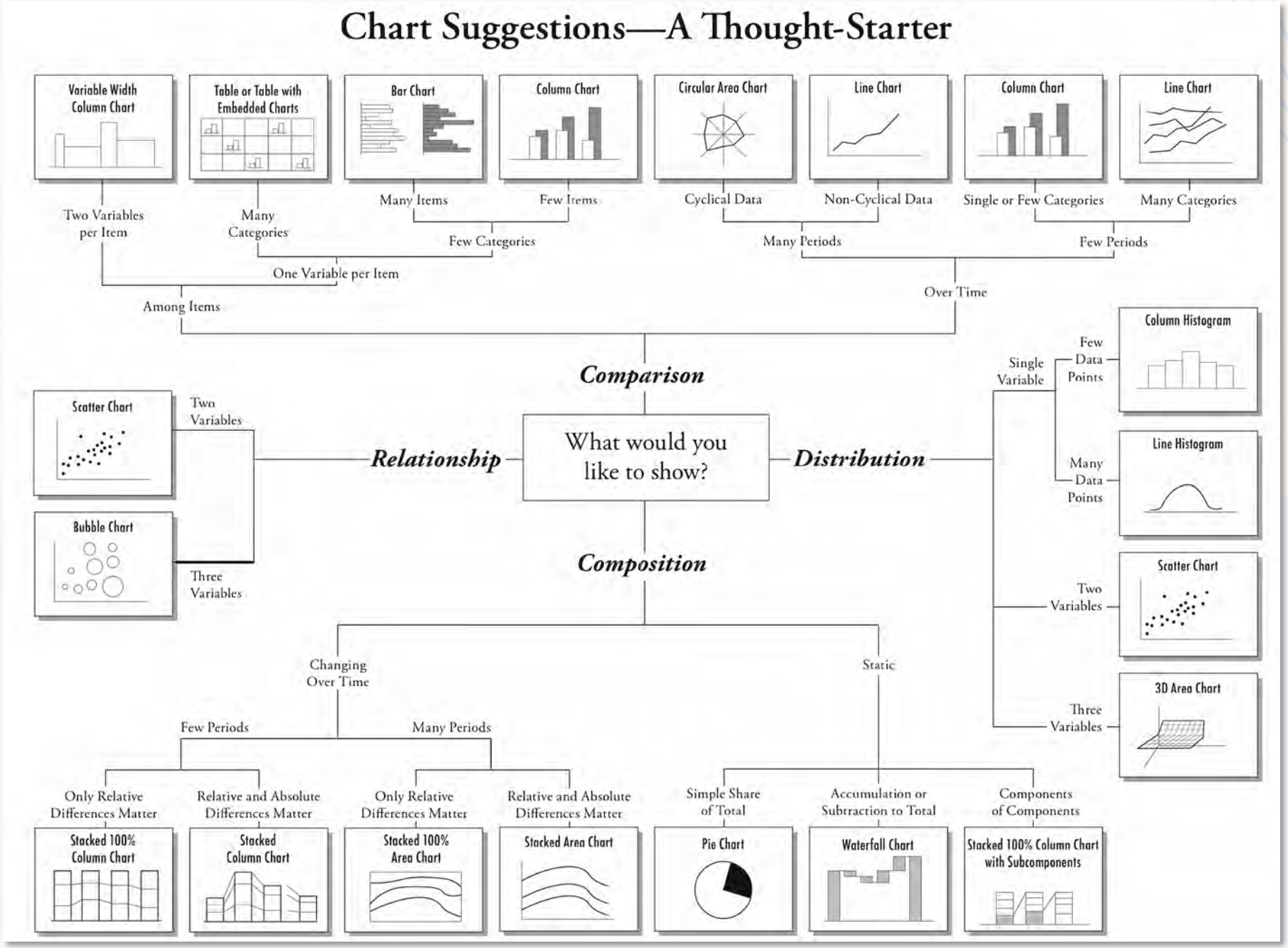
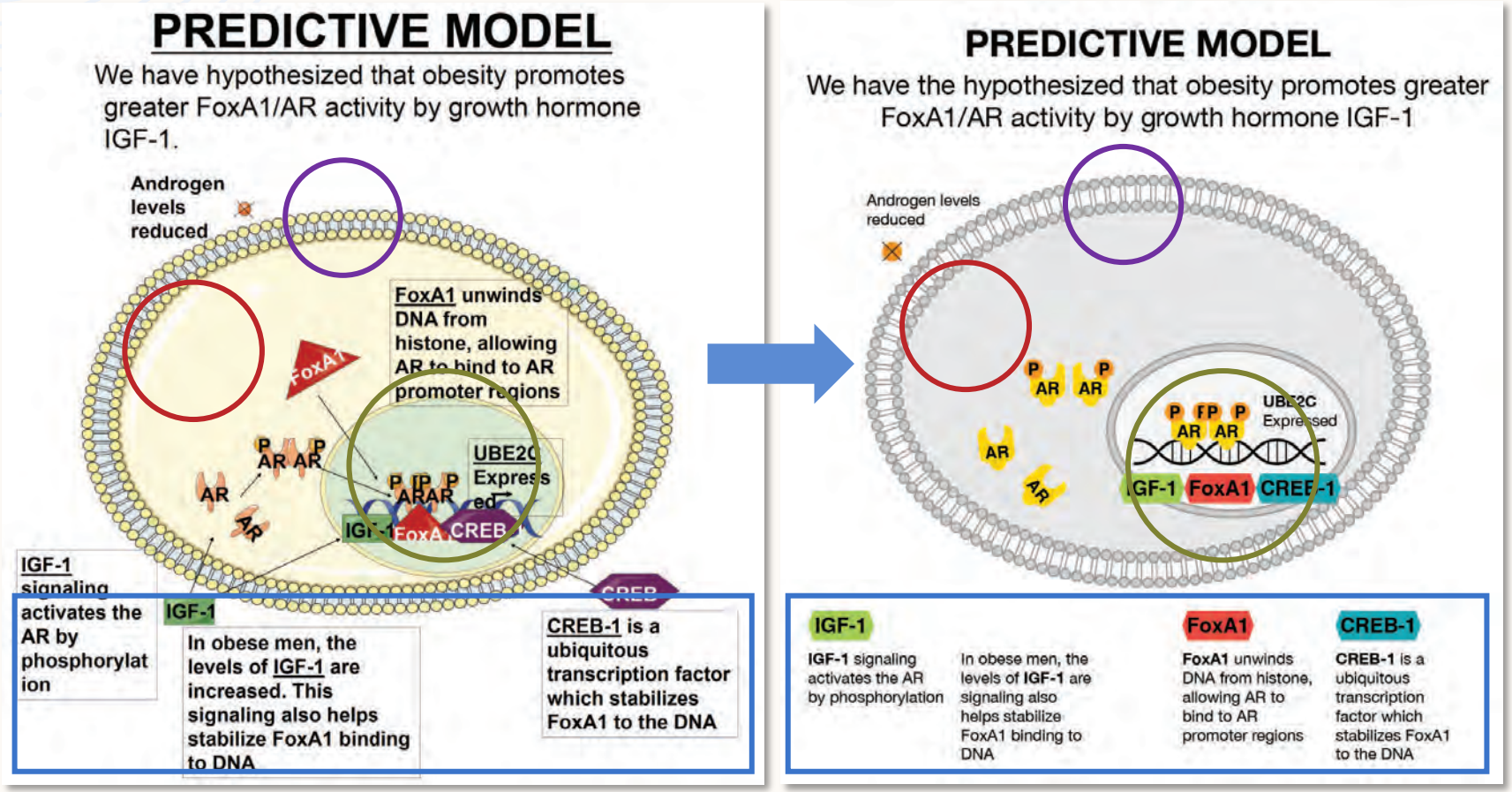


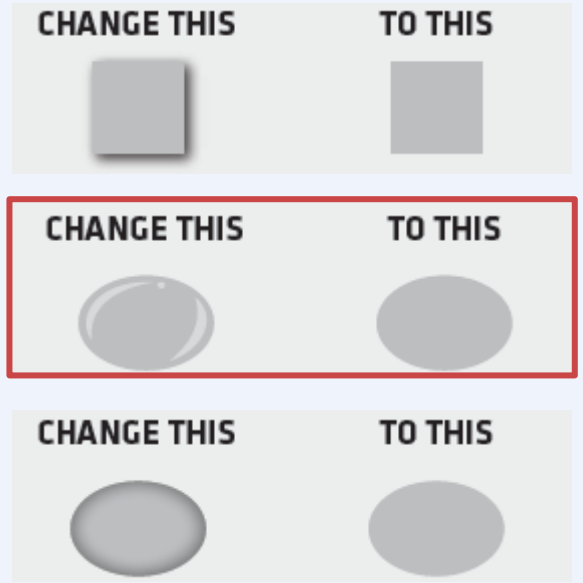
Chart Suggestions—A Thought-Starter
What would you like to show?
Comparison
Relationship
Distribution
Composition
Variable Width Column Chart
Table or Table with Embedded Charts
Bar Chart
Column Chart
Circular Area Chart
Line Chart
Column Chart
Line Chart
Two Variables per Item
Many Categories
Many Items
Few Items
Few Categories
Cyclical Data
Non-Cyclical Data
Many Periods
Single or Few Categories
Many Categories
Few Periods
One Variable per Item
Among Items
Over Time
Scatter Chart
Bubble Chart
Two Variables
Three Variables
Single Variable
Few Data Points
Many Data Points
Column Histogram
Line Histogram
Two Variables
Three Variables
Scatter Chart
3D Area Chart
Changing Over Time
Static
Few Periods
Many Periods
Only Relative Differences Matter
Relative and Absolute Differences Matter
Only Relative Differences Matter
Relative and Absolute Differences Matter
Simple Share of Total
Accumulation or Subtraction to Total
Components of Components
Stacked 100% Column Chart
Stacked Column Chart
Stacked 100% Area Chart
Stacked Area Chart
Pie Chart
Waterfall Chart
Stacked 100% Column Chart with Subcomponents

Rule 2. Use composition to simplify the information



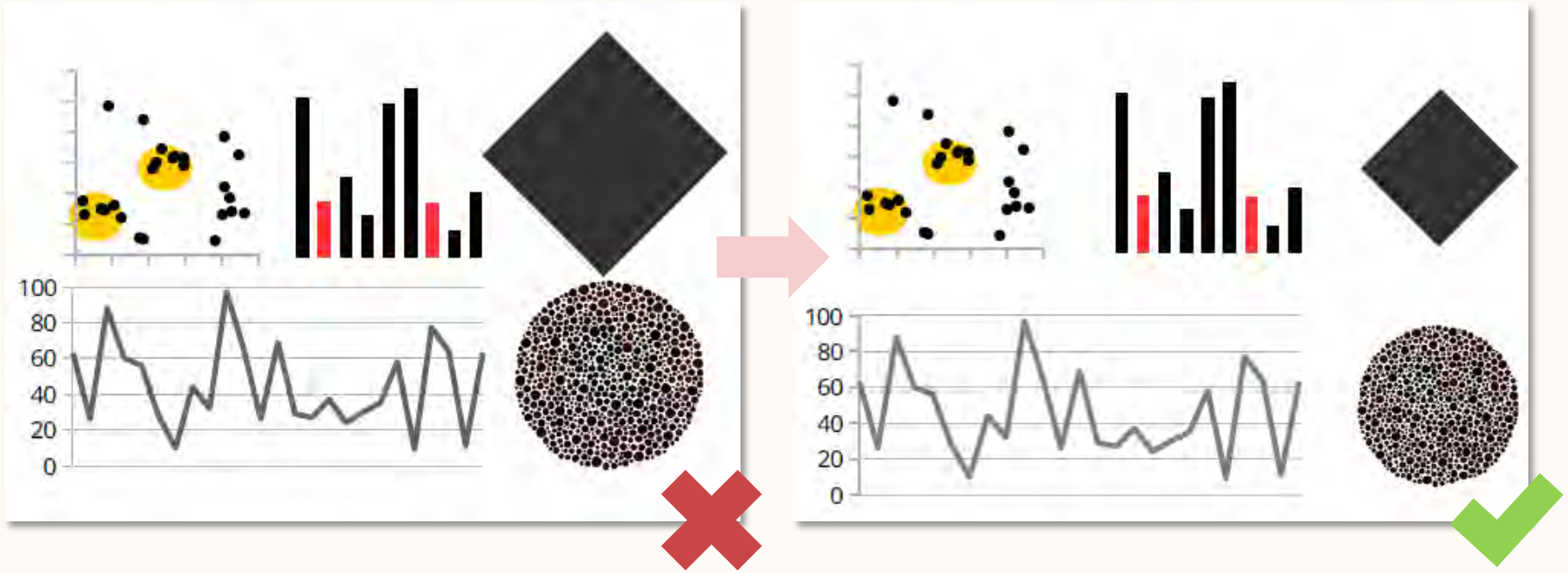
❑ **The overall arrangement of your figures**

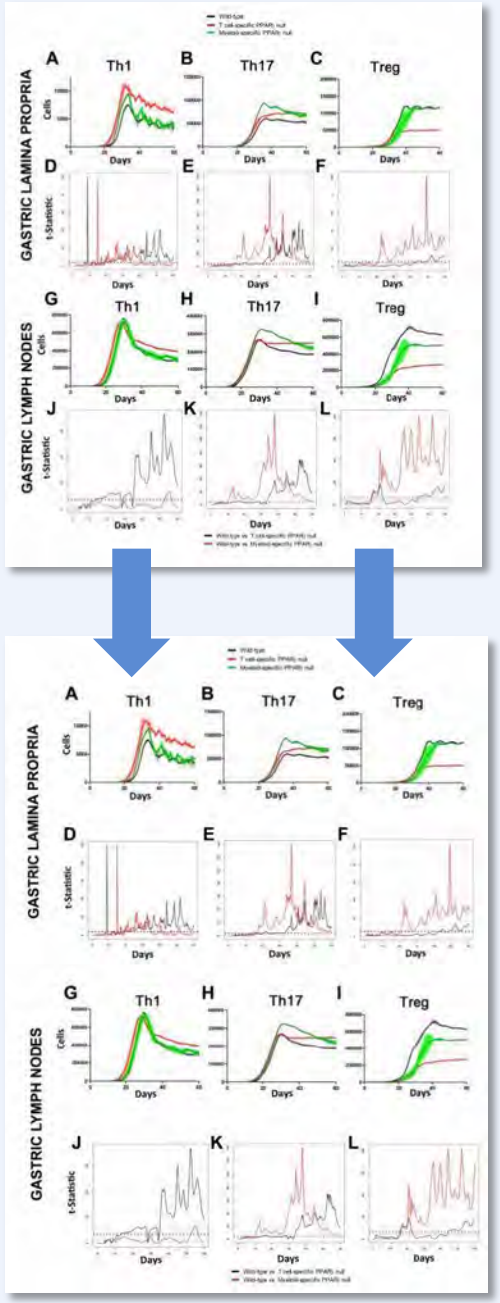
- Design flow should be from left to right, top to bottom or in logical flow
- Make sure the most important data is the focus of the design
- Remove or adjust excess data and text
- Make text easy to read
- Reduce contrast of bold lines
- Remove repeated elements
- Remove shadows



Rule 2. Use composition to simplify the information

- **Visual balance**
  - A measure of how much an object on the page attracts and retains the attention of your viewer
  - Keep a balance between white space, text and figures

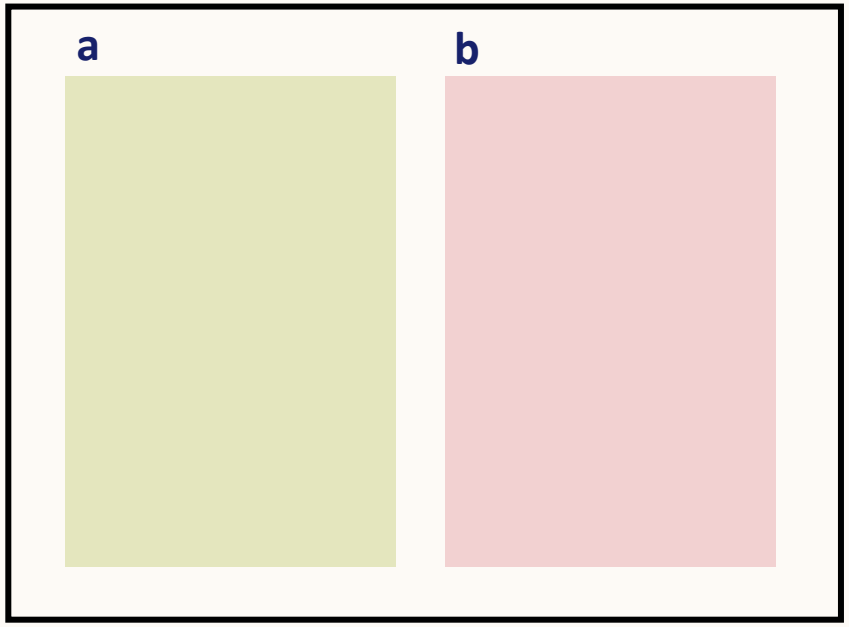


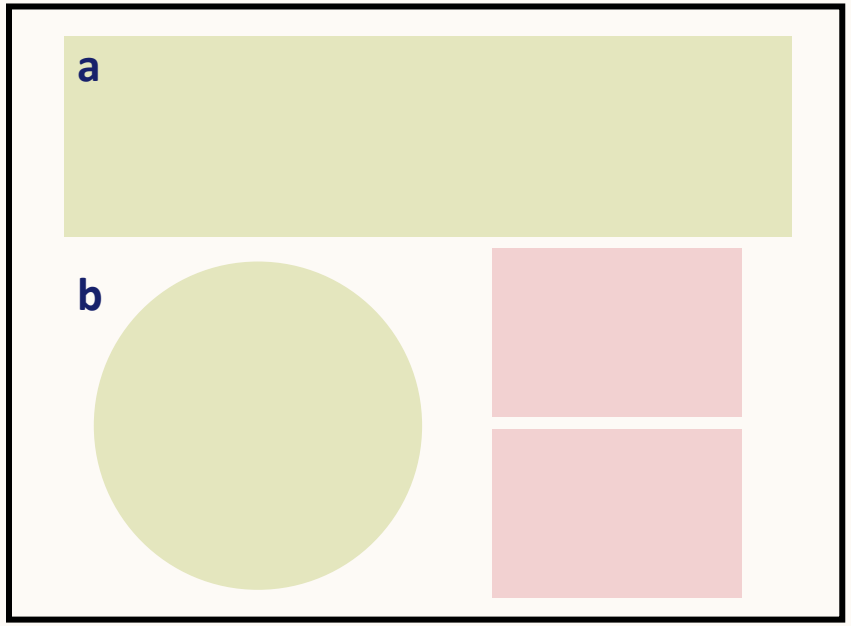


Rule 2. Use composition to simplify the information

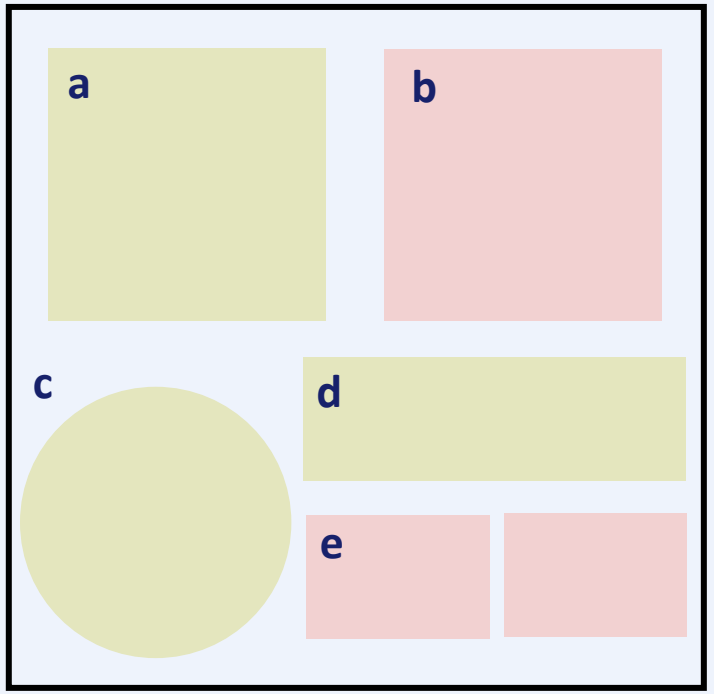
❑ No overcrowded figures

- Avoid trying to fit too much information into a small space
- This can cause cognitive overload and reduces comprehension
- Labels and images that are too small are not accessible or legible for those with visual impairments





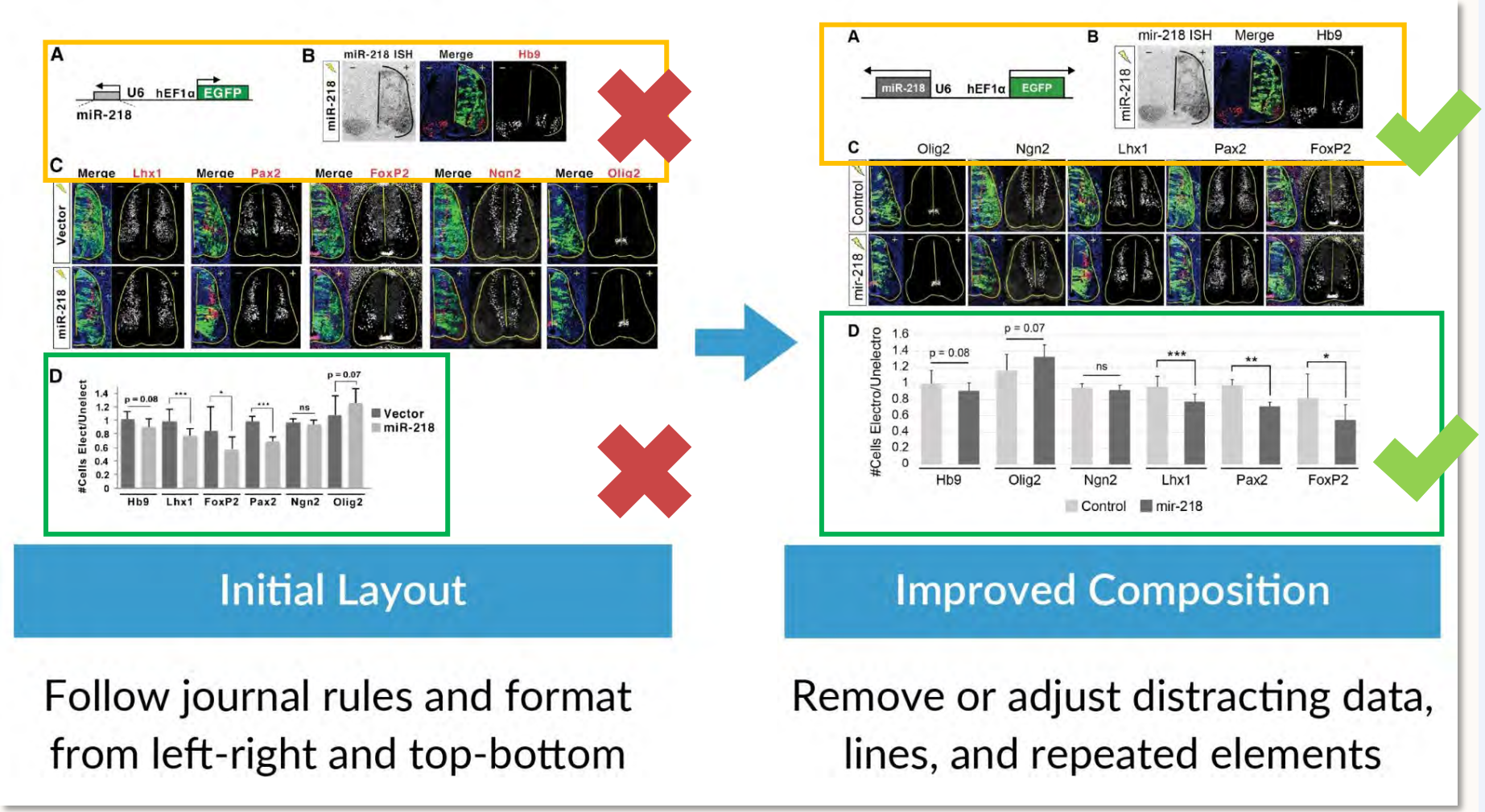
Do give images the space they require to be legible, with at least 7-point size text in your draft figures



Don't cram lots of panels and small labels into one figure

Rule 2. Use composition to simplify the information

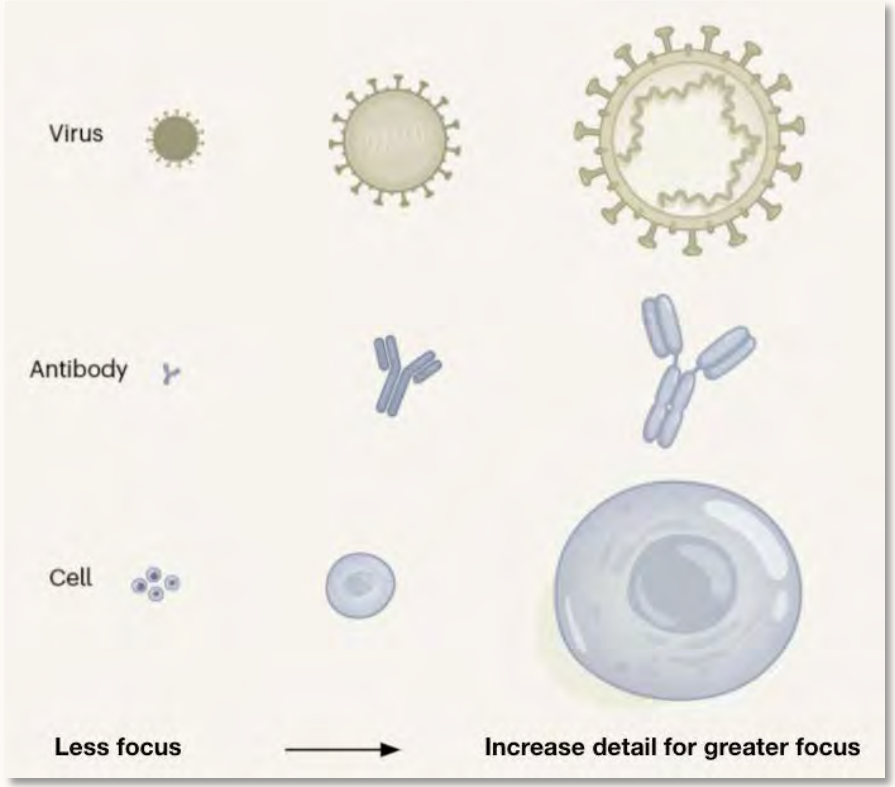
- **For example:**



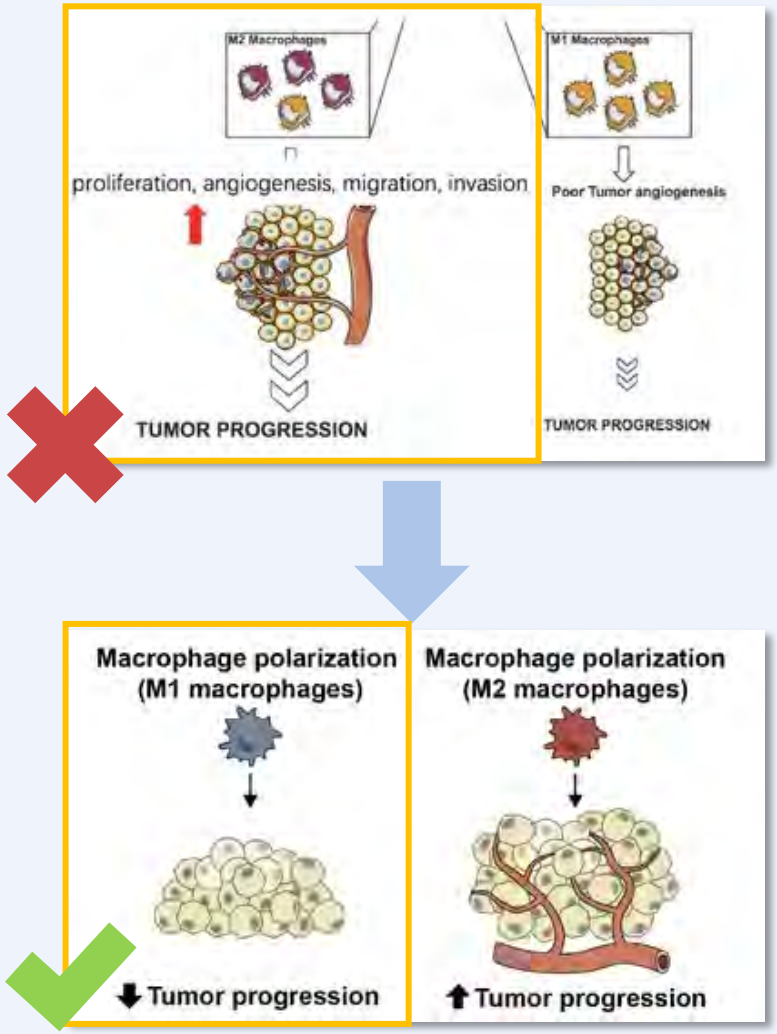
- Taking an initial layout (figure on the left) and then use formatting to fill the space, simplify information
- Reorder the data to show the main purpose of the research more clearly.

Rule 2. Use composition to simplify the information

- **Hierarchy**
  - The composition of a graphic object and the emphasis on each element will determine the hierarchy between the elements and how the eye will flow and where it will focus



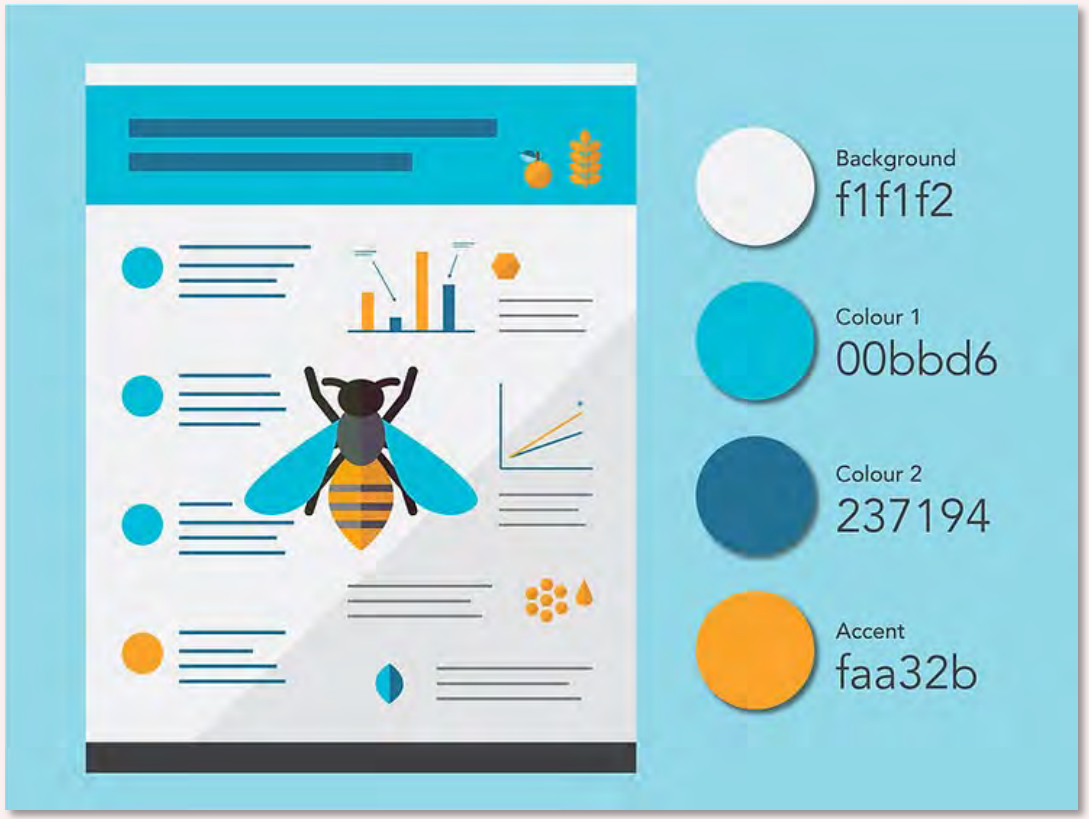
- **Drawing for focus**
  - For areas of focus, add depth and detail
  - For areas of less focus, simplify



The story behind this figure is that M1 macrophages help suppress tumor growth and M2 macrophages promote tumor growth.

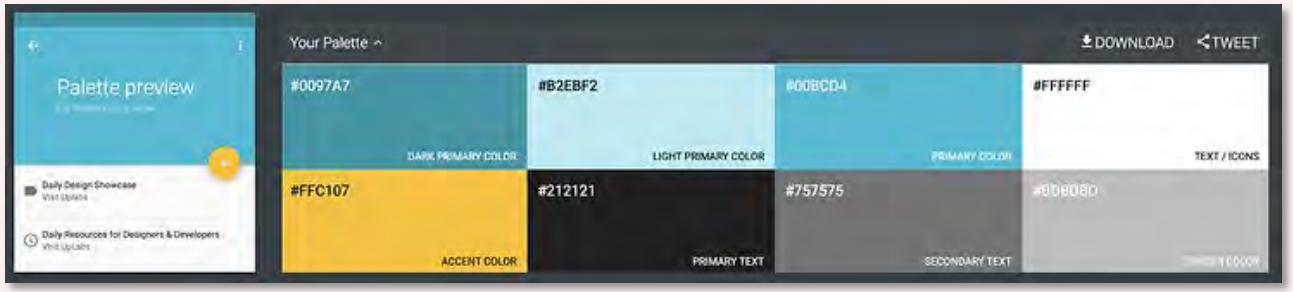
Rule 3. Use colors to highlight the main points of the figure

- **Too many color/ random uses of color**
  - The most important elements of a figure should be the most saturated and weighted by significance, with background elements in a neutral tone.
  - Use a consistent color palette for areas of focus within each figure or set of figures.



Material Palette

- An online colour palette generator
- Simply pick 2 colors that you like, and it'll give you recommendations on how to put them in use on your poster.
- Then, download the palette and use the eye-dropper tool to sample the colors.

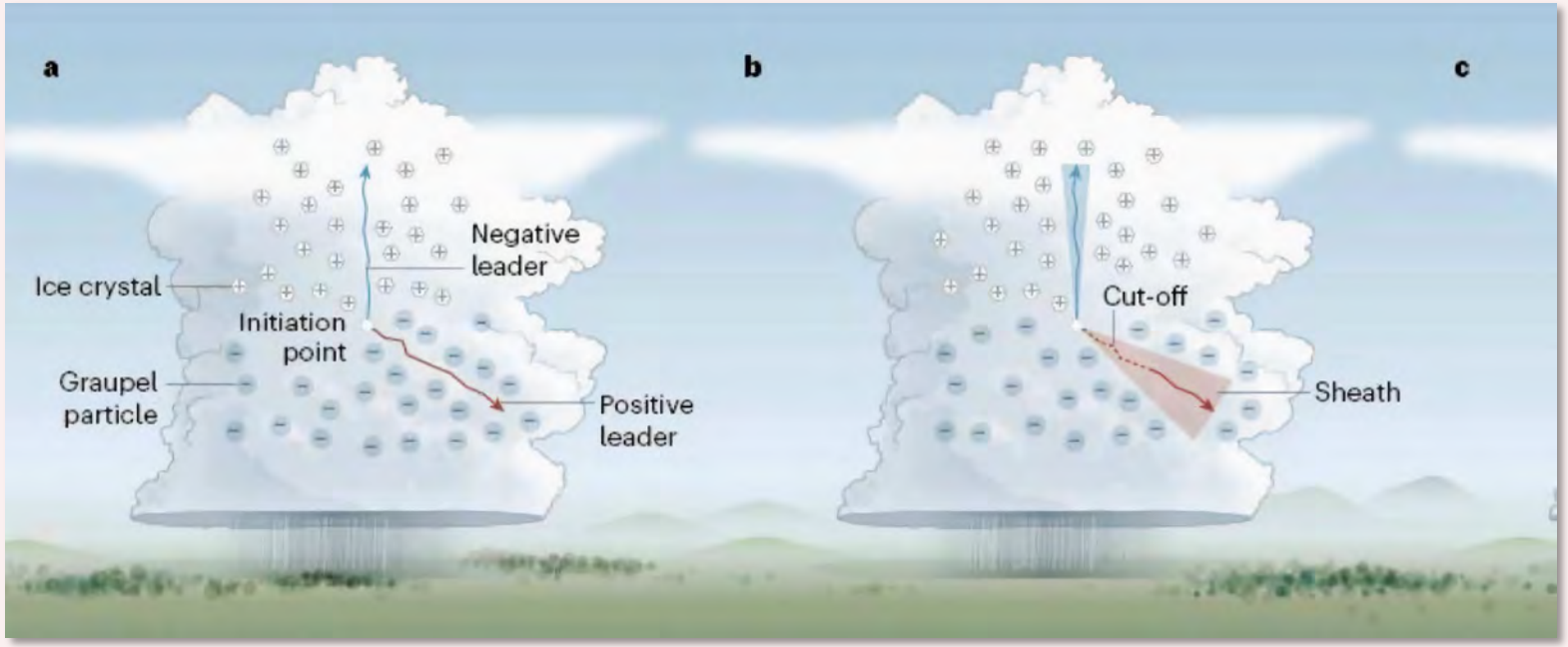


Rule 3. Use colors to highlight the main points of the figure

- **We use color thoughtfully , for:**
  - Hierarchy
  - Categorizing information
  - Scientific conventions or real-world depictions (color as found in nature, as appropriate)

❖ **Representations of the natural world**

- Such as plants , animals, bodies of water and environmental scenes, can be drawn realistically as needed, using the extended colour palette.
- This is usually necessary when they are the focus of an illustration, rather than in the background

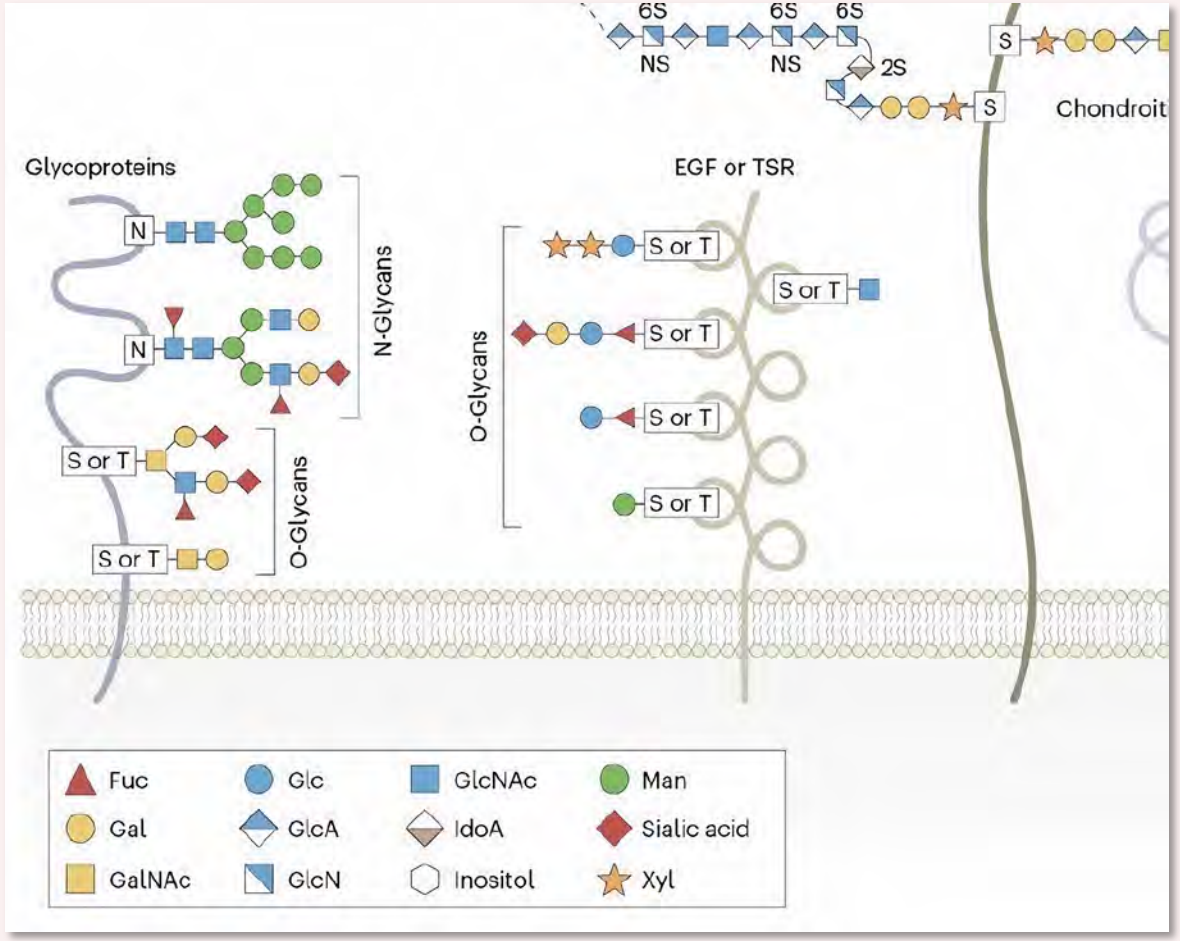


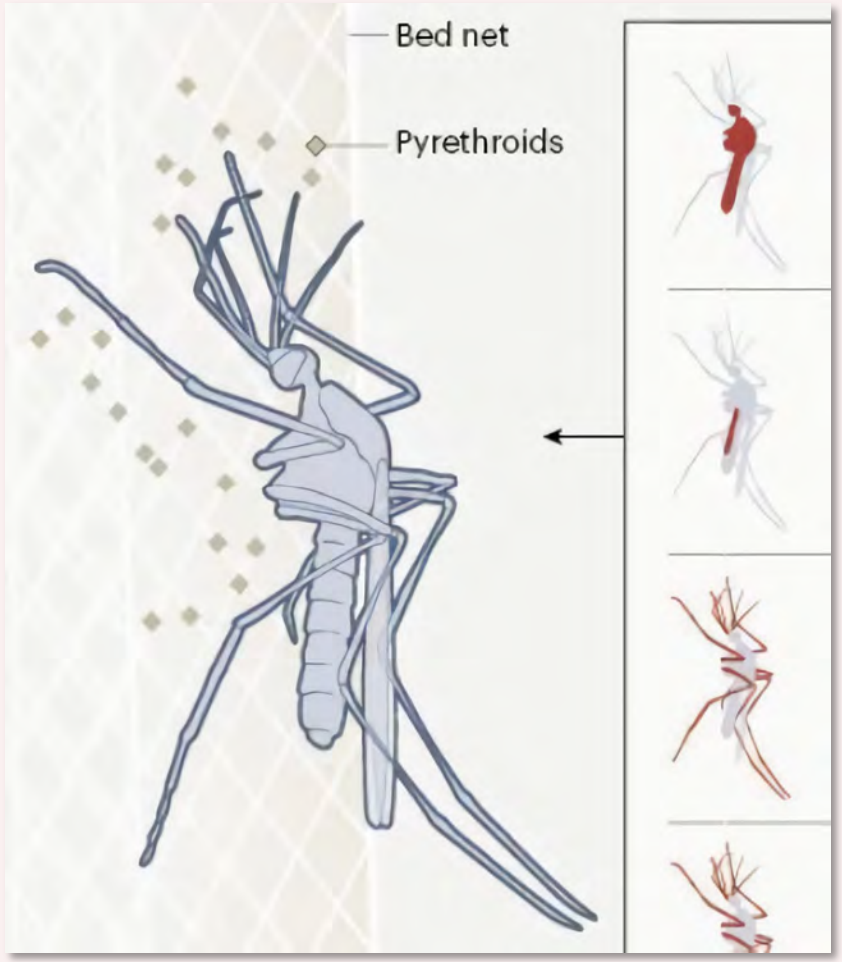
Rule 3. Use colors to highlight the main points of the figure

❖ **Some scientific disciplines use specific colors**

- Important elements in illustrations can be highlighted with the main accent colors from the palette
- Background elements share the same neutral tone

❖ **Summary figures require focused attention to important elements**

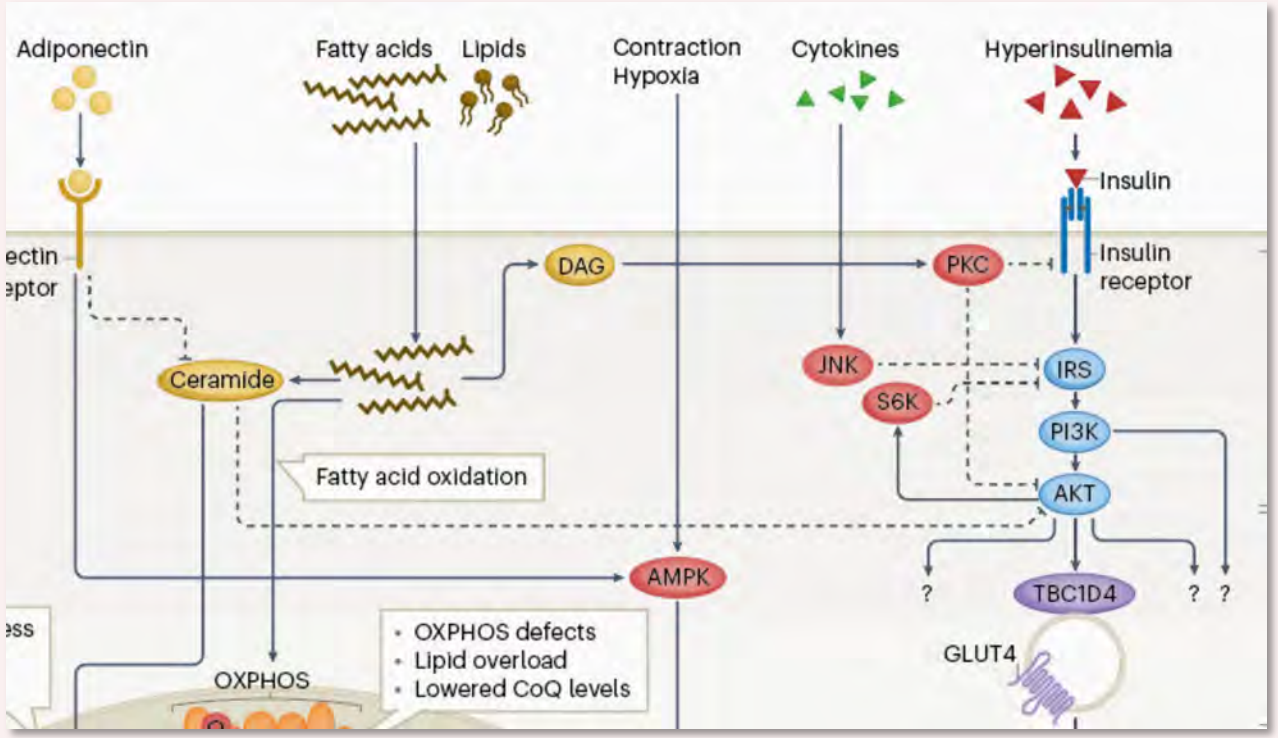


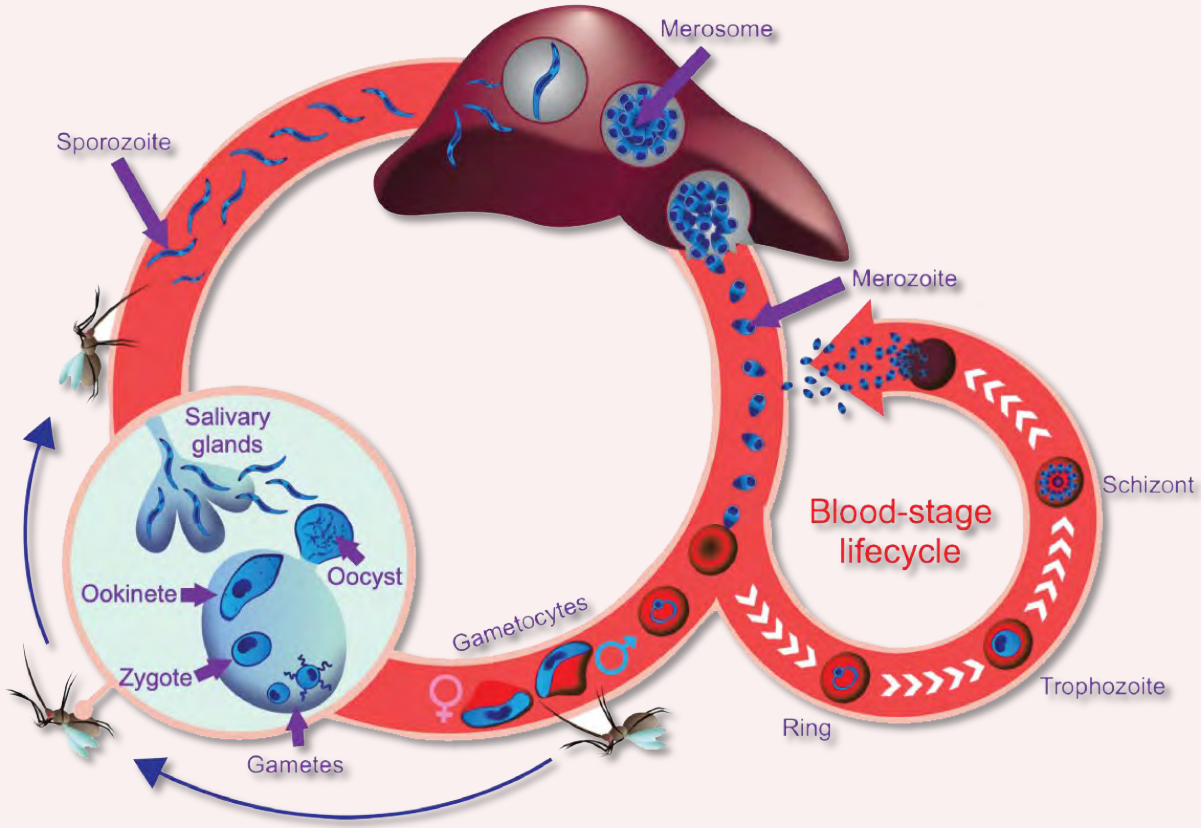


Rule 3. Use colors to highlight the main points of the figure

❖ Categories information and ground elements

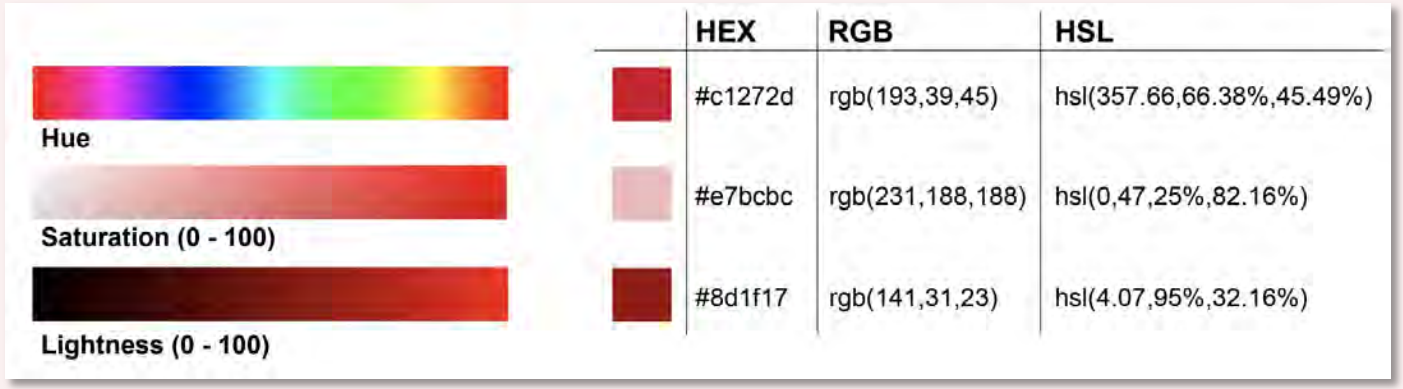
- In complex figures and multi-panel figure sets, colors can be used to help categorize information.



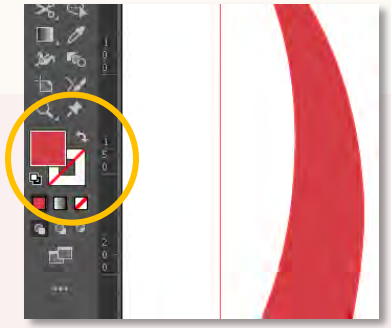


Rule 3. Use colors to highlight the main points of the figure

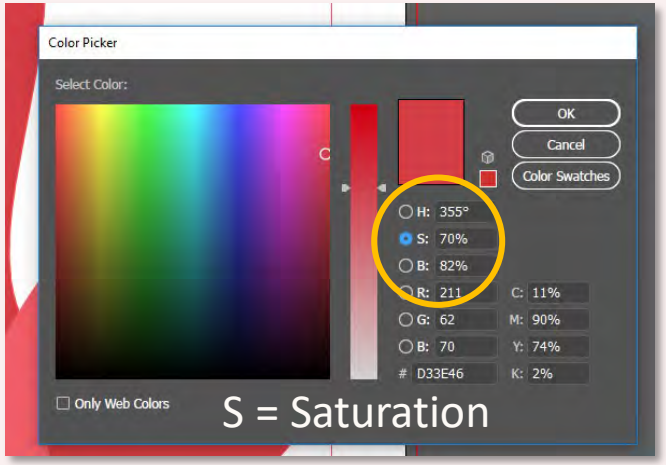
❖ **Use colour saturation and lightness to create contrast**



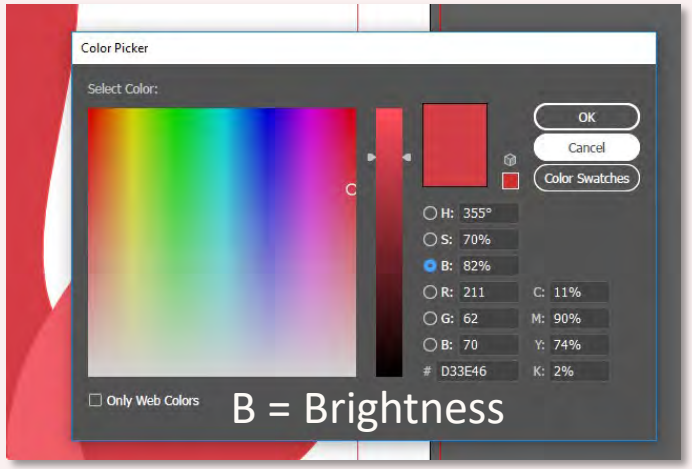
	HEX	RGB	HSL
	#c1272d	rgb(193,39,45)	hsl(357.66,66.38%,45.49%)
	#e7bcbc	rgb(231,188,188)	hsl(0,47.25%,82.16%)
	#8d1f17	rgb(141,31,23)	hsl(4.07,95%,32.16%)



For example, in Adobe Ai

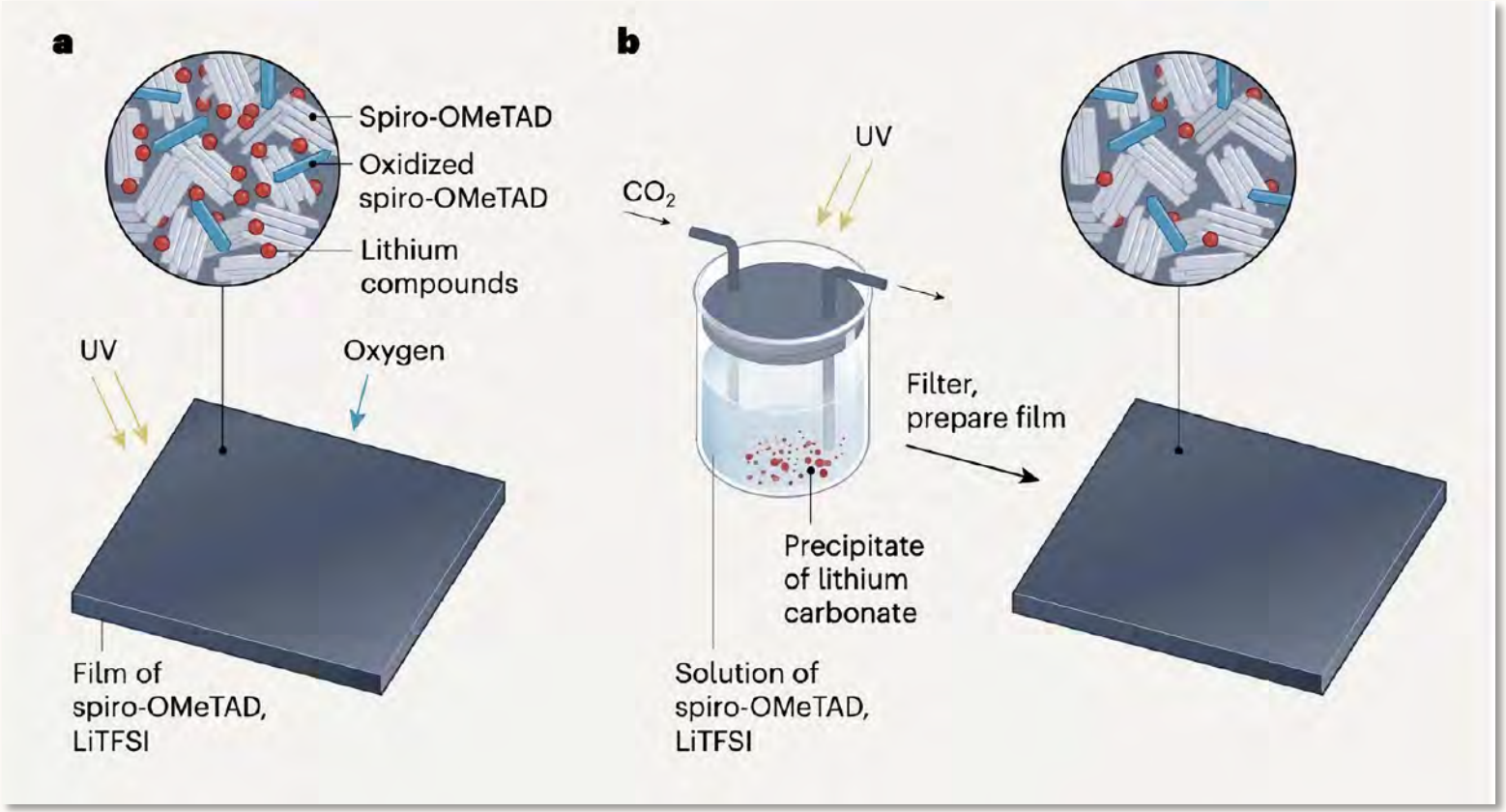


- You can use any combination of colors if they are highly contrasting, even if they are different shades of the same color.
- The three main color characteristics are hue, saturation, and lightness.
- By adjusting any of these three of these characteristics, you can create an effective color palette using any colors that represent your dataset



Rule 4. Refine and repeat the process until the story is clear

- **Aim to :**
  - Explain all elements in labels or the legend.
  - Label the first instance of every object.
  - Use figure parts (a, b, etc.) and subheadings to give the figure hierarchy and structure.
  - Remove unnecessary elements.

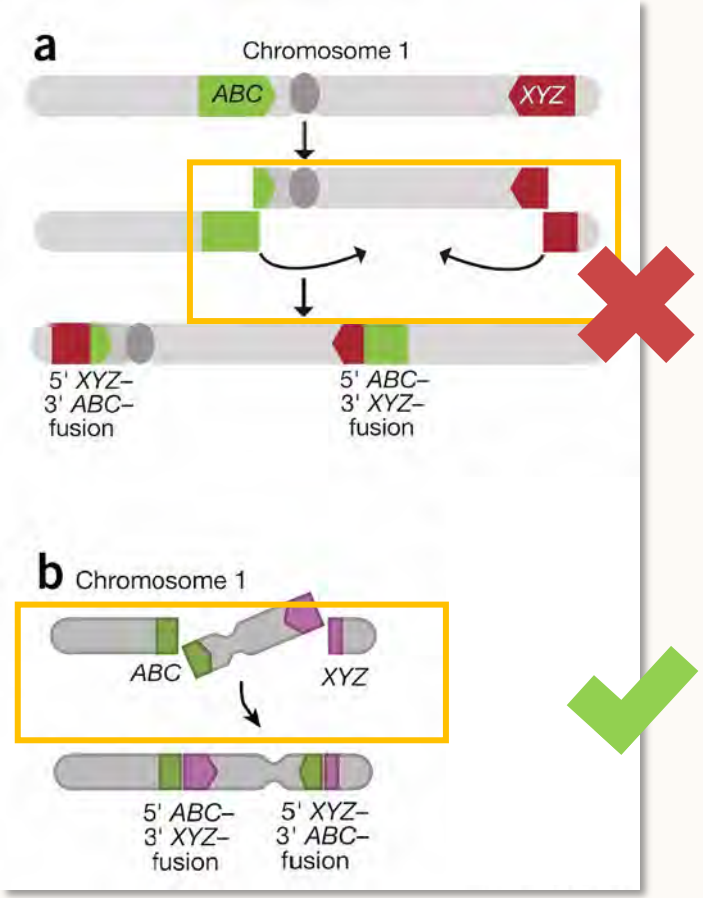


DO clearly define all elements in a figure.

- **We ask ourselves:**
  - What are the essential elements?
  - Is anything missing?
  - What can we remove and still clearly communicate?
  - Is there unnecessary repetition?
  - Is there unnecessary decoration?

Rule 4. Refine and repeat the process until the story is clear

- **Try to avoid:**
  - Using icons purely for decoration. Only use icons to enhance understanding and provide context.
  - Using multiple arrow weights and styles when their meaning is unclear.
  - Over-editing visuals.

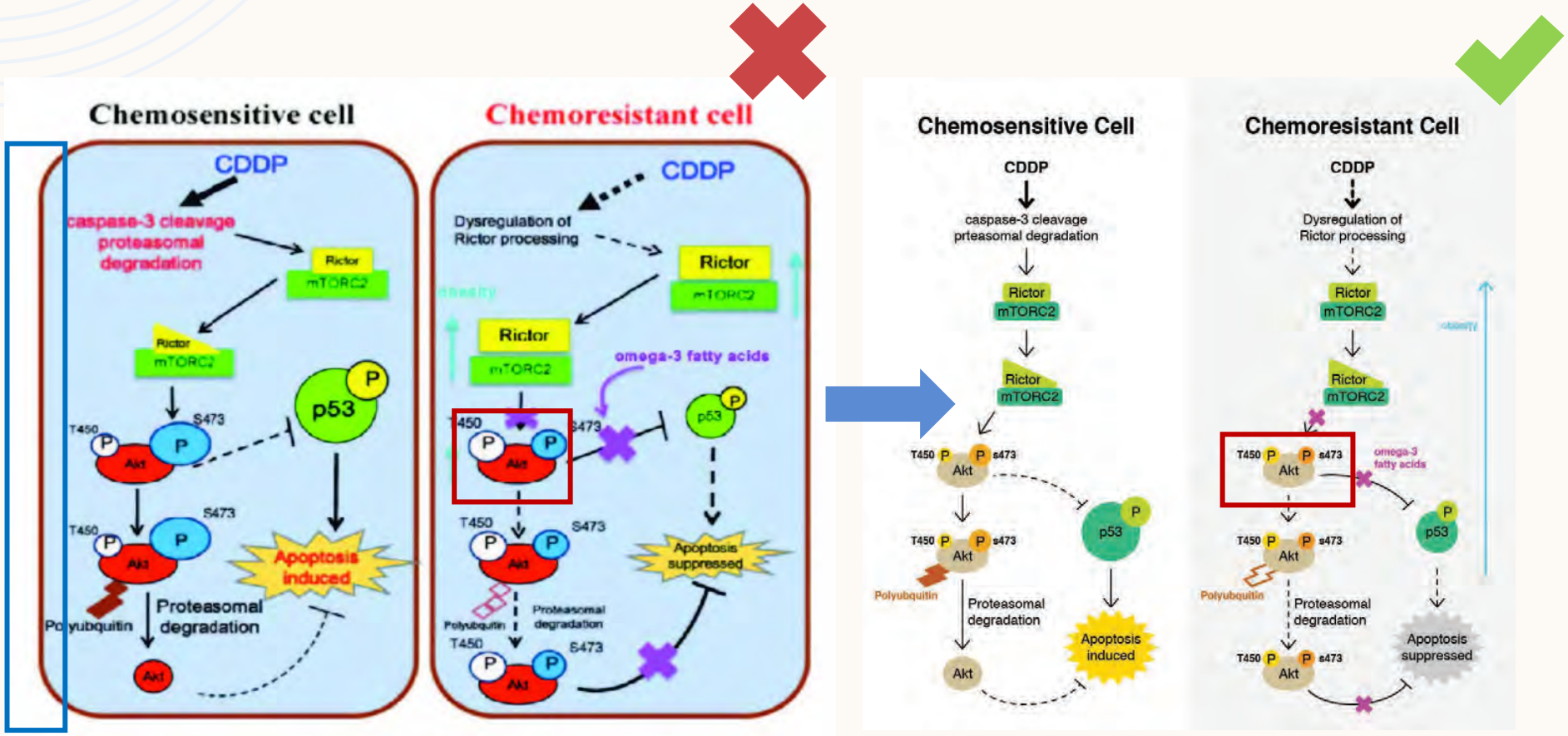


Visual editing

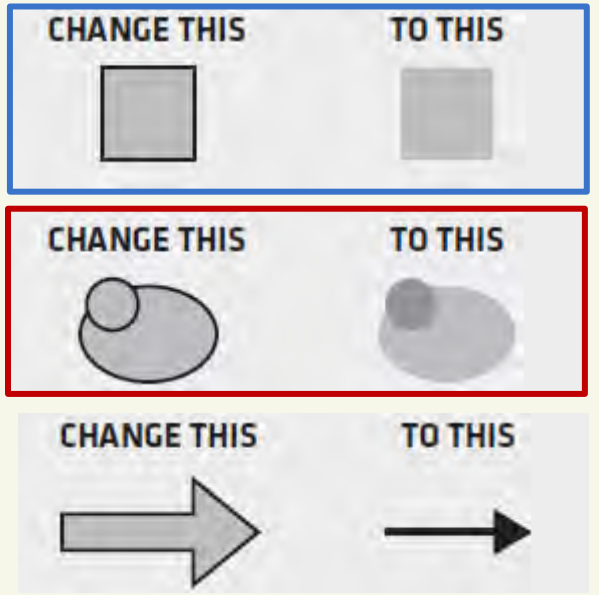
- In the top figure (a), there are redundant elements and ambiguous arrows.
- By simplifying the action with a single arrow, the process is more clearly and intuitively shown in figure (b)."

Rule 4. Refine and repeat the process until the story is clear

- **For example:**

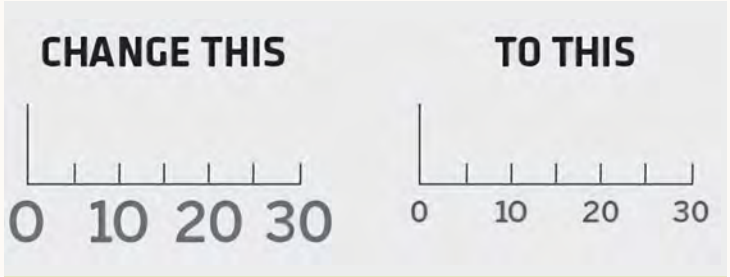


- Removing these lines will make the image look more polished,
- Also increase the contrast between the text and shapes.
- Minimizing the space arrows to give the shapes and text more breathing room



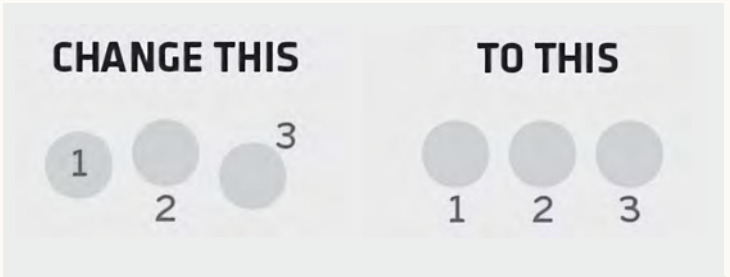
Rule 4. Refine and repeat the process until the story is clear

- **Text**



Reduce text size when possible

- When creating a graph, consider how large it will be viewed.
- Choose a text size that is appropriate for the scale.
- The text doesn't need to be the most prominent element in the graph.



Align similar information

- To create visual connections between information, align them horizontally or vertically in the figure

Rethink placement of labels

- Positioning labels closer to their corresponding element can clarify the label and make the figure less cluttered.

SUMMARY

1. **Clearly show the main purpose of your audience.**
2. **Use composition to simplify the information.**
3. **Use colors or grayscales to highlight the main points of the figure.**
4. **Refine and repeat the process until the story is clear**

SUMMARY OF GENERAL PUBLICATION REQUIREMENTS

File types and resolution

Line art (Vector graphic)	Images
• includes graphs, flowcharts, diagrams, scatter plots, and other text-based figures that are not tables. • If a figure includes both line art and images, follow the line art guidelines	• Includes photographs, drawing, imaging system outputs, and other graphical representation
Preferred file types: • EPS > AI > PDF	Preferred file types: • TIFF > EPS > PNG
Preferred resolution: 600 dpi / 1000 dpi / 1200 dpi (if vector files couldn't be supplied, different for different publishers)	Preferred resolution: 300 dpi

Image sizes

Small images	Large images
• Occupied one-quarter of the page • The preferred minimum image size is an 80 mm canvas size or a pixel width of 1800px.	• Occupied a half- or full-page • The preferred minimum image size is a 180 mm canvas size or a pixel width of 1800px.

File size

- Each individual figure file should be less than 10 MB, and the zipped file of all figure files should be less than 500 MB.

File name

- Name figure files only with the word “figure” and the appropriate number. For example: Figure_1.tiff

Legend and labelling

- Figure legends or captions should use Arabic numerals, follow the order in which they appear in the manuscript, and explain any abbreviations or symbols that appear in the figure.

Colour

- Original research content should be supplied in RGB color mode
- All other content (including Perspective, Progress Articles and Review Articles) should be supplied in CMYK color mode

Permission

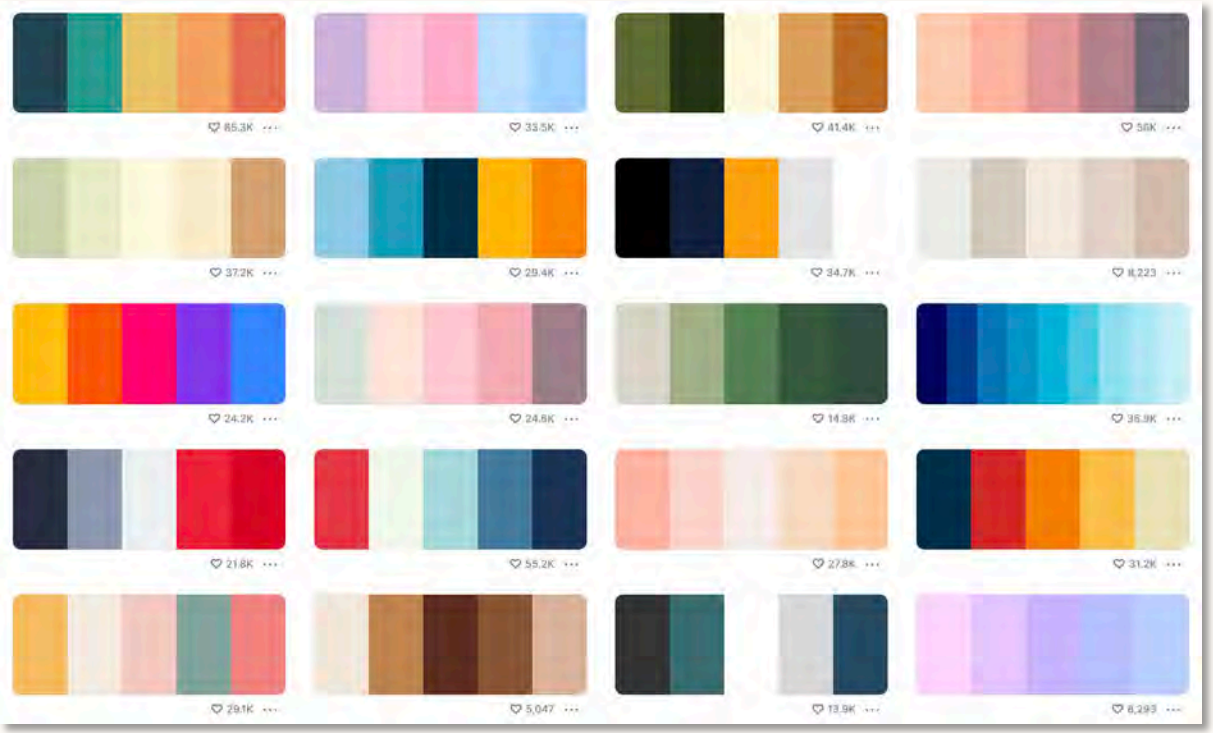
- Clarify the source of any images that you do not own
- Cannot publish any third-party images without securing the appropriate rights

POSTER MAKING TIPS

“HOW TO MAKE A GOOD VISUAL DESIGN ON YOUR POSTER?”

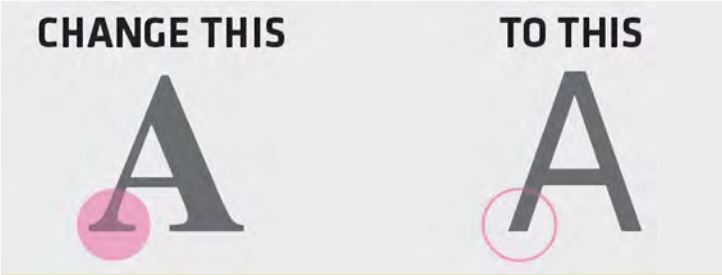
1. Simplify the over color palette

- Color can make a poster stand out from the crowd and enhance audience understanding.



- Choose a light background color to avoid taking attention away from the main points
- Limit the total number of colors used to let key data shine

2. Refine text treatment

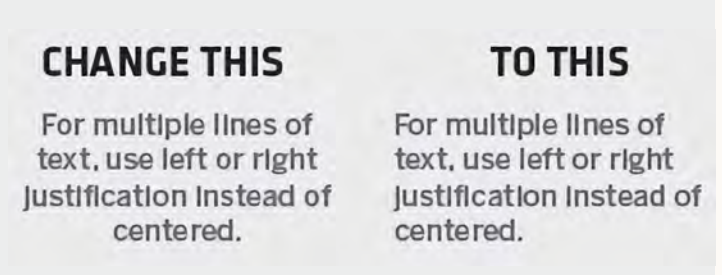


Choose the right font

- Use fonts with letters that aren't capped off with horizontal lines
- They are simple and don’t add unnecessary complexity to an already complex image
- **Helvetica**, Arial and **Calibri** are widely used examples of San serif fonts

Reduce differences in style

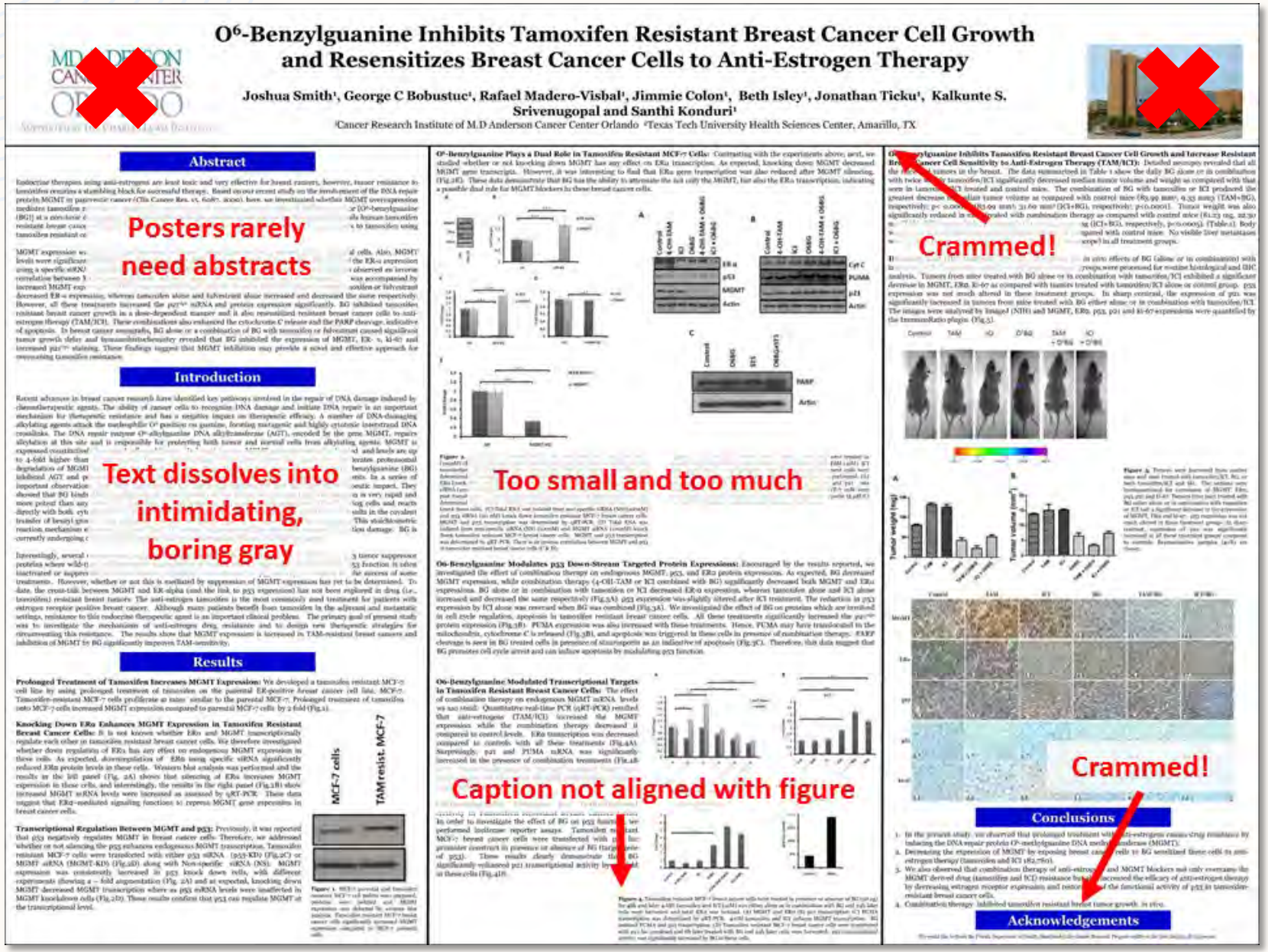
- To indicate that a piece of text contains different information, change only one aspect of the text.
- For example, you can make it bold, a different colour, or larger in size. However, avoid changing all three aspects at the same time.



Adjust paragraph justification

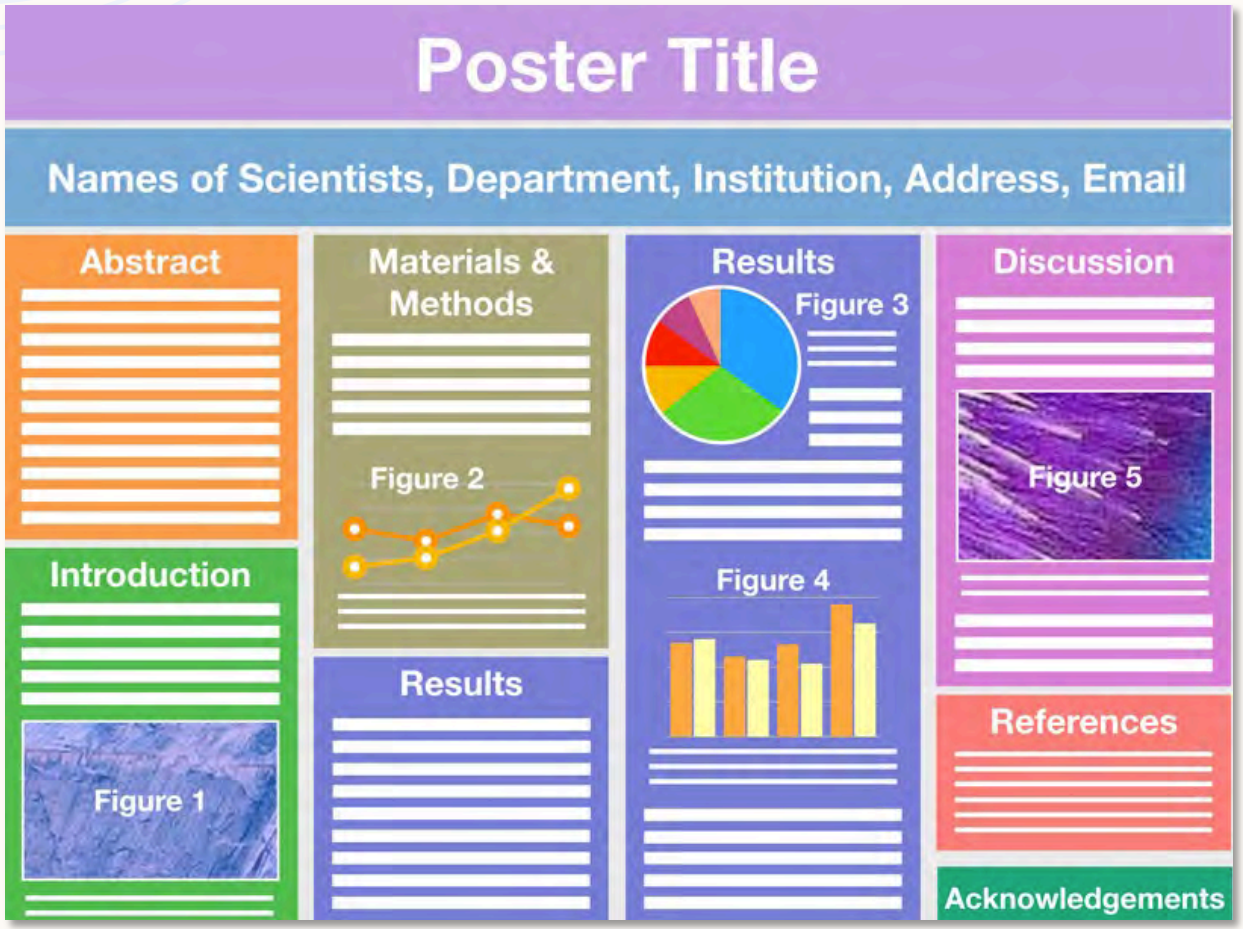
- Use left justification instead of centre
- It gives nowhere for the viewer’s eyes to anchor as they move through the lines

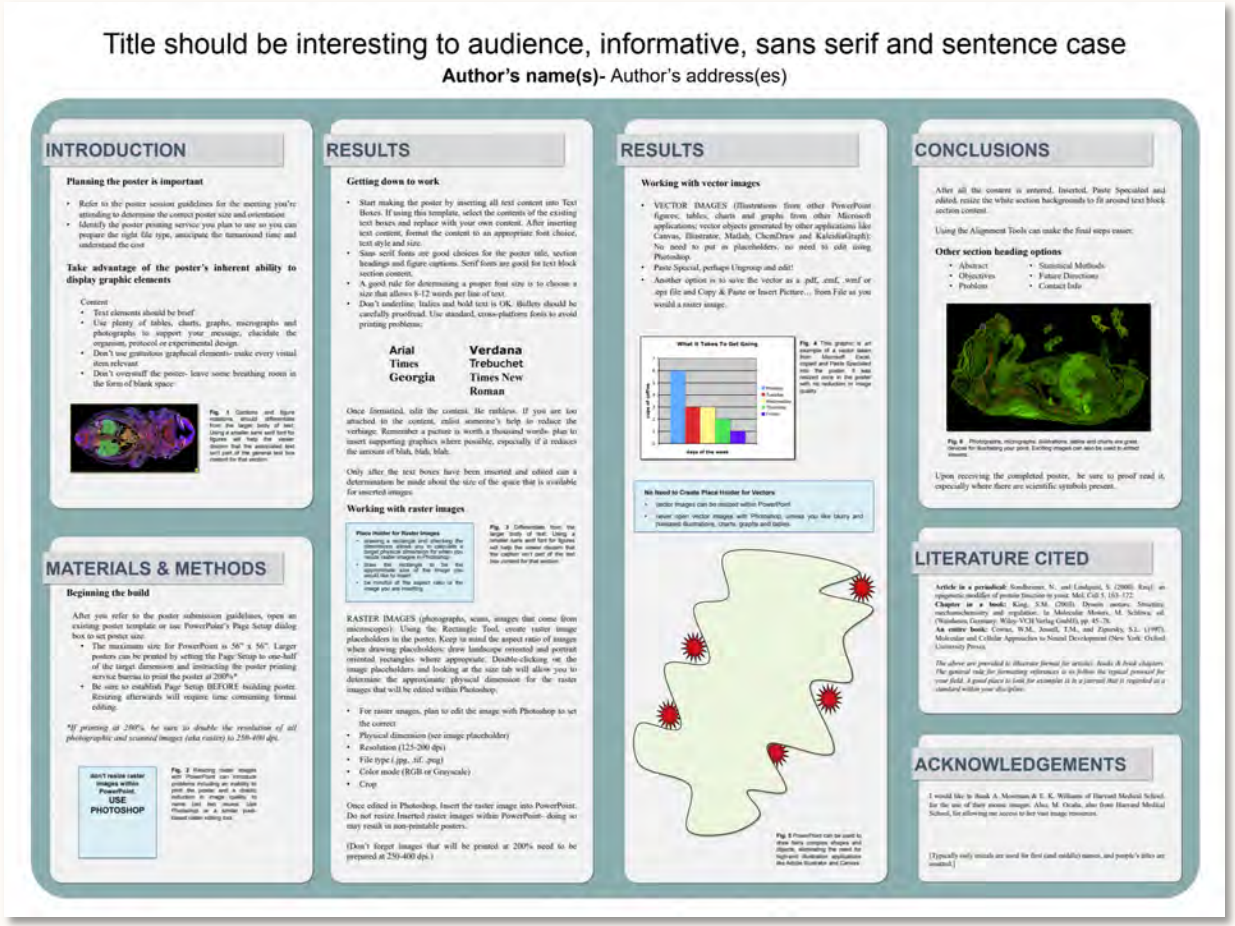
3. Poster composition



- **An example of a poorly designed poster**
- overcrowded graphs and figures
  - Avoid trying to fit in too much information
- This causes cognitive overload and reduces comprehension
- Labels and images that are too small are not accessible or legible for those with visual impairments

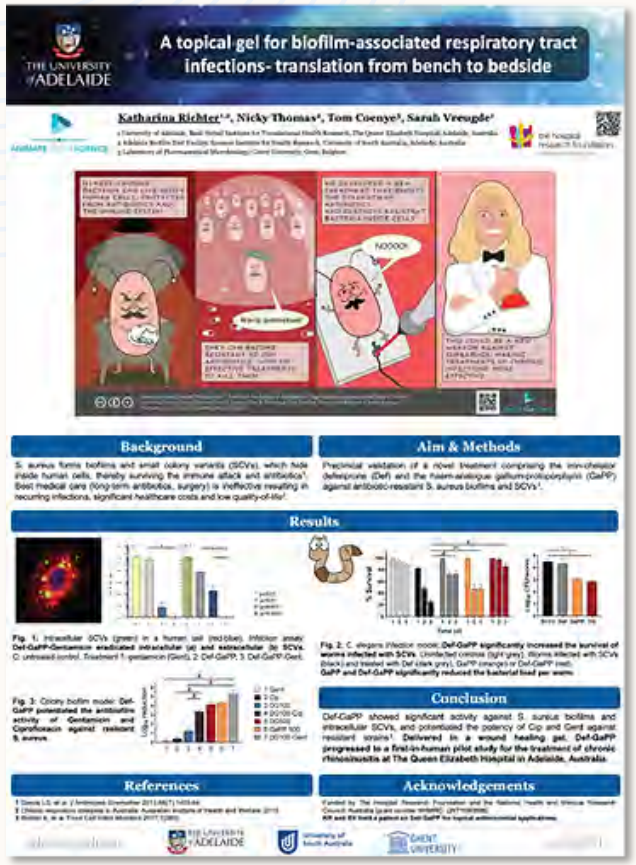
- **An example of a good designed poster**
  - A better layout can help reviewers appreciate your content
    - Organize the information from left to right, top to bottom, or in a pattern

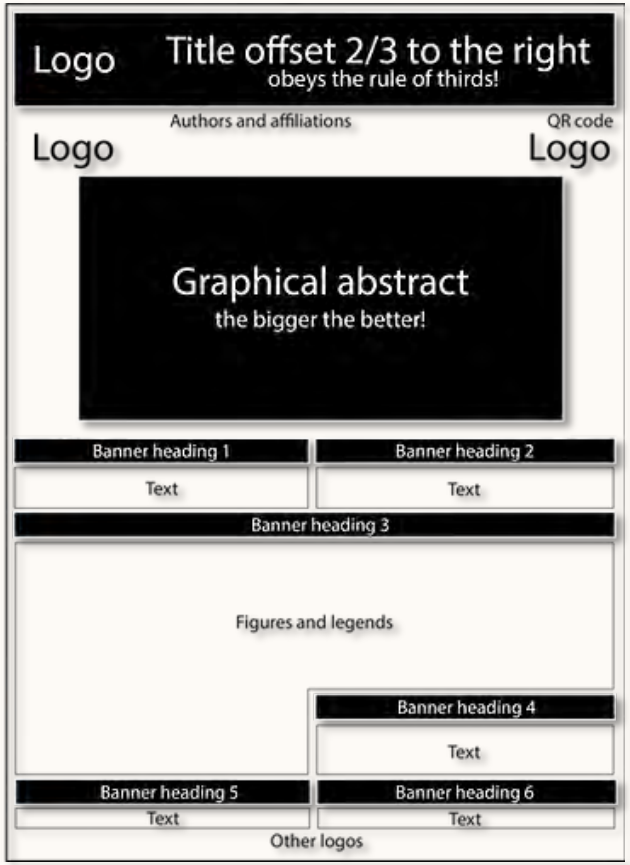


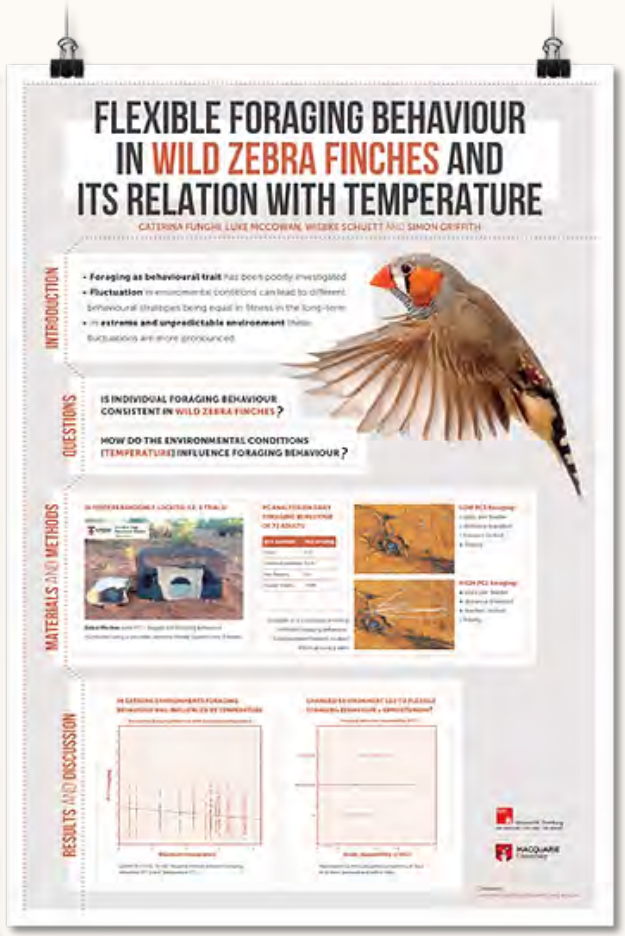


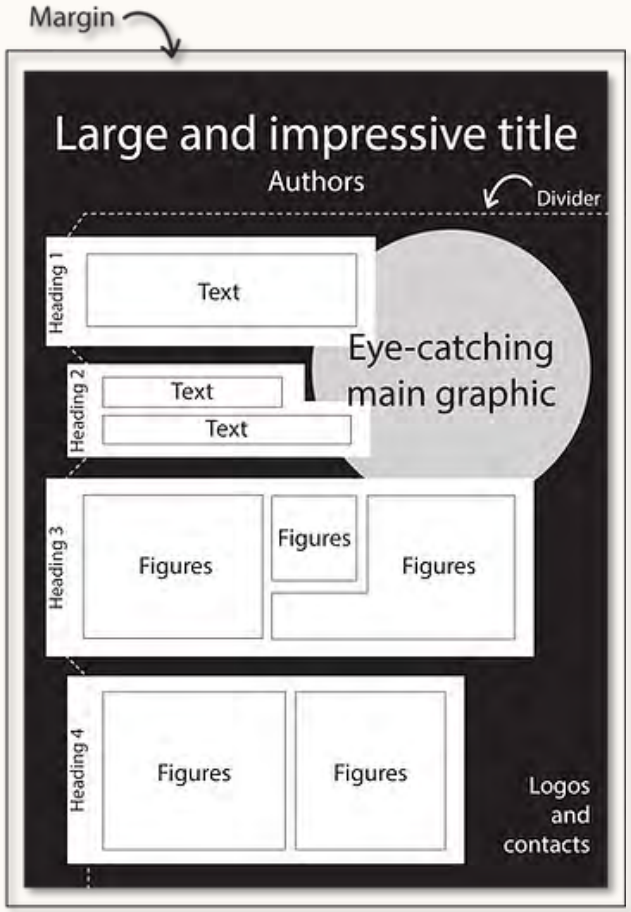
❑ You may download poster templates online

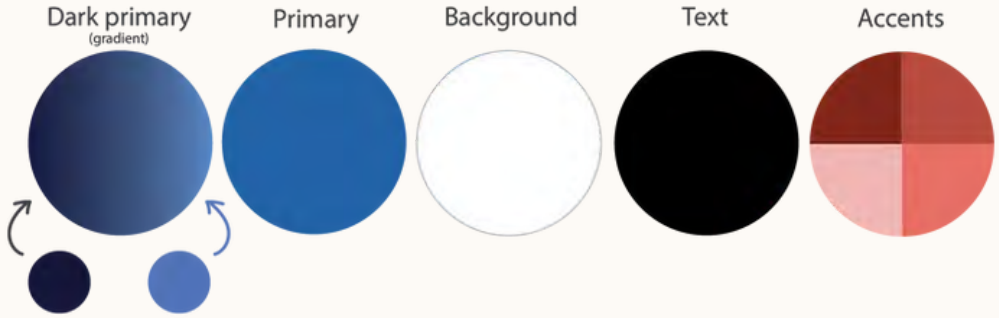
Another example for poster composition



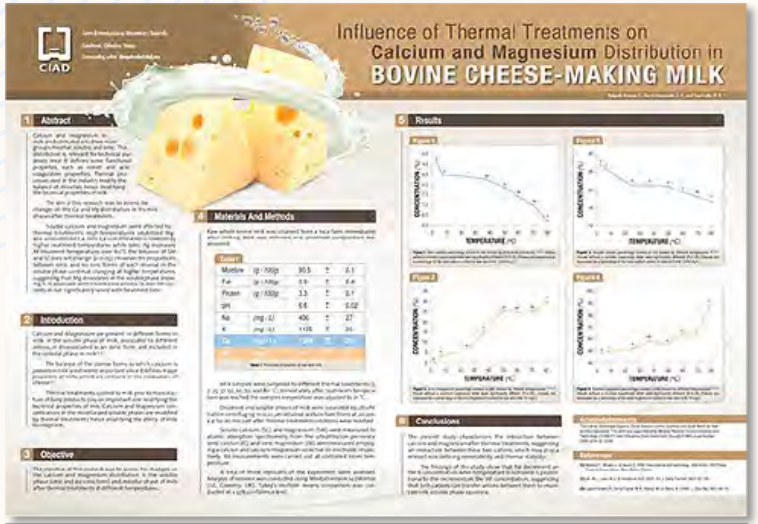


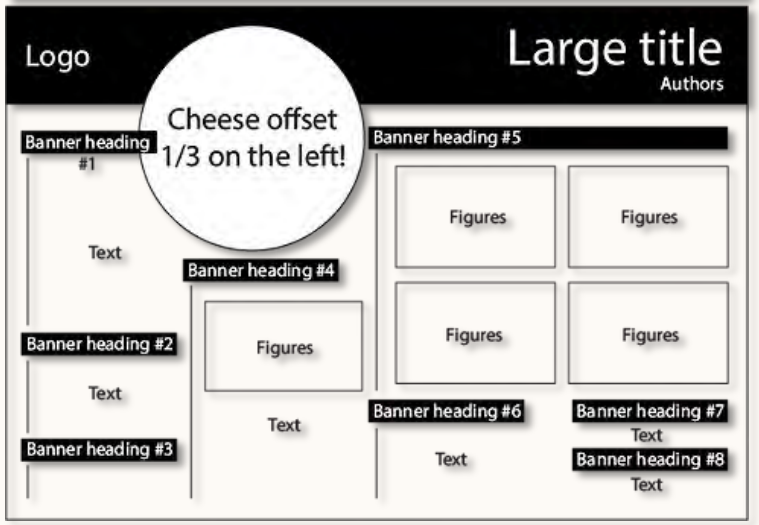


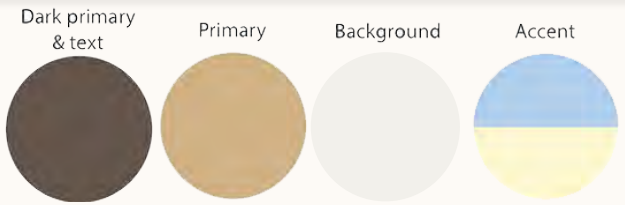


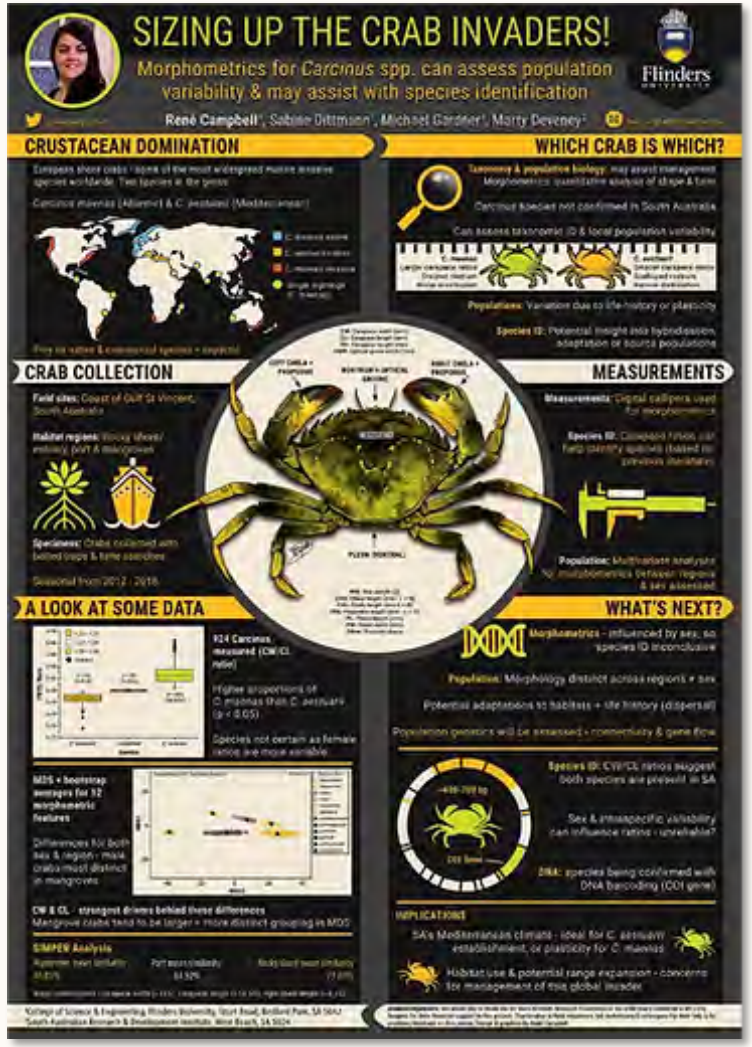


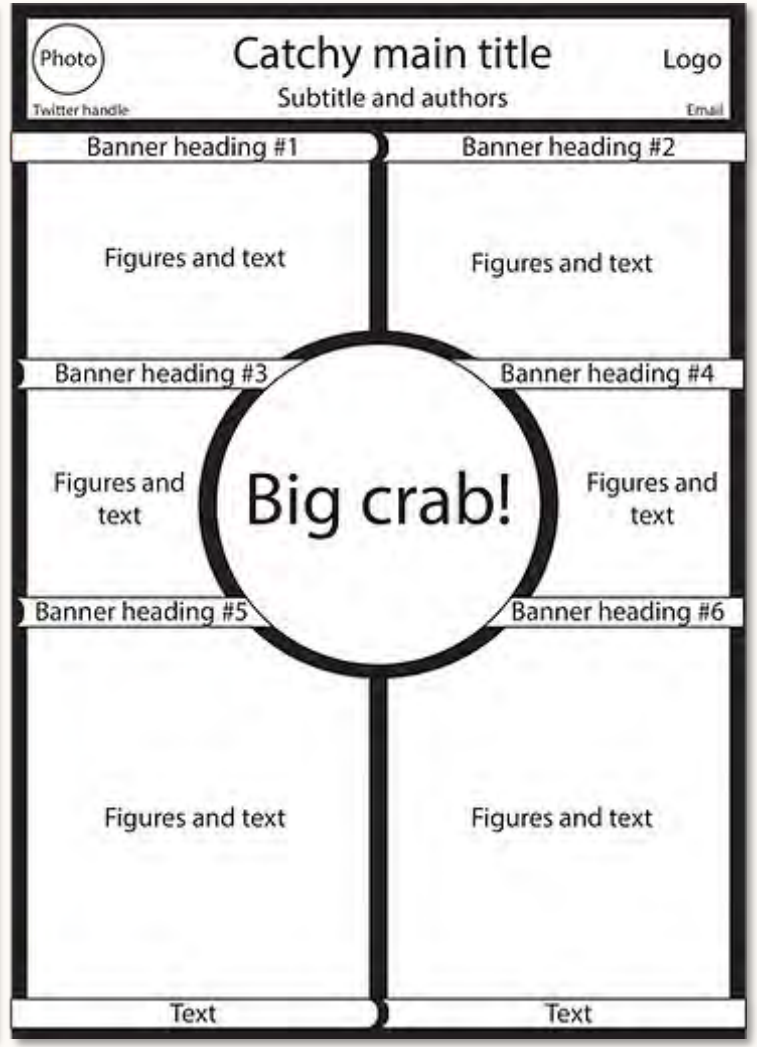
Another example for poster composition





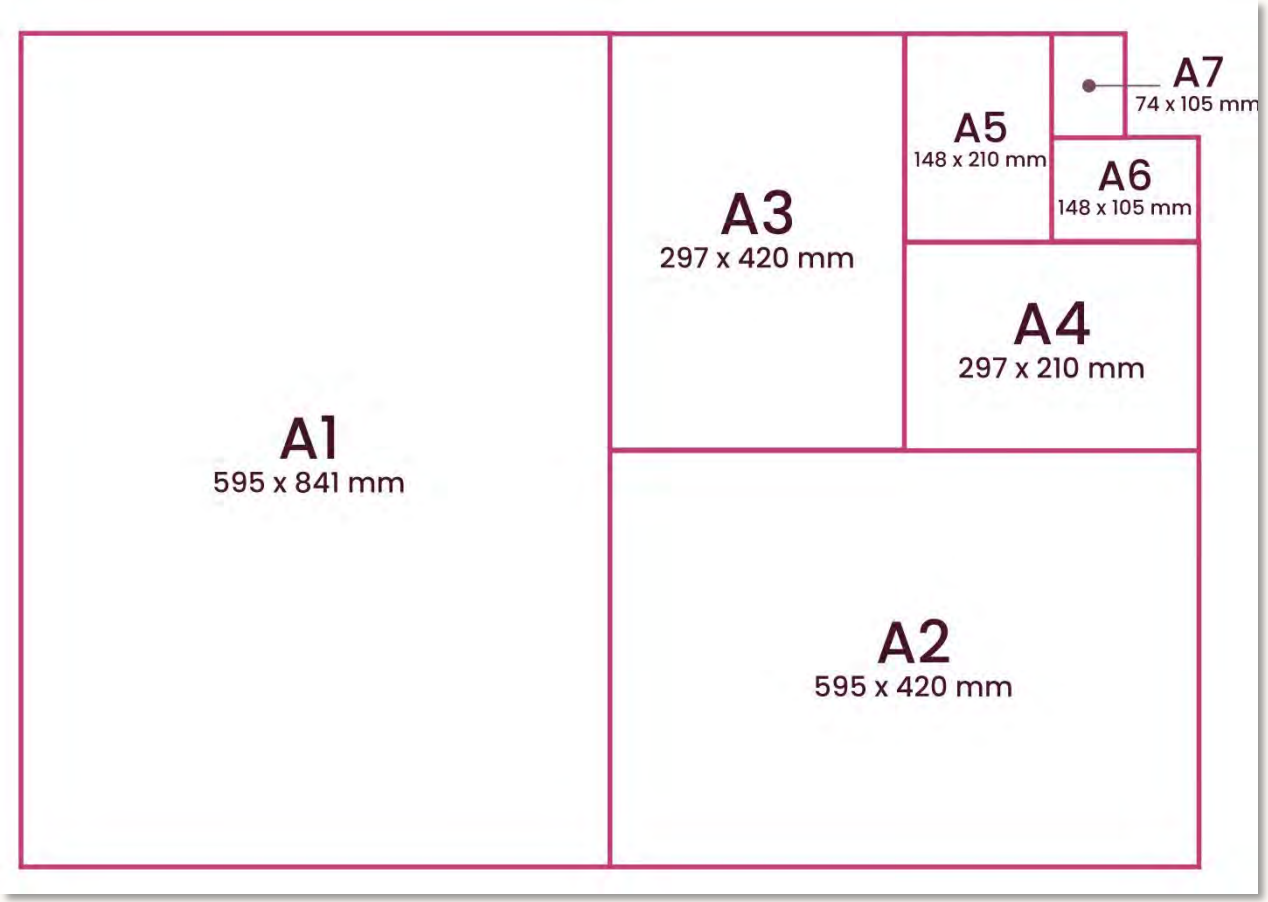






Paper size

- Standard International Paper Sizes and Measurements



Paper Size	Millimetres	Centremetres	Inches
A0	841 x 1189mm	84.1 x 118.9cm	33.1 x 46.8in
A1	594 x 841mm	59.4 x 84.1cm	23.4 x 33.1in
A2	420 x 594mm	42 x 59.4cm	16.5 x 23.4in
A3	297 x 420mm	29.7 x 42cm	11.7 x 16.5in
A4	210 x 297mm	21 x 29.7cm	8.3 x 11.7in
A5	148.5 x 210mm	14.85 x 21cm	5.8 x 8.3in
A6	105 x 148.5	10.5 x 14.85cm	4.1 x 5.8in
A7	74 x 105mm	7.4 x 10.5cm	2.9 x 4.1in
A8	52 x 74mm	5.2 x 7.4cm	2.0 x 2.9in
A9	37 x 52mm	3.7 x 5.2cm	1.5 x 2.0in
A10	26 x 37mm	2.6 x 3.7cm	1.0 x 1.5in

“HOW TO MAKE POSTERS IN POWER POINT?”


UNIVERSITY / DEPARTMENT / ADDRESS
THE OHIO STATE UNIVERSITY
Title of Research Study
Authors Name and University Contact Information
ABSTRACT
Quam aliquis nullan volobor am quat vulla faci bla feuisi ea facidunt luptatin ut prat. Henim do conse feum nim velessim nulla augiat, quat acil ulla acin henim irit alit praesto commod te doloborperos acilla facincin henit lan henim ilit atincil laortisl enit praestie molore feugiam ver in eummy nos dolortisi bla faci Rit dolesendus, tet endenis ea volupta eperere ssenem nam hictus. exer adipsustrud doloree tuerat lorpera esenibh eu faccum eum iuscili quamcommy nit lorerillut ullam quat lore verostrud ming et, si tie faciliquisse modolortin volore henibh esequat, quis aci eniamet ut ad modolutpat wis eumsandipit aliquipsum zzriure verosto enim ea feu faccum vulputet vel utet non ute conse tis dip er aliquam cortin henim duipisim iuscing ex et nos dolorem zzrit wiscilit er sisl Lum exer adipsustrud doloree tuerat lorpera esenibh eu faccum eum iuscili.
INTRODUCTION
Henim do conse feum nim velessim nulla augiat, quat acil ulla acin henim irit alit praesto commod te doloborperos acilla facincin henit lan henim ilit atincil laortisl enit praestie molore feugiam ver in eummy nos dolortisi bla faci Rit dolesendus, tet endenis ea volupta eperere ssenem nam hictus. exer adipsustrud doloree tuerat lorpera esenibh eu faccum eum iuscili quamcommy nit lorerillut ullam quat lore verostrud ming et, si tie faciliquisse modolortin volore henibh esequat, quis aci eniamet ut ad modolutpat wis eumsandipit aliquipsum zzriure verosto enim ea feu faccum vulputet vel utet non ute conse tis dip er aliquam cortin henim duipisim iuscing ex et nos dolorem zzrit wiscilit er sisl Lum exer adipsustrud doloree tuerat lorpera esenibh eu fal.
Header, to label the figure or table below
MATERIAL & METHODS
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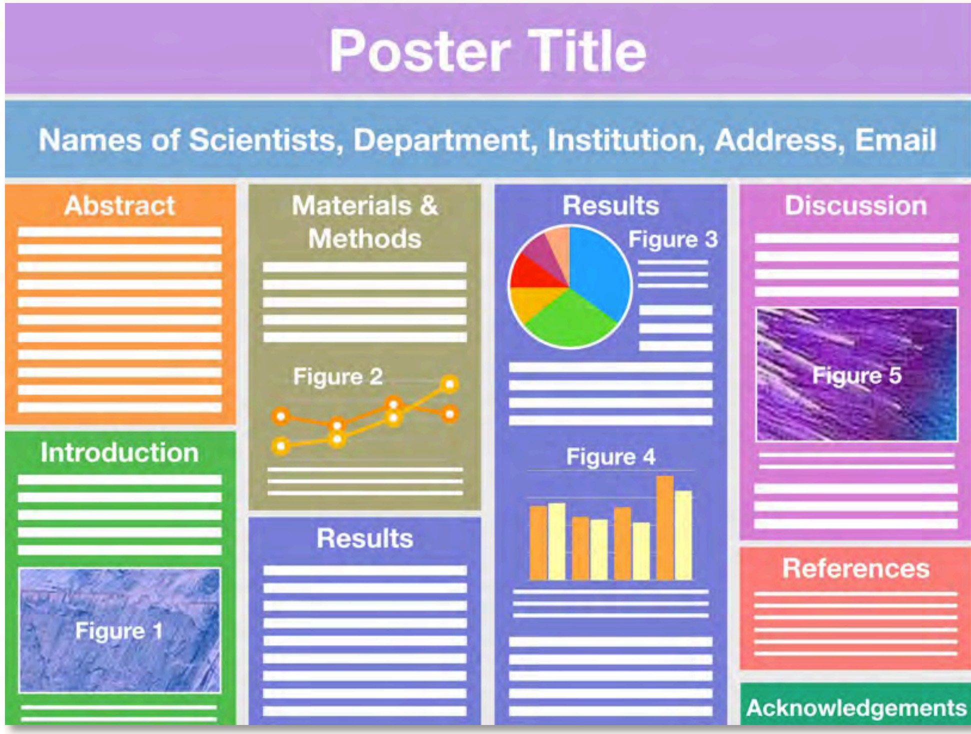
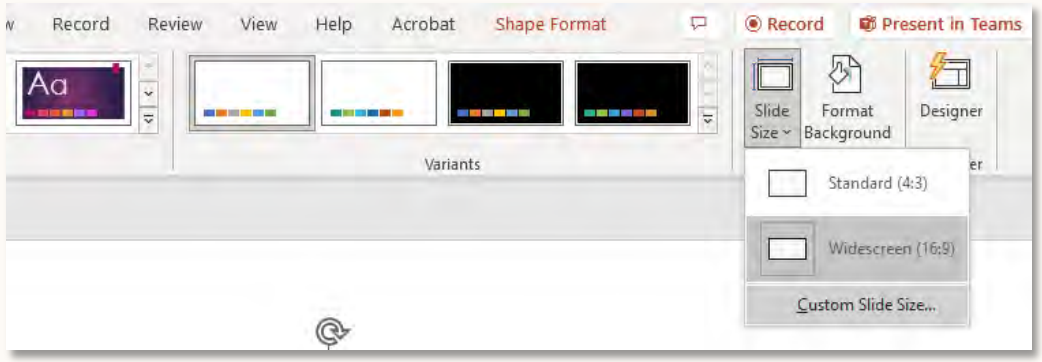
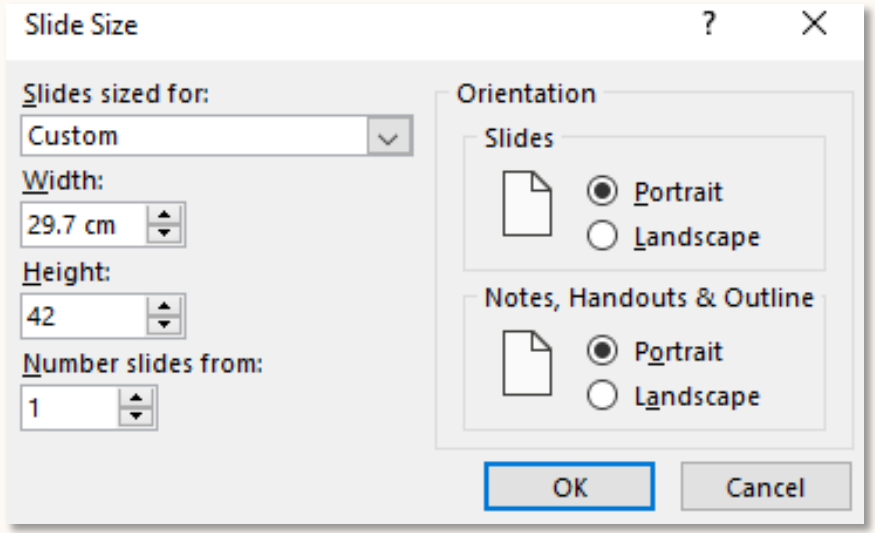

Poster Title
Names of Scientists, Department, Institution, Address, Email
Abstract
Materials & Methods
Results
Discussion
Figure 3
Figure 2
Figure 5
Introduction
Figure 4
Results
References
Figure 1
Acknowledgements

1. Create your ‘storyboard’ by knowing what your target dimensions are.

- **You may download poster templates** from https://www.dropbox.com/s/wl4ccwqxd0sf186/poster_templates_for_web.zip?dl=0
  - If using a template, insert text content into existing text boxes
  - If starting from scratch, use the Text Box Tool to insert text boxes, then add text content
- **Refer to submission guidelines:**
  - The size of your display space
  - The orientation of the display space (landscape or portrait)





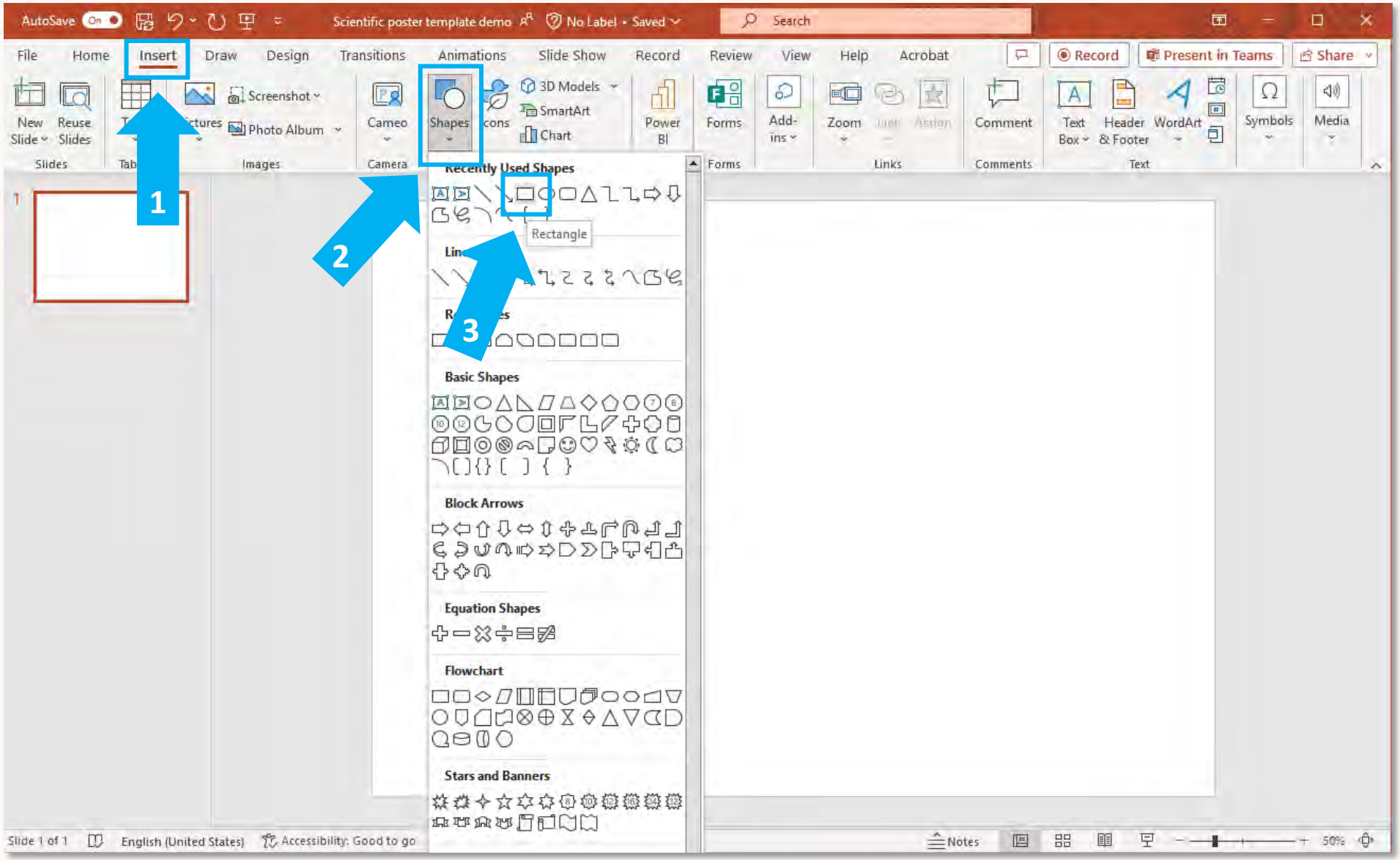
a) Open a template or new presentation in PowerPoint
b) Design> Slide size > custom slide size

c) Set up size (for example: making an A3 landscape size)
   - The number should be equal to actual size of the poster

2. Define your layout

- ❑ As beginners, we'll create a simple and effective layout first!

a) Insert > Shapes (To make a blueprint of different sections using rectangles)



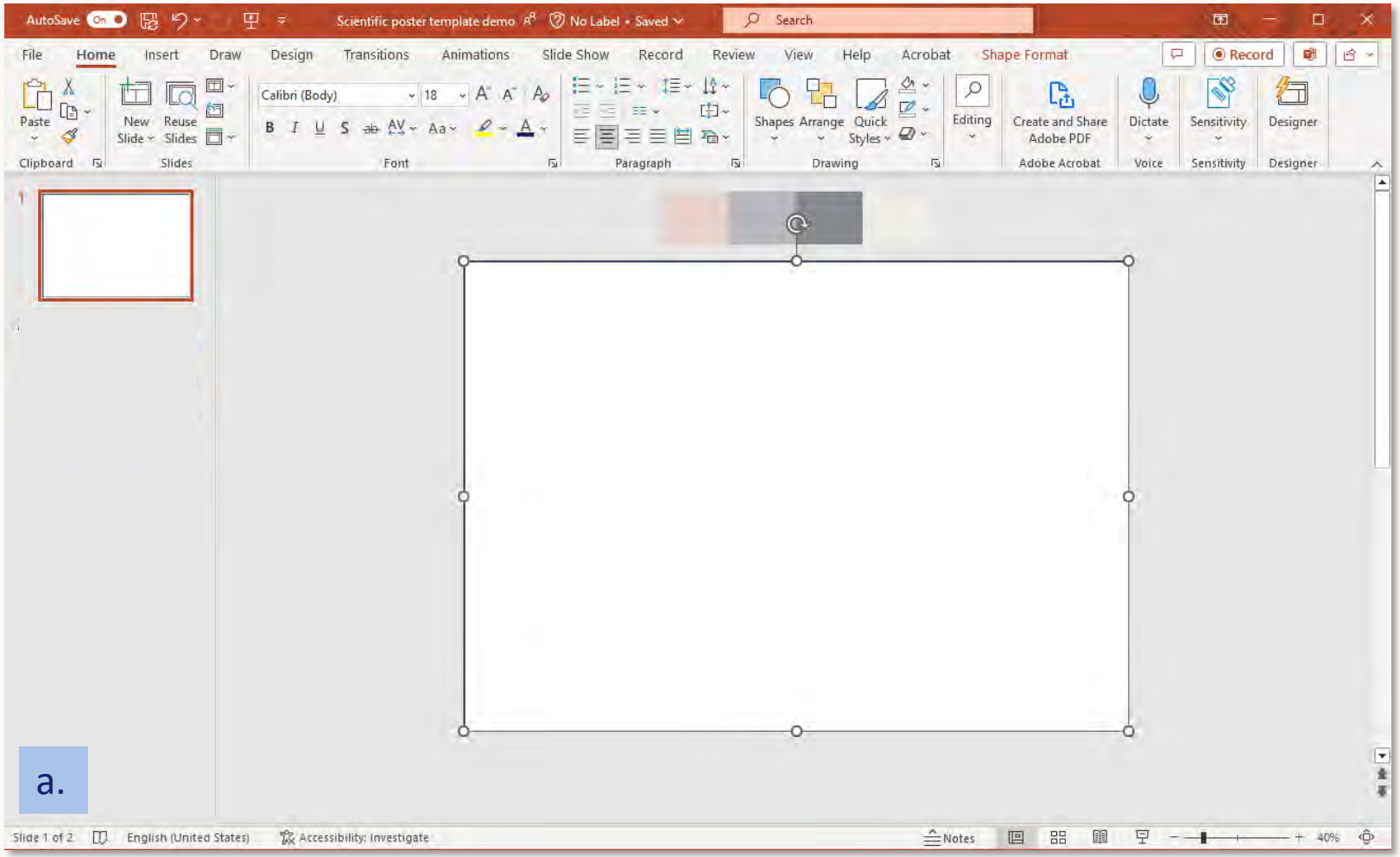
3. Choose a color palette

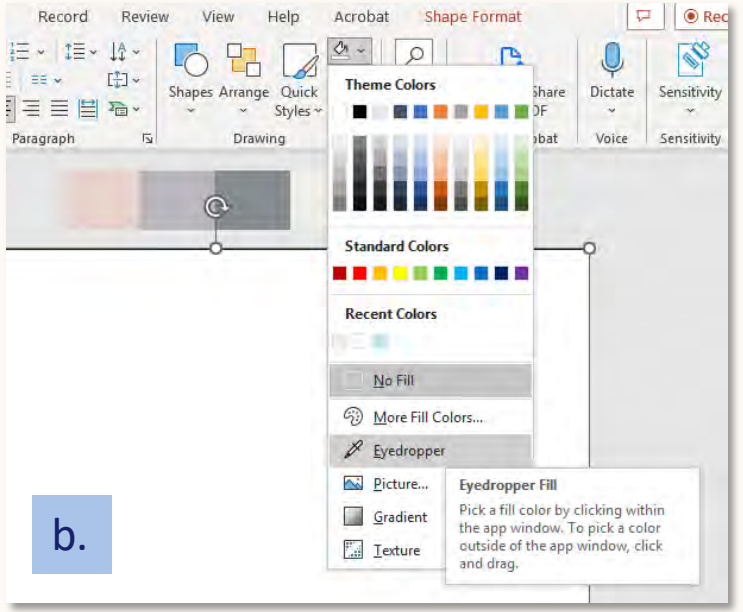
a) Create a color palette and export the image

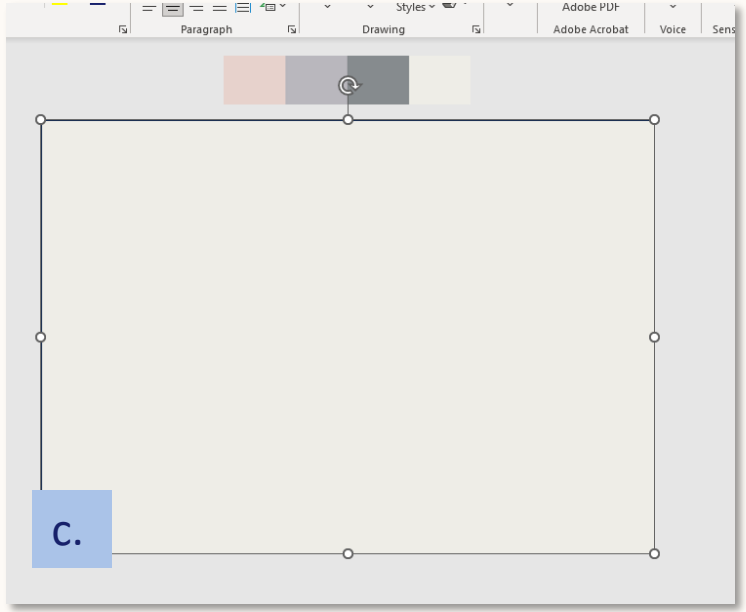
b) Paste the image on PowerPoint, extract the colours using the eyedropper tool

- Click the rectangle → Shape format → create background for the poster first

c) Using the color palette, you can now add color to the background by using eyedropper

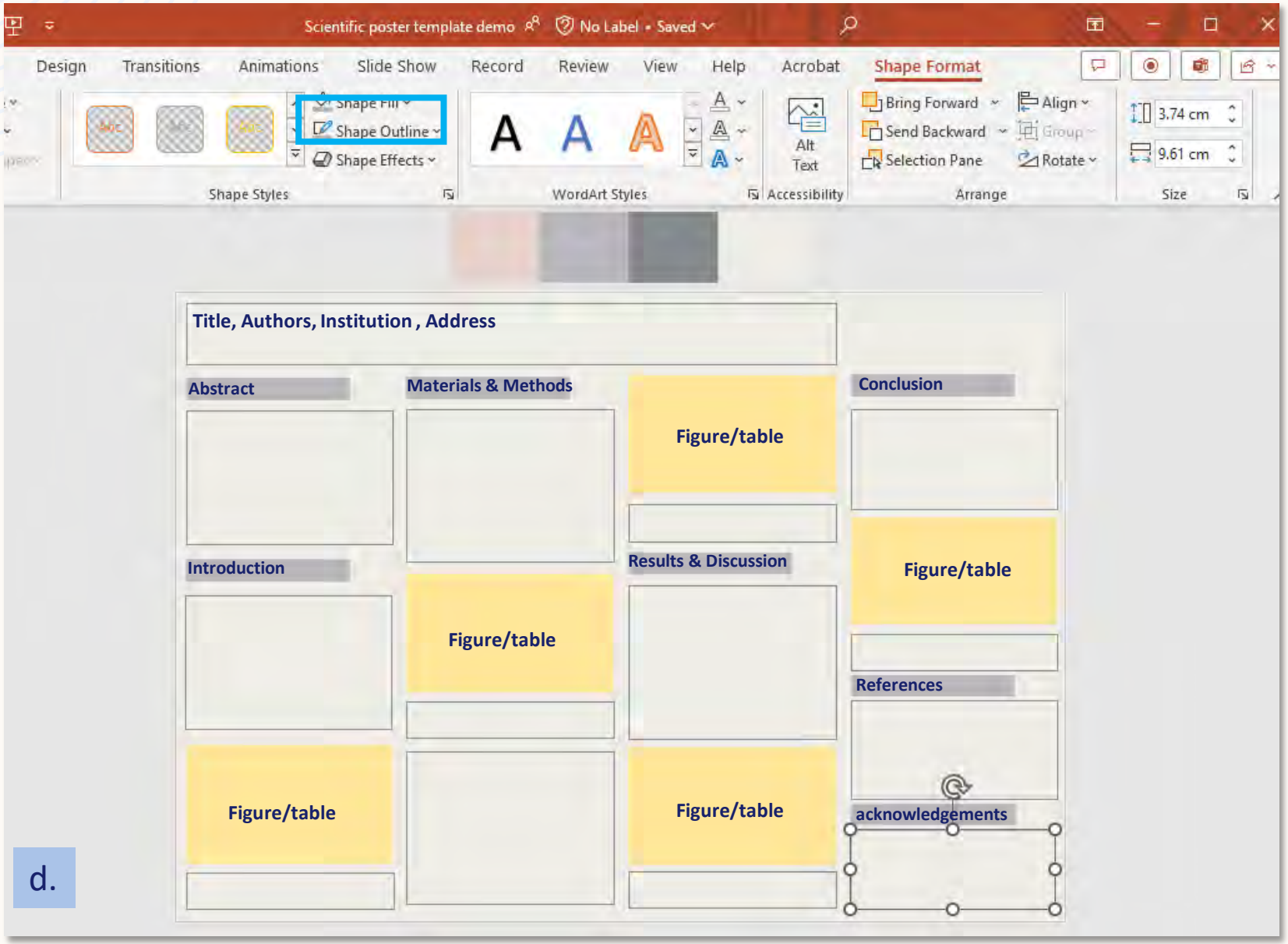






4. Create layout

d) use colored outline to create a simple layout



- Complete poster contains Title, Authors, Institution, Address, Abstract, Introduction, Materials & Methods, Results & Discussion, Conclusion (optional), References and Acknowledgements.
- Placeholders for Figures and/or Tables are shown with yellow boxes. Figure and/or table captions are shown under each yellow box.
- Figures and Tables can be placed anywhere in the poster

5. Insert text content to poster

e) Edit content so the message is conveyed with minimal words

i. Font should be sized to keep the number of words per line to about 12-24 **(depends on your poster size)**

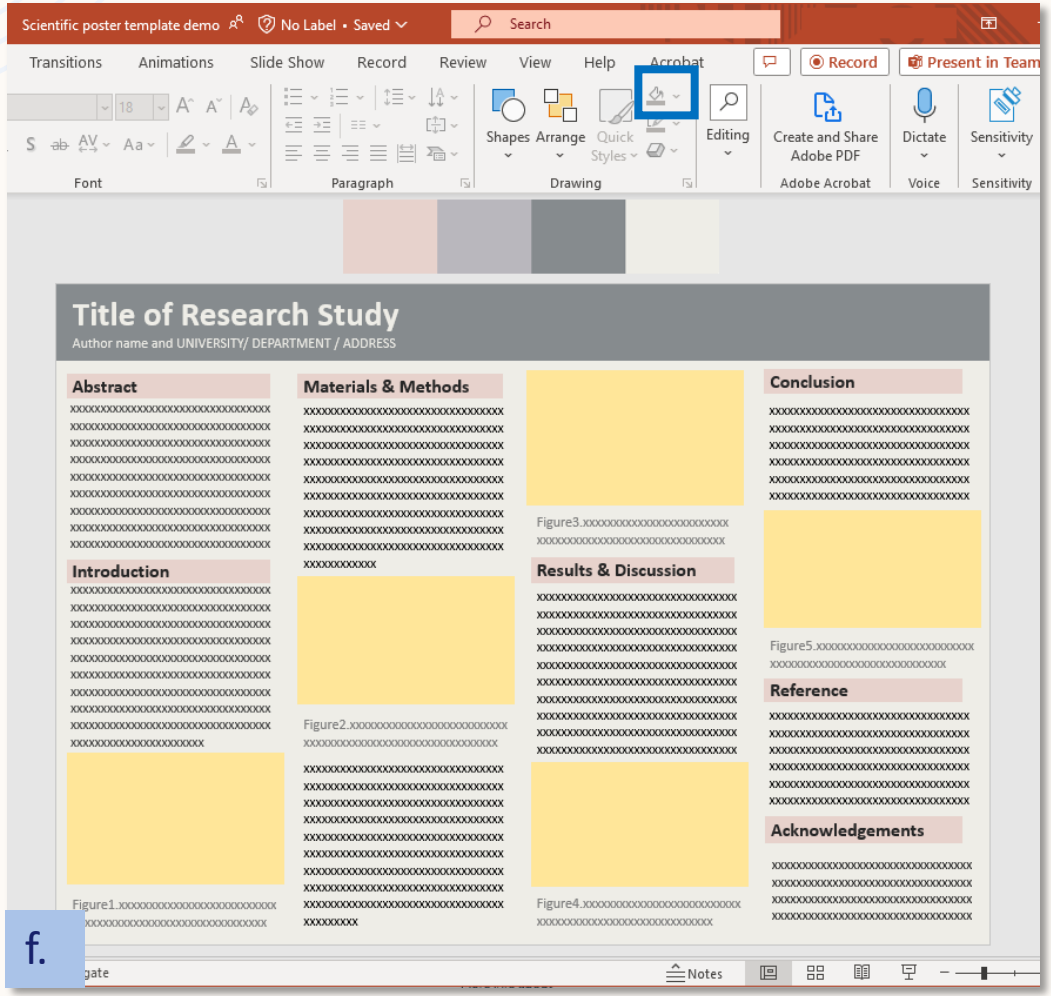
e.

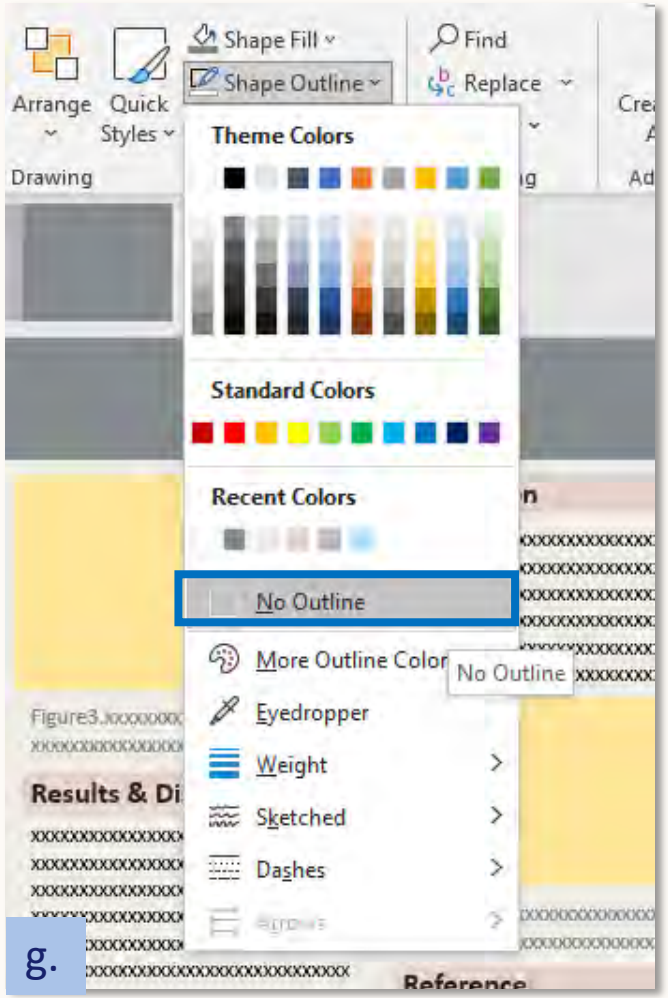
- Font choice is important. If the publisher or event organizer does not specify a particular font, choose a versatile, cross-platform font like **Helvetica**, Arial or **Calibri.**

5. Insert text content to poster

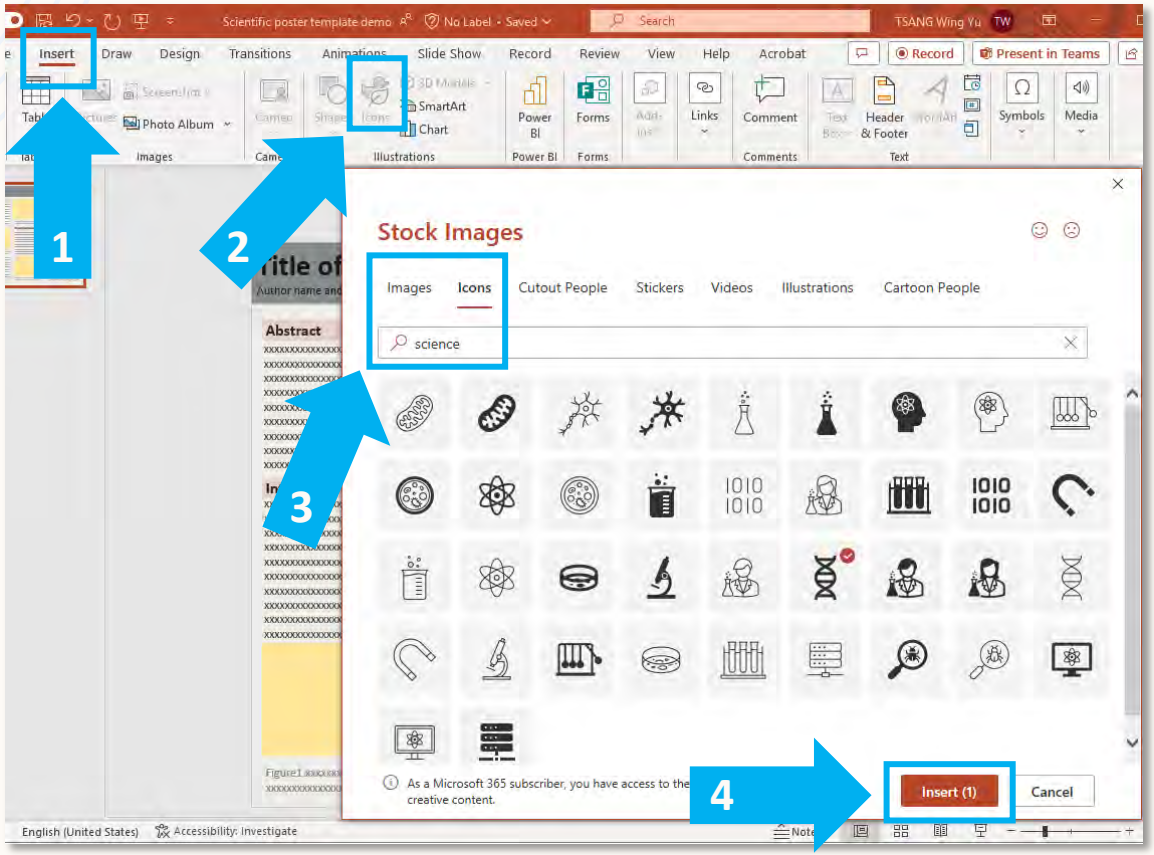
f) Edit the text box's background color by using shape fill

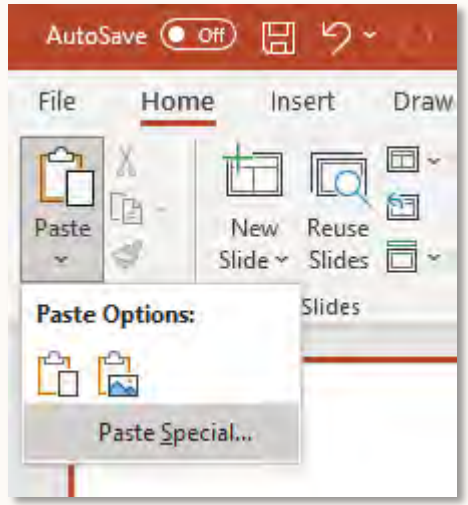
g) To remove the outline : shape outline > no outline





6. Insert vectors: Tables, Charts, Graphs and Drawing Objects

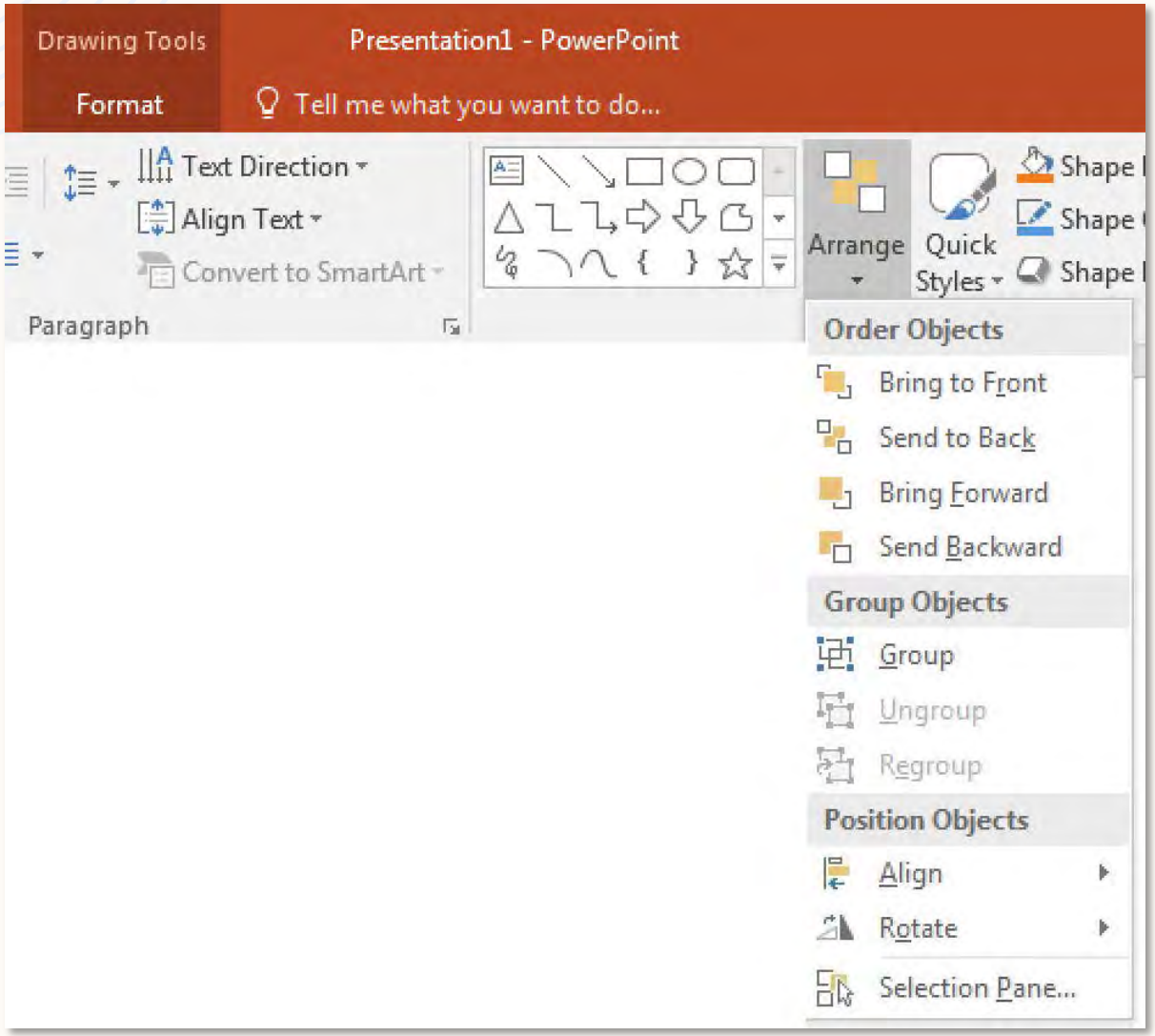




- For example, you could insert icons in PowerPoint
  - From **Insert**, click **Icons** which will bring up a menu of Stock Images on the right.
  - Type out “science” to see what images are available and find one that suits you. I’ve chosen a neuron in this case. **Click it** and then click **Insert** at the bottom of the Stock Image panel.
  - It will be added to your poster. Drag it to your preferred size, and color it **from the Graphics Fill panel.** Orange was the accent color we chose earlier.

- Data-generated tables, charts and graphs, graphics
  - Avoid rasterization (blurring) by using Copy & Paste or Paste Special…

7. Finishing touches: Arrange, Align and Group



- Aligning and Grouping objects will ensure all elements remain where you intend them to be. Failing to Group leaves you vulnerable to the possibility of inadvertently moving something.
- Once done annotating and arranging all objects, Select all objects, then Group all selected objects.
- Using the Align or Distribute Tools, click on the To Slide option and click on the Center Align buttons (there is one for horizontal and another for vertical)

SUMMARY

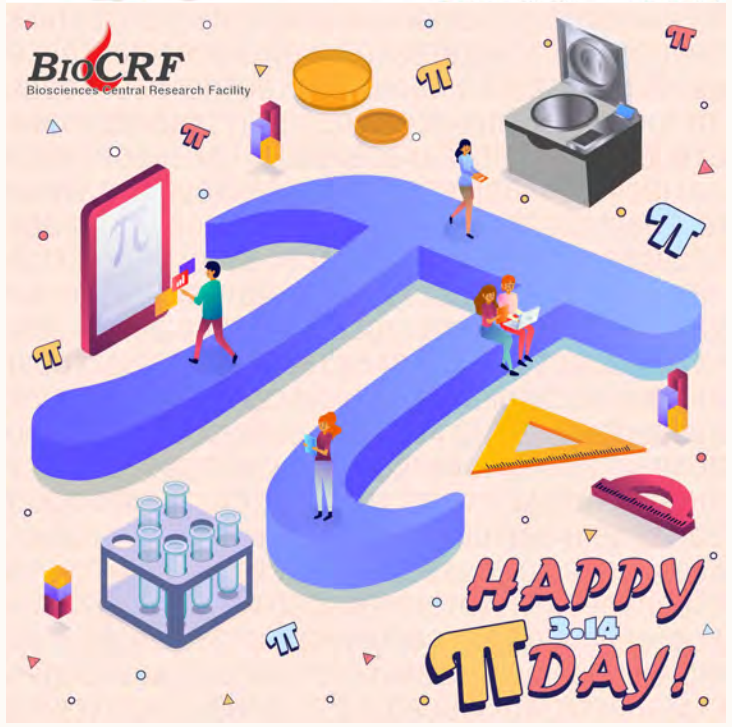
1. **Check out the submission guidelines of publishers/ journals**
2. **Download templates and adjust the size of your poster**
3. **Add designs and data to the graphical abstract**
4. **Export high resolution files for publications, presentation, and posters**

RECOMMENDED LINKS FOR PUBLICATIONS

Online poster making	Adobe Express	https://www.adobe.com/tw/express/
	Canva	https://www.canva.com/
Colour palette generator	Adobe Colour	https://color.adobe.com/create/color-wheel
	Canva colour	https://www.canva.com/colors/
	Material design palette	https://www.materialpalette.com/
Template for biological diagram	Freepik	https://www.freepik.com/
	Simplified science	https://www.simplifyscience.com/
	Wikimedia commons	https://commons.wikimedia.org/wiki/Main_Page
Enhance image resolution with AI	Bigjpg	https://bigjpg.com/

GRAPHIC DESIGN FOR BIOCRF

Graphic design for BioCRF



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THANK YOU

ANY COMMENTS ? QUESTIONS ?

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