Waipapa Taumata Rau
University of Auckland

Design 101: Presentations, Posters, and PowerPoints for Researchers

July 1st, 2025

Dawn Carlisle
Dr Ana Avilés

Why is design important to you?

Rule #1: Know your audience

Where will you use this?

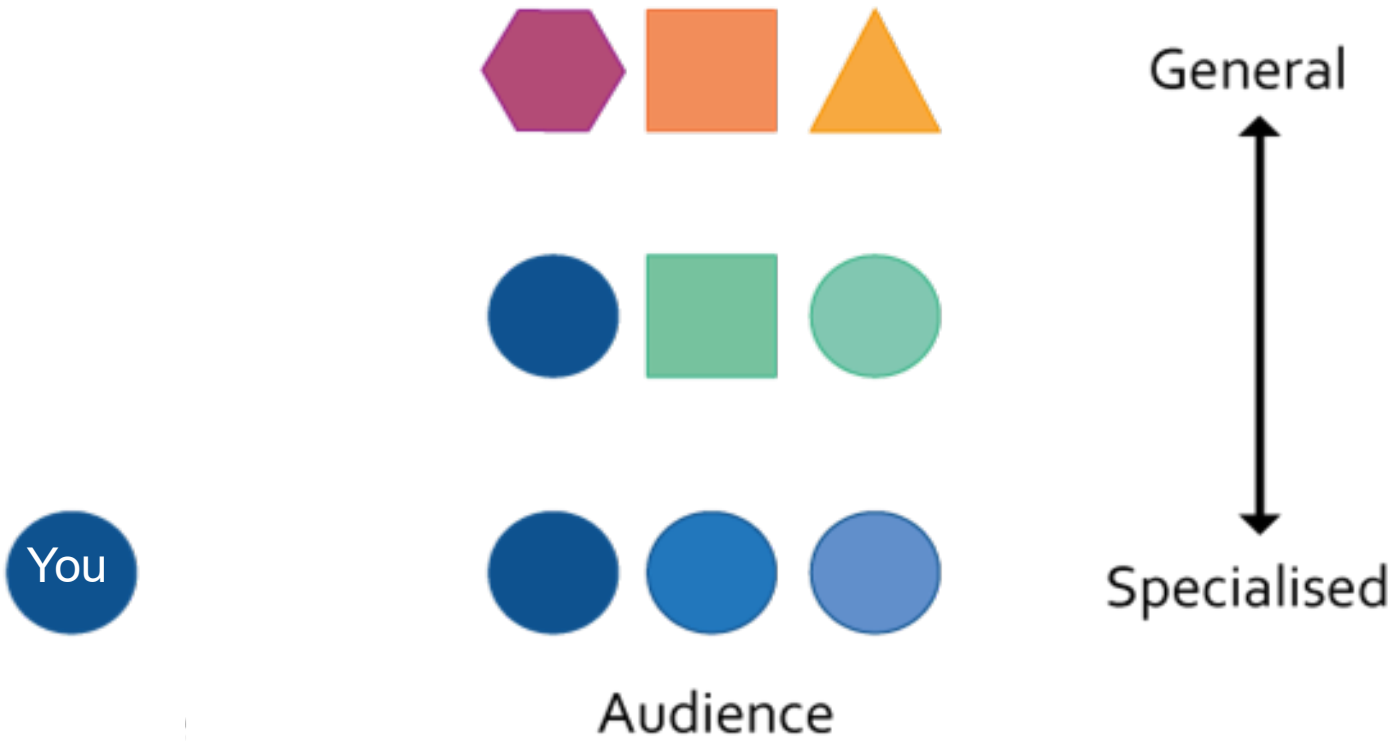
What are you trying to achieve?

Who will see it?

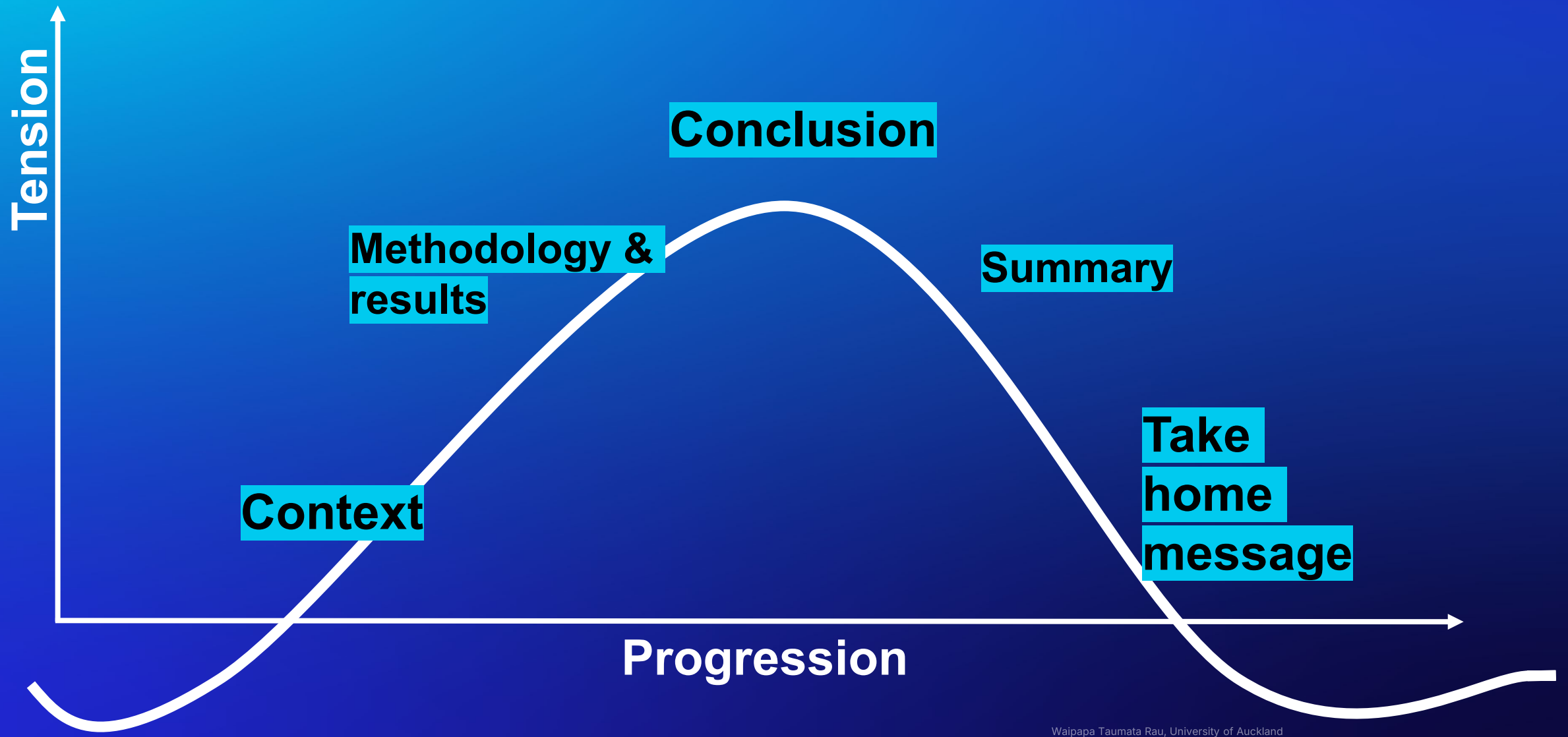
What do they already know?

Why do they care?

What's your **key message?**


General
You
Specialised
Audience

Structure follows a narrative arc:



Questions so far?

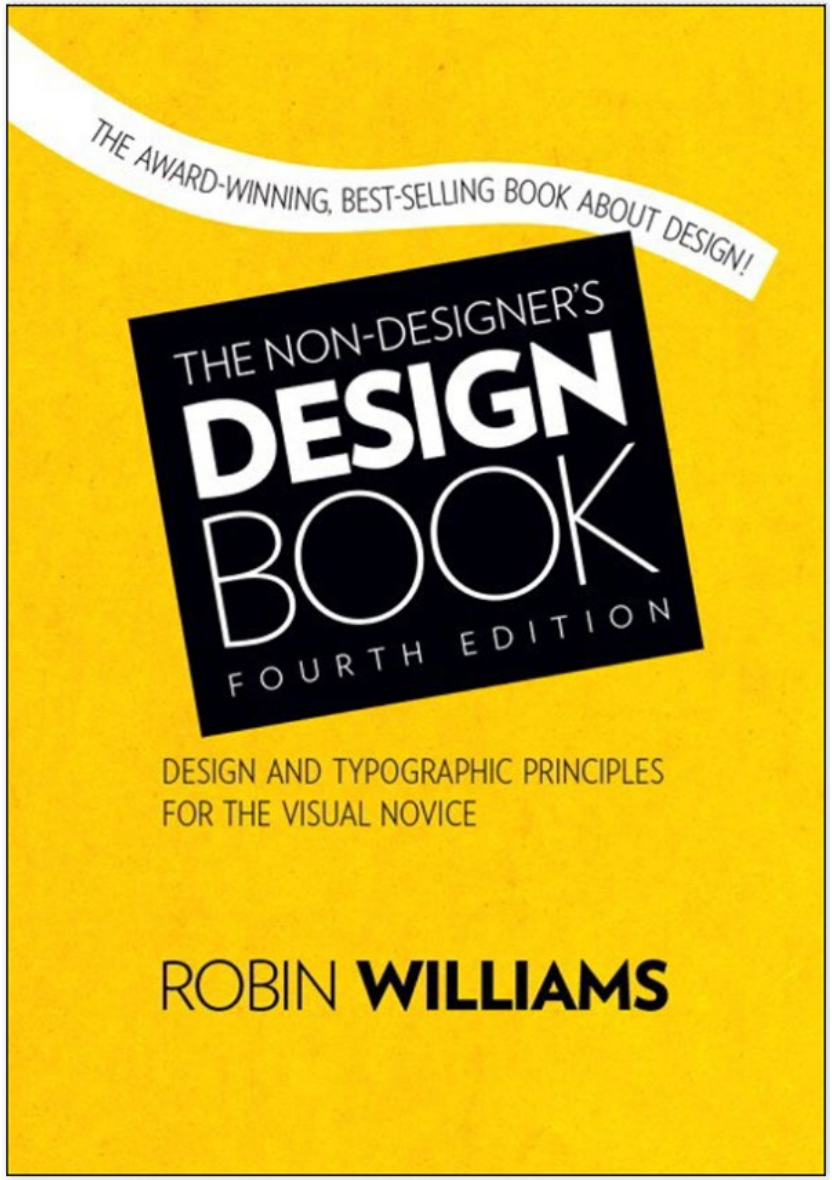
Basic principles of good design

Proximity

Alignment

Repetition

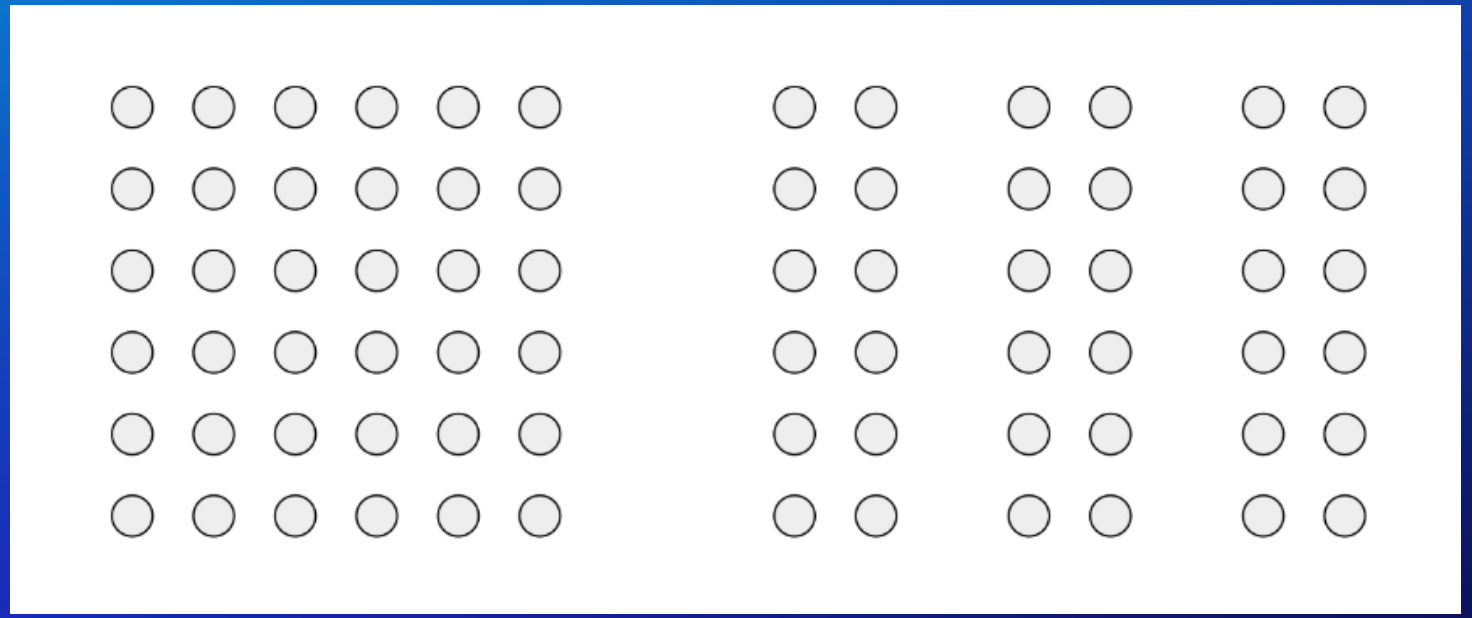
Contrast



- Williams, R. (2014). *The Non-Designer's Design Book* (4th ed.). Berkley, California: Peachpit Press

Proximity

Items relating to each other
should be grouped **close together.**



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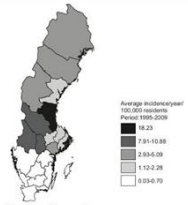
Seeing the unseen

Linda Karlsson, Elin Nilsson, Edvin Karlsson, Eva Larsson, Caroline Öhrman, Petter Lindgren, Jon Ahlinder, Kerstin Svensson, Pär Larsson, Mona Byström, Mats Forsman and Andreas Sjödin
FOI - Swedish Defense Research Agency, Umeå, Sweden

Natural aquatic systems

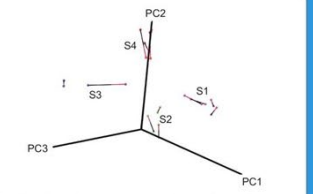
Characterize the reservoir of pathogens

The dynamics of prokaryotic communities (bacteria), eukaryotic communities (protozoa) and environmental factors (i.e. nutrient availability) are studied using metagenomics in order to pinpoint factors necessary for the persistence of *Francisella*, the causative agent of tularemia, in the environment between outbreaks.



Francisella in Sweden

Tularemia is endemic to most European countries, North America and large parts of Asia. Between 2006 and 2010, Sweden and Finland reported the highest number of cases per country in the world with annual averages of 305 and 298, respectively. The disease is mainly located in central and northern parts of the Sweden.



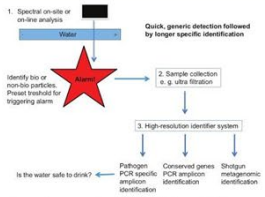
Understanding community interactions

The advantage of metagenomics is analysing covariation between bacterial and protozoa communities at the same time to build models to predict where in the environment pathogens survive. Highly sensitive markers arethen used to search for low abundant pathogen in their natural habitat.

Drinking water

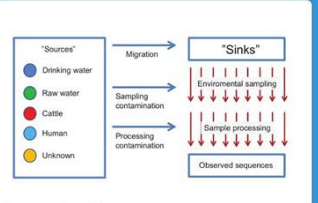
Drinking water security

Drinking water has caused many major outbreaks in Sweden and internationally. The reason for outbreaks is various types of microorganisms such as bacteria, viruses and protozoa. In Sweden, there have been several large waterborne outbreaks in recent times caused by the protozoan *Cryptosporidium*.



Automatic monitoring of hazards

The system consists of three partial solutions for the rapid analysis of microbial contamination along the production chain of drinking water. We intend to reduces the problem of infection by direct detection of deviation from the normal image and perform metagenomic profiling of the hazards / microorganisms that are problems in drinking water from raw water to the consumer.



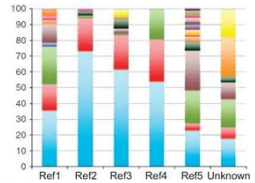
Source tracking

A parallel Bayesian approach is used to estimate the proportion of contaminants in metagenomic water samples that may come from various libraries of source environments. The source prediction is used to determine the probable origin of the pollution.

Unknown samples

Complete characterisation

Traditionally, studies in microbial forensics have focused on assays based on single markers from cultured species, thereby limiting the focus to a small percentage of species that can be cultured outside their natural environment. Metagenomic studies opens up possibilities to allow outstanding insight into bacterial diversity and coding capacity.



Metagenomic profiles

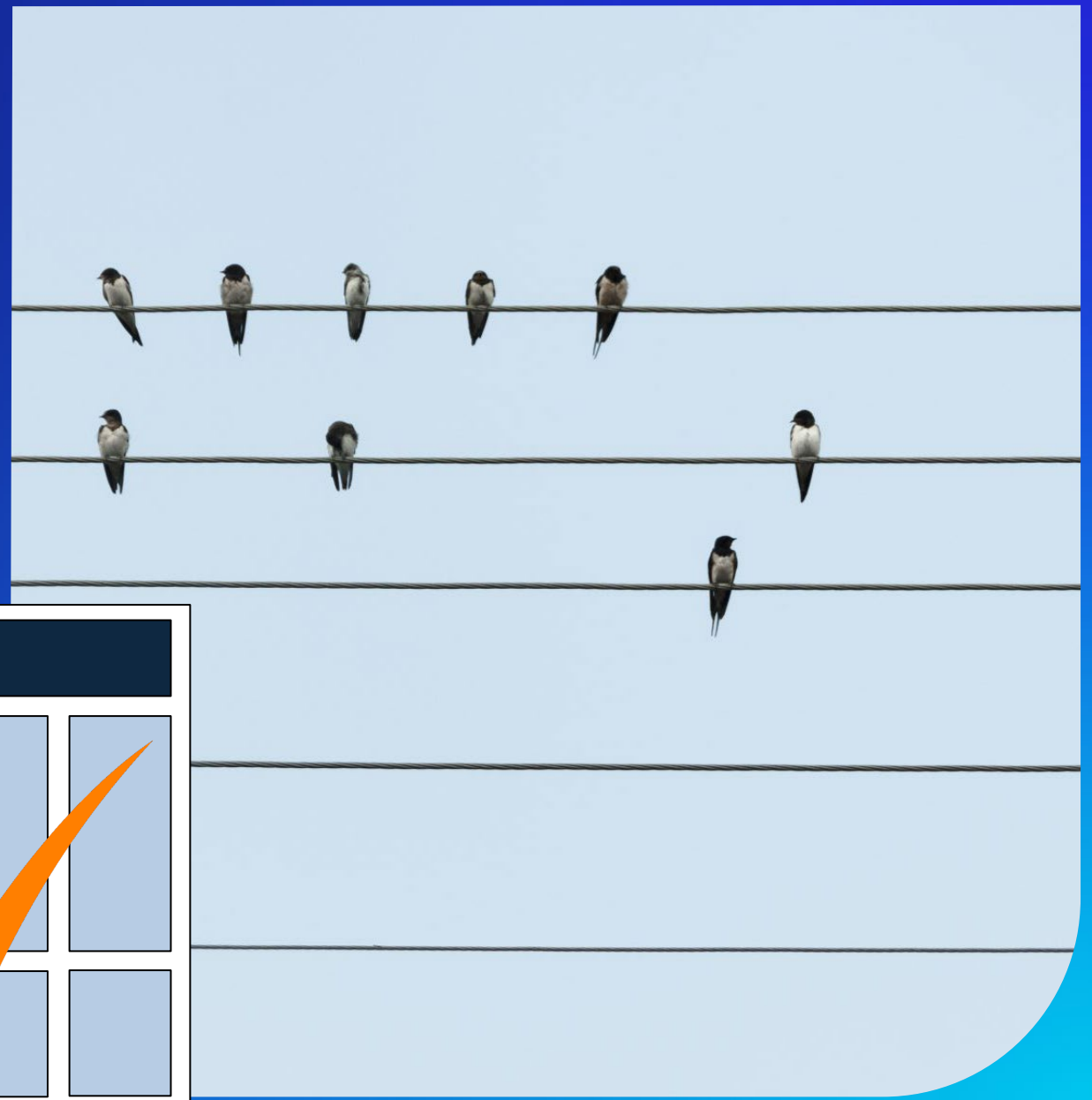
The open approach of metagenomics allows total characterisation of unknown samples independent of prior suspicion of content. The total sequence profile answer the question what is in the sample and not only if the sample contains any pathogens. The complete polymorphic differences outperformes previous methods used in microbial forensics.

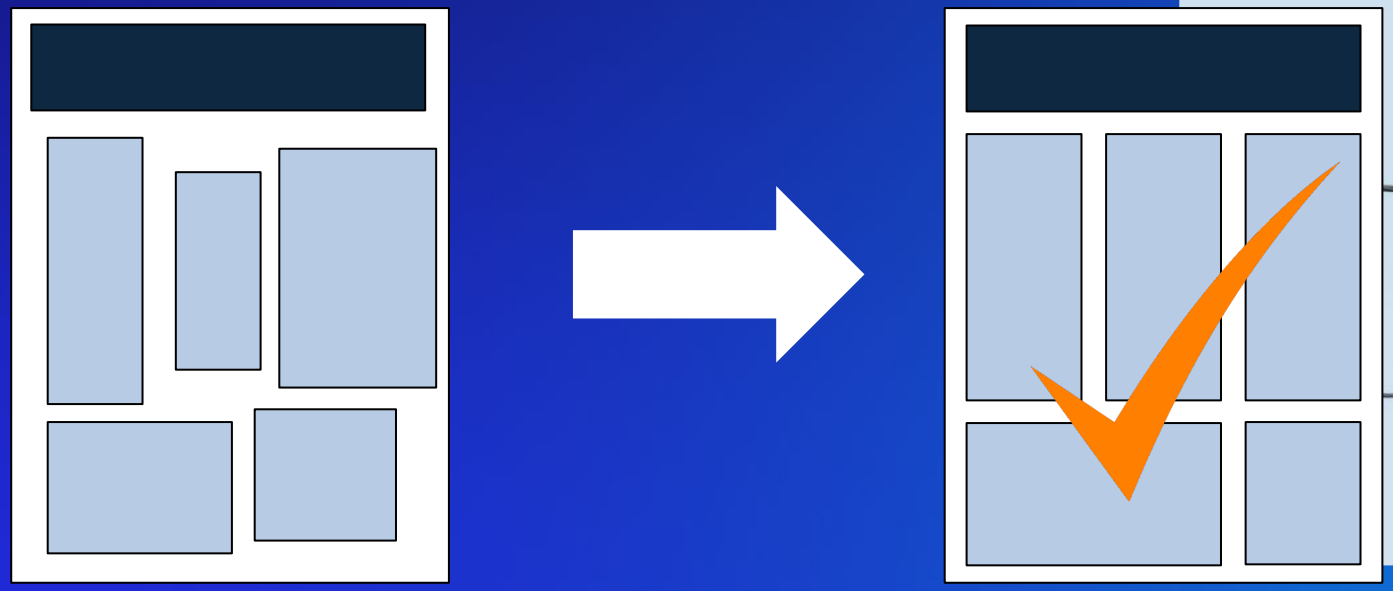
Tracing mtDNA

Mitochondrial DNA (mtDNA) is present in high concentration in samples of metazoan origin. Metagenomic sequencing may therefore be used to reconstruct the mitochondrian haplotype to trace geographic location of human and other metazoan mtDNA.

Alignment

Every element should have some **visual connection** with another **element.**





In typesetting, justification (sometimes referred to as 'full justification’) is the typographic alignment setting of text or images within a column or "measure" to align along both the left and right margin. Text set this way is said to be "justified."

In justified text, the spaces between words, and, to a far lesser extent, between glyphs or letters (known as “tracking”), are stretched or sometimes compressed in order to make the text align with both the left and right margins.

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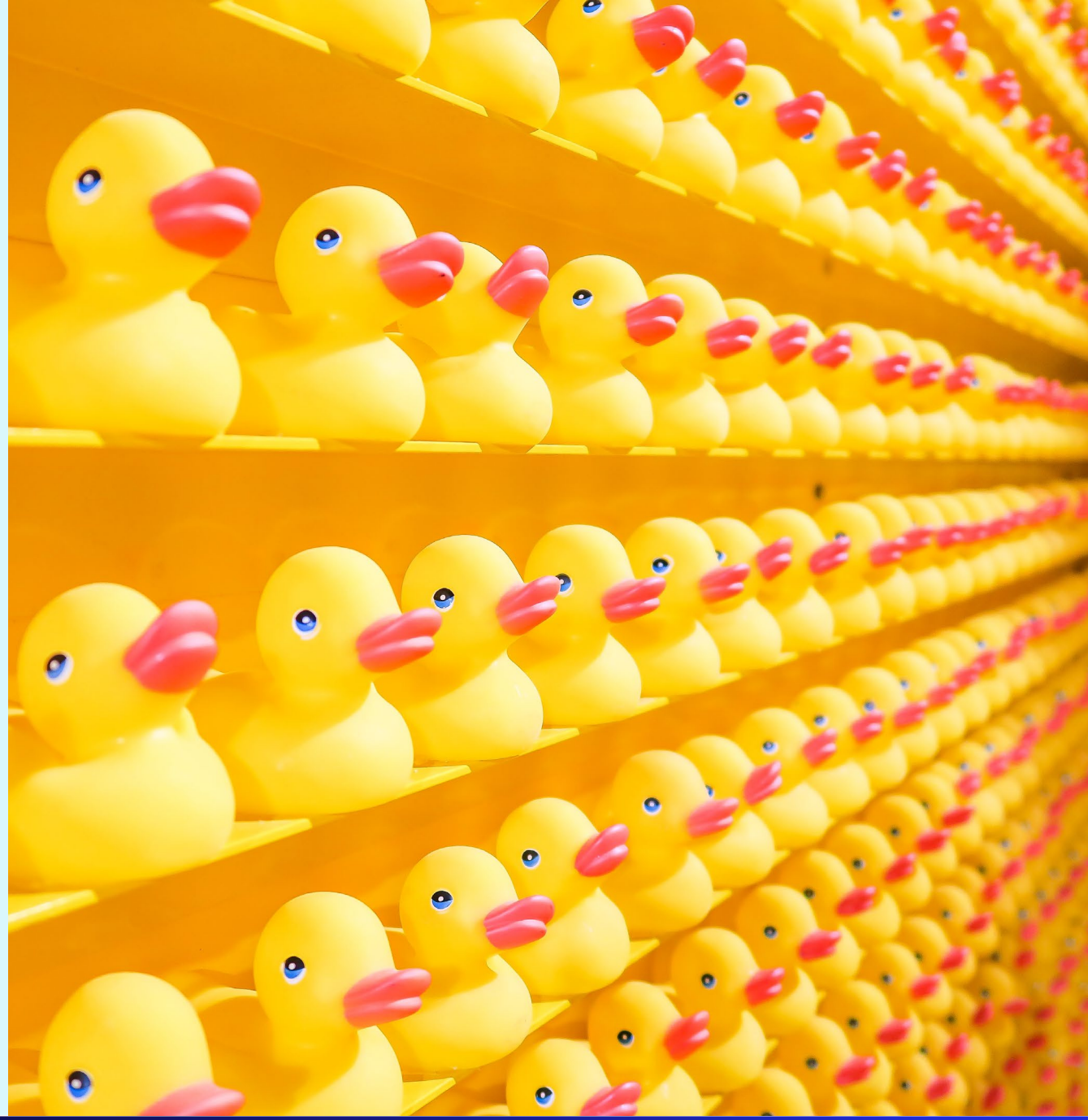
Alignment: Should you justify?

Repetition

Repeat visual elements.

E.g. colours, shapes, textures, fonts, spatial relationships, etc.

Develops organisation and strengthens unity.



hugs
a dog bakery
gallery • daycare
We know you love your four-legged friends,
So hike on over to Hugs for shows of affection!
Sterling Silver Jewelry...perfect for braggin' on your pup
Toys Galore...for making your dog feel special
Custom art prints of you and your furry friend
Dog calendars, books, and mouse pads
Figurines and statues of all breeds
First Aid Kits
Friday, July 11 and Saturday, July 12
Receive a FREE mini snack pack of Hugs puppy cookies
with any hiking gear purchase!
"Somebody needs a Hug!!!"
Hugs, where biscuits, beds, and books beckon
503 OLD DOG TRAIL, MADRAS, OR, 99999
TELEPHONE: (505) 555-1212 FAX: (505) 555-1212

hugs
a dog bakery • gallery • daycare
We know you love your four-legged friend, so hike on over to hugs for shows of affection:
Sterling silver jewelry—perfect for braggin' on your pup
Toys galore—for making your dog feel special
Custom art prints of you and your furry friend
Dog calendars, books, mousepads, figurines, first aid kits
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Somebody needs a hug!
hugs where biscuits, beds, and books beckon
503 Old Dog Trail • Madras • Oregon • 99999 T 505 555 1212 F 505 555 1212

Contrast

Title: Attention grabbing

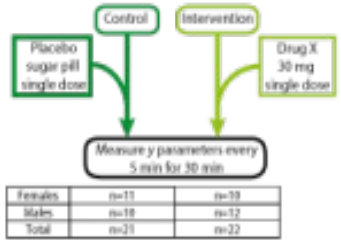
Names of the people that did the research

Introduction

The introduction gives your audience some background to your work. You need to explain why your research is important and why they should care. What were the objectives of your study? What research question were you trying answer?

Methods

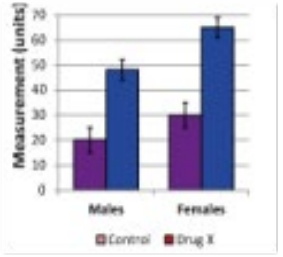
Outlines how you conducted your research. Summarise your methods and avoid lengthy detail. Consider using a flowchart or diagram, in addition to text, when describing your methods.

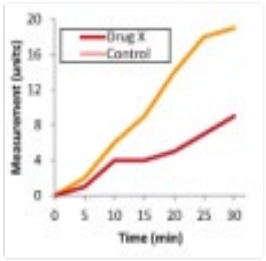


Females	n=11	n=10
Males	n=10	n=12
Total	n=21	n=22

Results

Summarise your data in easy to understand graphs or tables. What does your data show? Avoid reading your graphs to your audience. Instead, point out the highlights and trends shown by your data.





Discussion

Interpret your results. What do your results mean? Why did you get these results? Answer your research question. What further work would you suggest doing?

Conclusions

What is your take home message?

References

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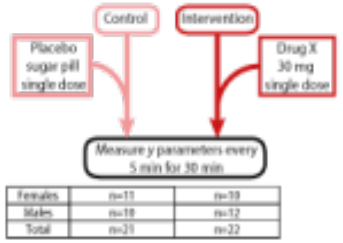

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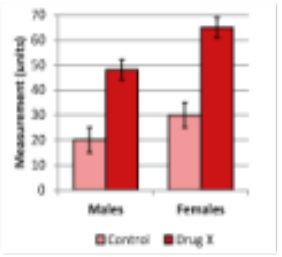

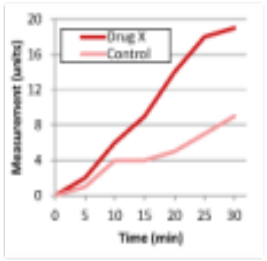

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Text

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"In little more than a hundred years", writes poster expert John Barnicoat, "it has come to be recognized as a vital art form, attracting artists at every level, from painters like Toulouse-Lautrec and Mucha to theatrical and commercial designers."[2] They have ranged in styles from Art Nouveau, Symbolism, Cubism, and Art Deco to the more formal Bauhaus and the often incoherent hippie posters of the 1960s.
Mass production
Posters, in the form of placards and posted bills, have been used since earliest times, primarily for advertising and announcements. Purely textual posters have a long history: they advertised the plays of Shakespeare and made citizens aware of government proclamations for centuries. However, the great revolution in posters was the development of printing techniques that allowed for cheap mass production and printing, including notably the technique lithography which was invented in 1796 by the German Alois Senefelder. The invention of lithography was soon followed by chromolithography, which allowed for mass editions of posters illustrated in vibrant colours to be printed.
Developing art form
By the 1890s, the technique had spread throughout Europe. A number of noted French artists created poster art in this period, foremost amongst them Henri de Toulouse-Lautrec, Jules Chéret, Eugène Grasset, Adolphe Willette, Pierre Bonnard, Louis Anguetin, Georges de Feure and Henri-Gabriel Ibels.[3] Chéret is considered to be the "father" of advertisement placards. He was a pencil artist and a scene decorator, who founded a small lithography office in Paris in 1866. He used striking characters, contrast and bright colours, and created over 1000 advertisements, primarily for exhibitions, theatres, and products. The industry soon attracted the service of many aspiring painters who needed a source of revenue to support themselves.
Chéret developed a new lithographic technique that suited better the needs of advertisers: he added a lot more colour which, in conjunction with innovative typography, rendered the poster much more expressive. Not surprisingly, Chéret is said to have introduced sex in advertising or, at least, to have exploited the feminine image as an advertising ploy. In contrast with those previously painted by Toulouse-Lautrec, Chéret's laughing and provocative feminine figures meant a new conception of art as being of service to advertising.
Posters soon transformed the thoroughfares of Paris into the "art galleries of the street." Their commercial success was such that some of the artists were in great demand and theatre stars personally selected their own favorite artist to do the poster for an upcoming performance. The popularity of poster art was such that in 1884 a major exhibition was held in Paris.
Commercial uses
Lithograph poster for Ranch 10, a Western-themed play by Harry Meredith which opened in New York City in August 1882
By the 1890s, poster art had widespread usage in other parts of Europe, advertising everything from bicycles to bullfights. By the end of the 19th century, during an era known as the Belle Époque, the standing of the poster as a serious artform was raised even further. Between 1895 and 1900, Jules Chéret created the Maîtres de l'Affiche (Masters of the Poster) series that became not only a commercial success, but is now seen as an important historical publication. Alphonse Mucha and Eugène Grasset were also influential poster designers of this generation, known for their Art Nouveau style and stylized figures, particularly of women. Advertisement posters became a special type of graphic art in the modern age. Poster artists such as Théophile Steinlen, Albert Guillaume, Leonetto Cappiello, Henri Thiriet and others became important figures of their day, their art form transferred to magazines for advertising as well as for social and political commentary.
In the United States, posters did not evolve to the same artistic level. American posters were primarily directed towards basic commercial needs to deliver a written message. However, the advent of the travelling circus brought colourful posters to tell citizens that a carnival was coming to town. But these too were very commercially utilitarian, of average quality, and few saw any real artistic creativity.
Many posters have had great artistic merit and have become extremely collectible. These include the posters advertising World's Fairs and Colonial Exhibitions.
Political uses
A framed poster displaying the national motto of the United States, "In God We Trust," in a New Philadelphia High School classroom.
Other times of great turmoil also produced great posters. The 1960s w the rise of pop art and protest movements throughout the West; both made great use of posters. Perhaps the most acclaimed posters were those produced by French students during the so-called "événements" of May 1968. During the 1968 Paris student riots and for years to come, Jim Fitzpatrick's stylized poster of Marxist revolutionary Che Guevara (based on the photo Guerrillero Heroico), also became a common youthful symbol of rebellion.[4]
After the September 11 attacks, public schools across the United States posted "In God We Trust" framed posters in their "libraries, cafeterias and classrooms." The American Family Association supplied several 11-by-14-inch posters to school systems.[5]
Poster printing

Many printing techniques are used to produce posters. While most posters are mass-produced, posters may also be printed by hand or in limited editions. Most posters are printed on one side and left blank on the back, the better for affixing to a wall or other surface. Pin-up sized posters are usually printed on A3 Standard Silk paper in full colour. Upon purchase, most commercially available posters are often rolled up into a cylindrical tube to allow for damage-free transportation. Rolled-up posters can then be flattened under pressure for several hours to regain their original form.

1000 words

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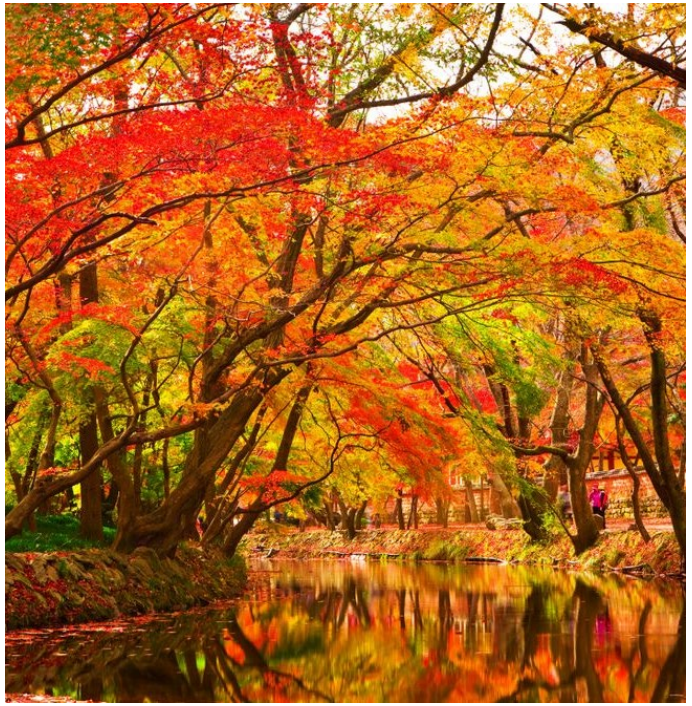
300 words

Replace words with... Photos



Images sourced from The Noun Project (thenounproject.com). Hedgehog by Scopio: Hedgehog on pool floater in swimming pool; Underwater shot of sea animals by Scopi; Forest: Autumnal Forest by GPA

Background photo by alan King on Unsplash

Image sources

Look for images with Creative Commons licenses!

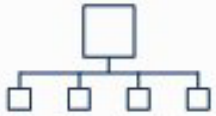
- Unsplash
- Pixabay
- Pexels
- Wikimedia Commons
- Britannica ImageQuest (access through Libraries and Learning Services databases)
- Noun Project for icons

Replace words with...Diagrams

Abstract Concepts

Flow

Linear
Circular
Divergent/Convergent
Multidirectional



Structure

Matrices
Trees
Layers

Cluster

Overlapping
Closure
Enclosed
Linked

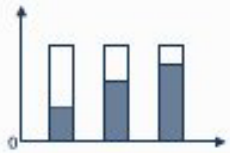
Radiate

From a point
With a core
Without a core

Realistic Concepts

Pictorial

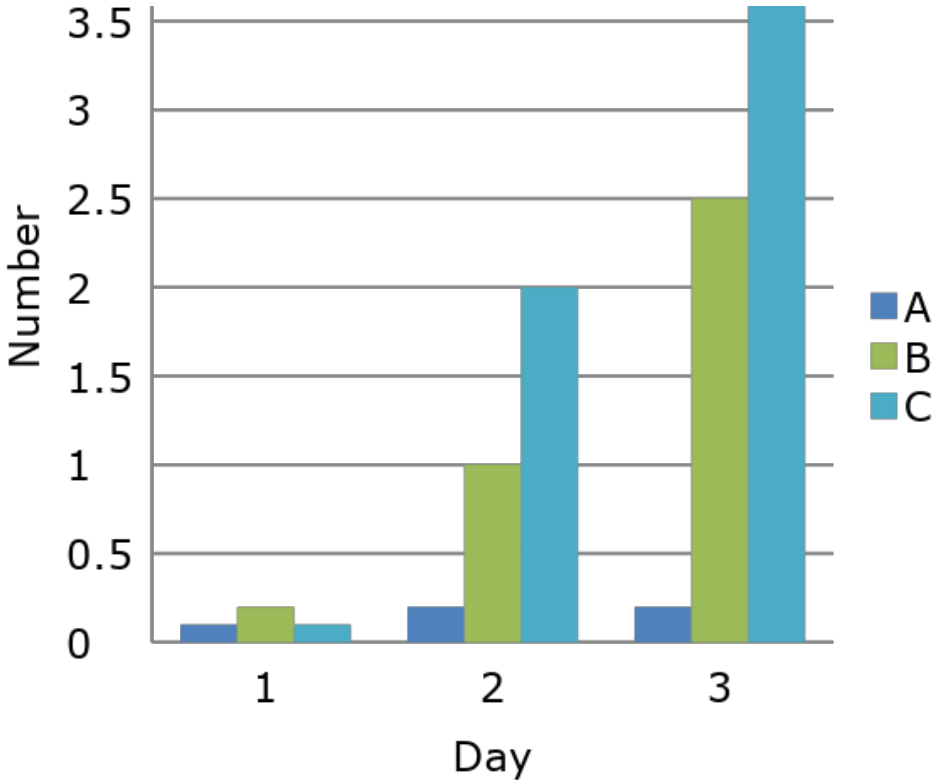
Direction
Location
Reveal
Process
Influence



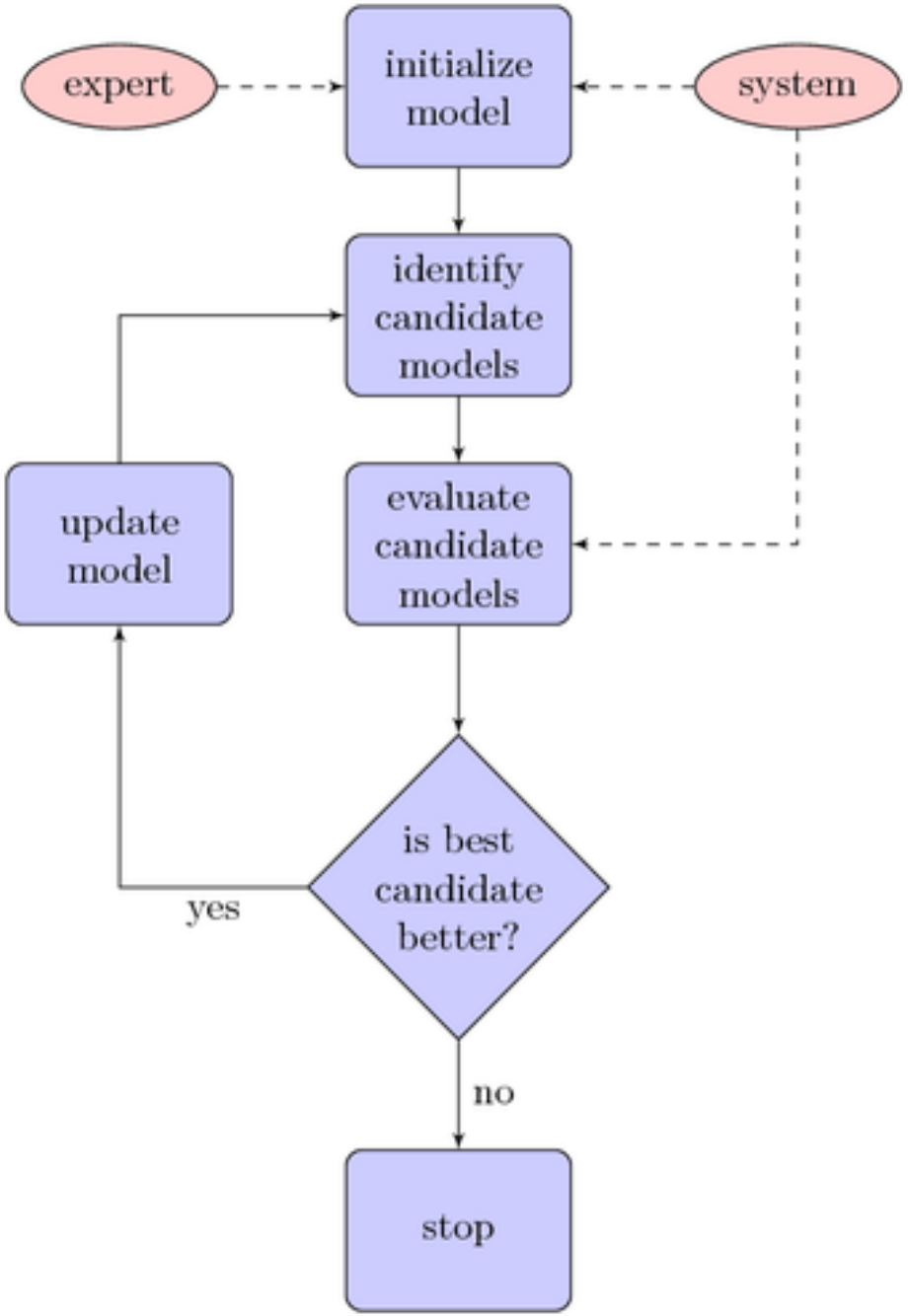
Display Data

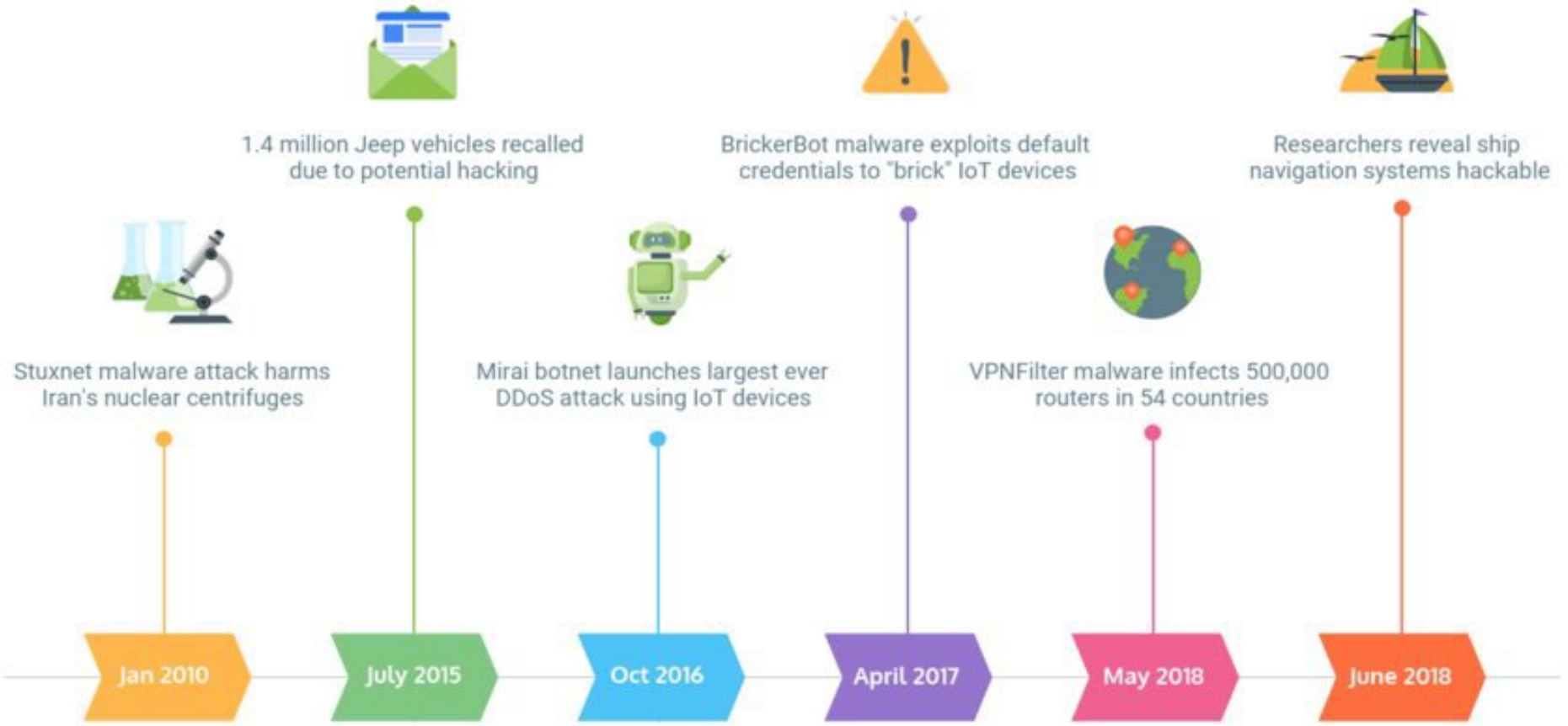
Comparison
Trend
Distribution

Replace words with...Graphs



Replace words with...Flowcharts

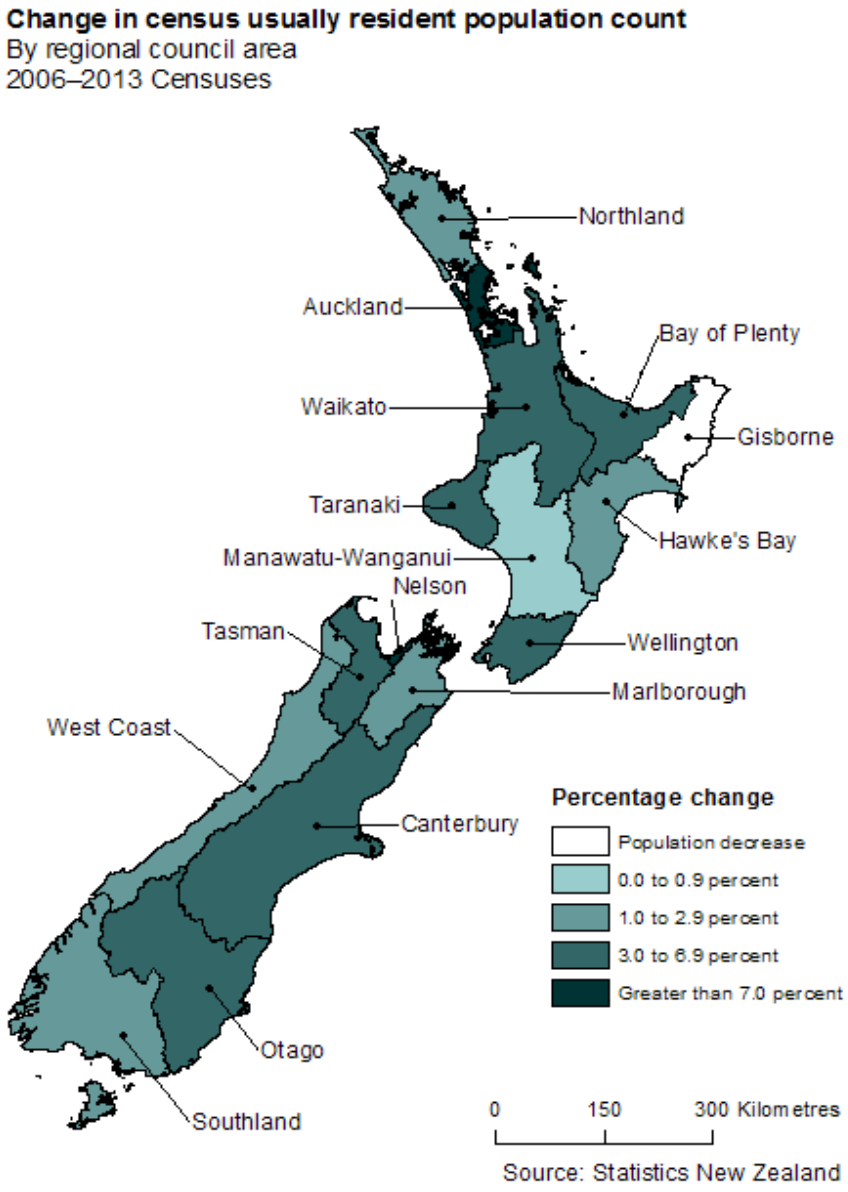




commons.wikimedia.org/wiki/File:Internet_of_things_security_breach_timeline.png

Replace words with...Timelines

Replace words with...Maps



commons.wikimedia.org/wiki/File:Change_in_population_by_regions_in_New_Zealand_based_on_2006_-_2013_censuses.gif

Remember: people still need to read your figures!

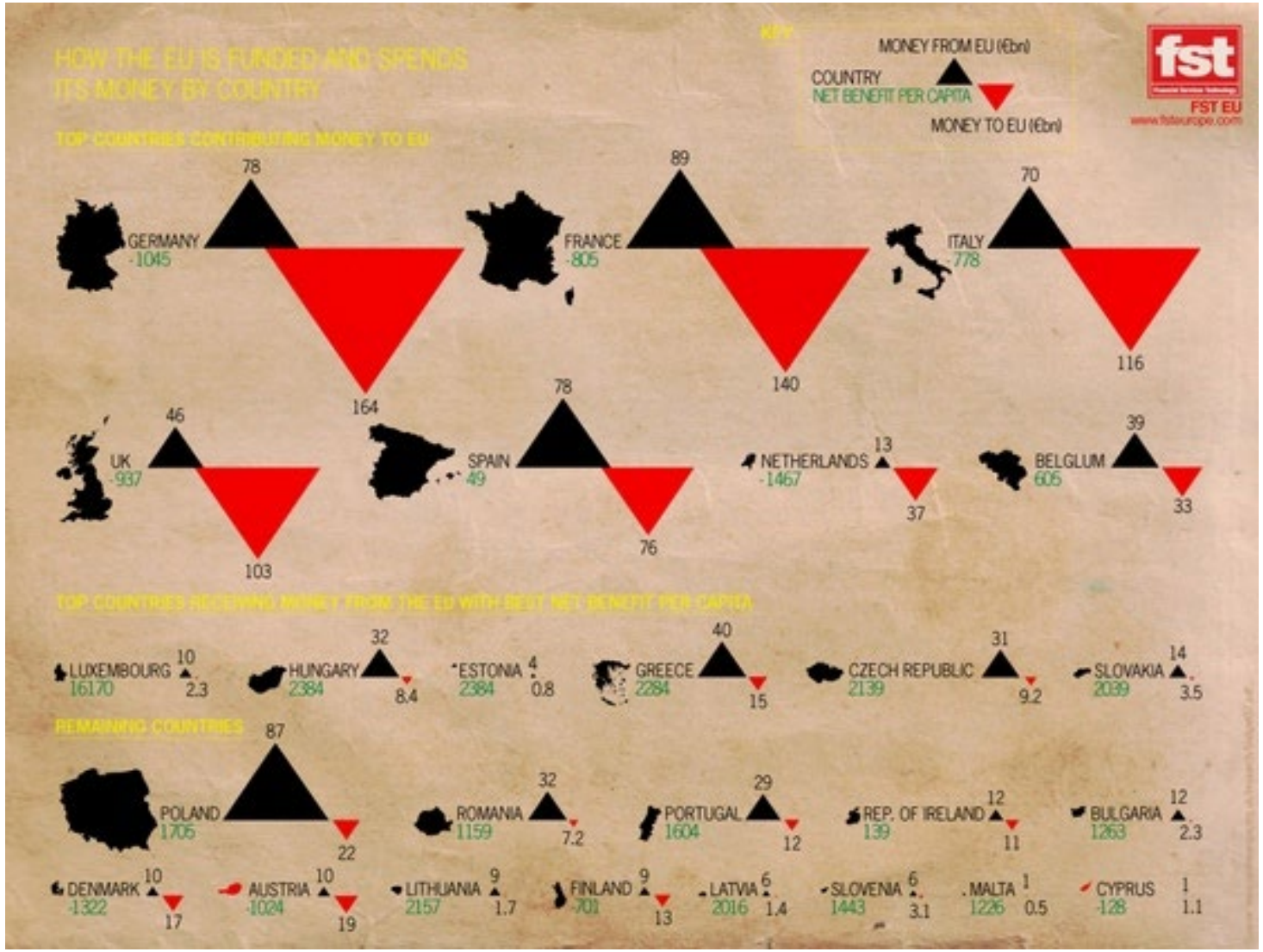


Image sourced from: https://eagereyes.org/criticism/march-chart-madness

What image, picture or diagram represents your research?

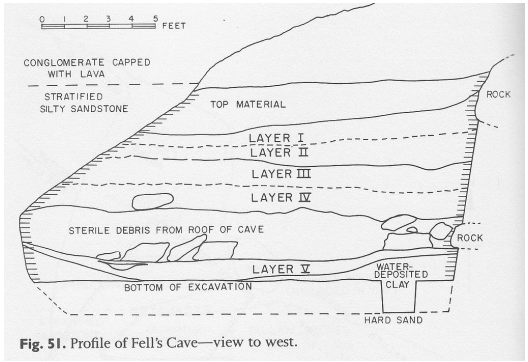
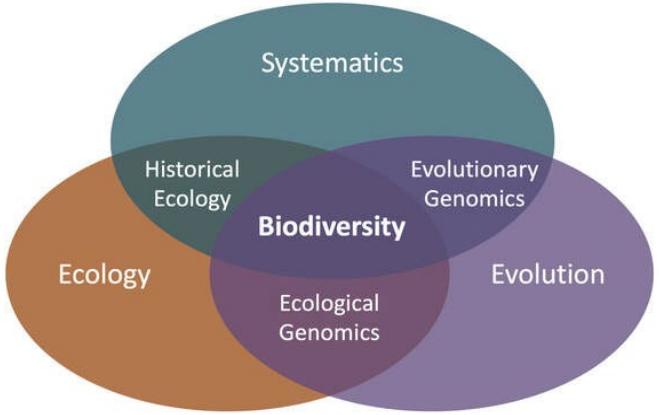


Fig. 51. Profile of Fell's Cave—view to west.

Diagram of Fell's Cave stratigraphy. Fell's Cave Stratigraphy.jpg - Wikimedia Commons

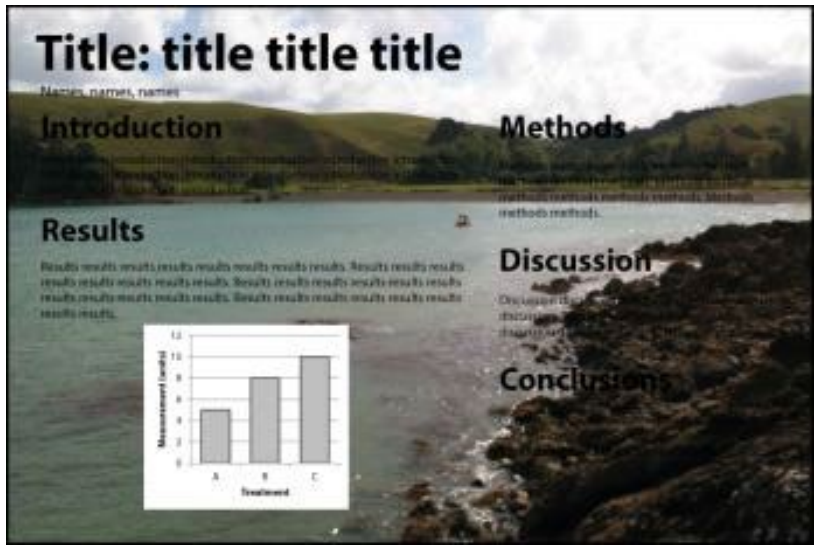


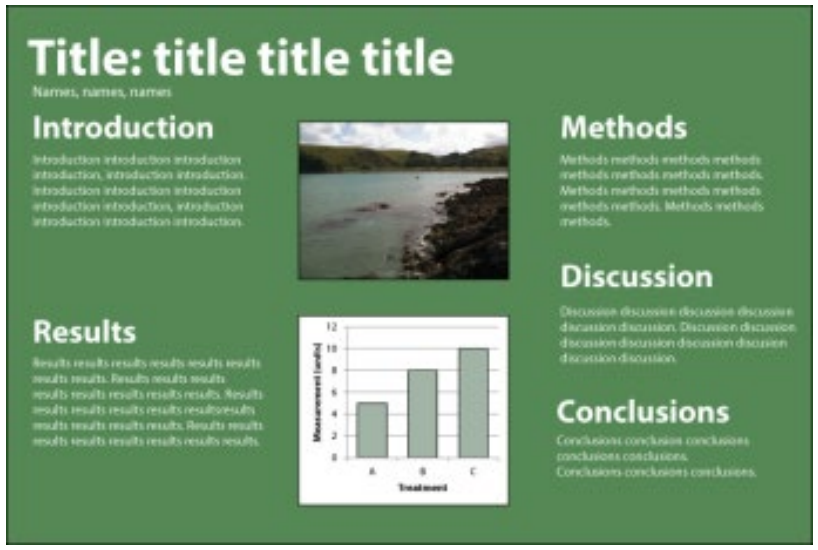
The Harris Lab research philosophy. https://pharris.people.ua.edu/research.html.

Venus of Milo. Louvre Museum. Marble, Hellenic Period, ancient Greece.

Background

Early Progress Towards Actinophyllic Acid
Michael R. Emmett and Michael A. Kerr (makerr@uwo.ca)
Department of Chemistry, Western University


Title: title title title
Introduction
Methods
Results
Discussion
Conclusions


Title: title title title
Introduction
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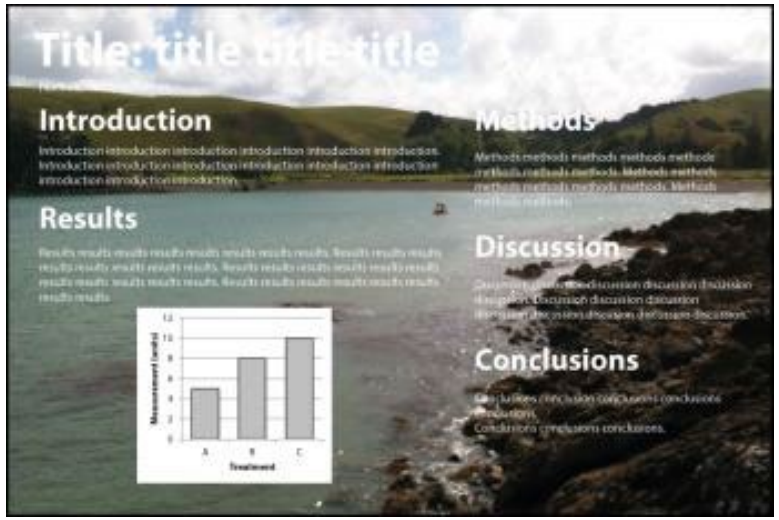
Conclusions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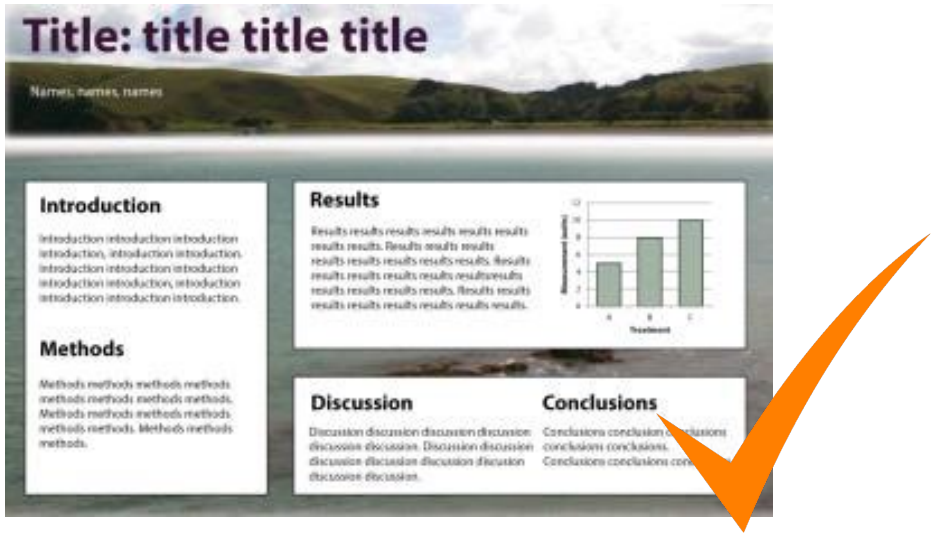
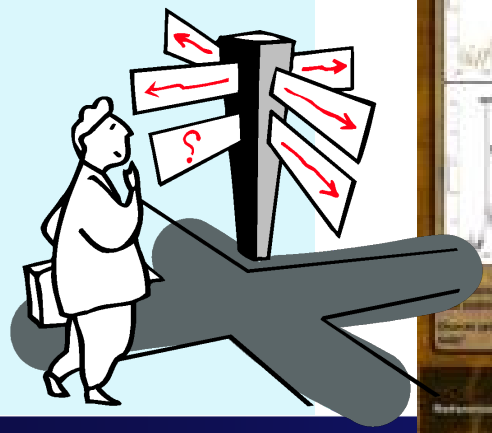
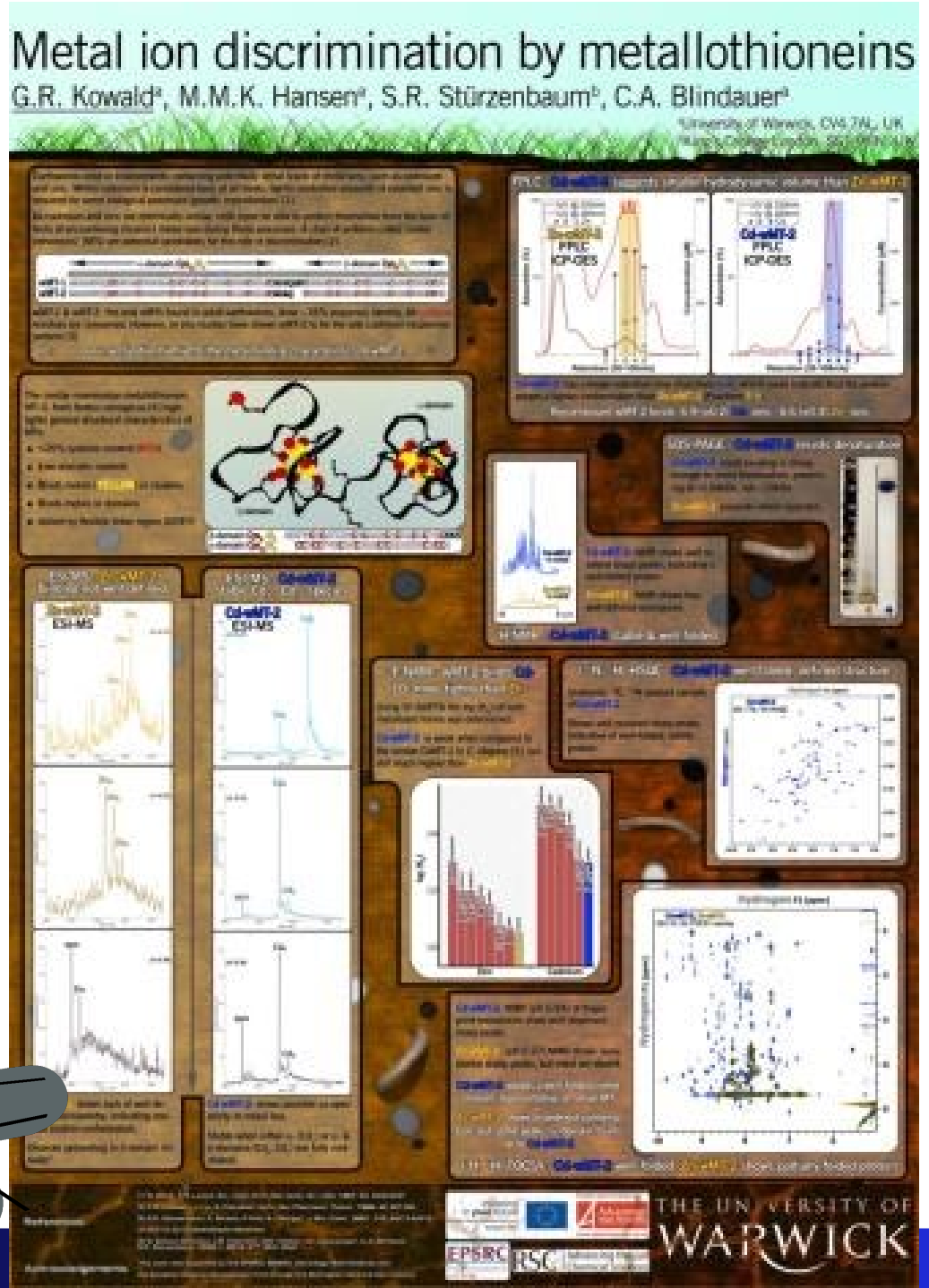

Title: title title title
Introduction
Results
Methods
Discussion
Conclusions

Layout

Use **columns** and clear **headings** to **direct** the reader!





72 dpi

300 dpi

What do you associate with the colour blue?

Colour

Some colour combinations
Some colour combinations make text difficult to read
Some colour combinations make text difficult to read
Some colour combinations make text difficult to read
Some colour combinations make text difficult to read
Some colour combinations make text difficult to read
Some colour combinations make text difficult to read

Colour

Pick colour combinations that make text EASY to read

Pick colour combinations that make text EASY to read

Pick colour combinations that make text EASY to read

Pick colour combinations that make text EASY to read

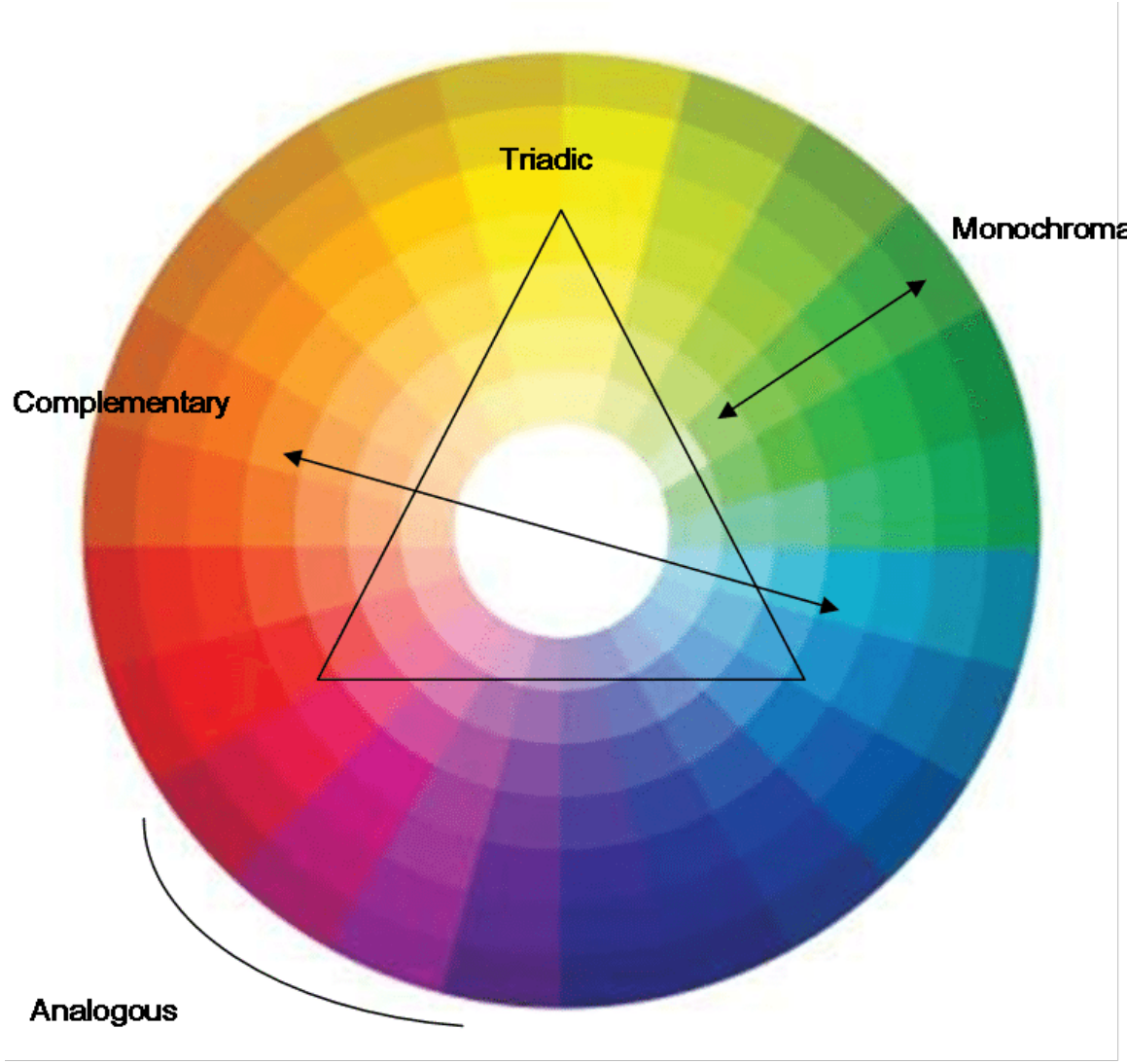
Pick colour combinations that make text EASY to read

Pick colour combinations that make text EASY to read

Pick colour combinations that make text EASY to read

Colour

Yellow
Orange-Yellow
Yellow-Green
Orange
Green
Red-Orange
Blue-Green
Red
Blue
Violet-Red
Blue-Violet
Violet


Triadic
Monochromatic
Complementary
Analogous

Colour

Warm

Cold

Does your research have a colour?

Last notes about colour…

- Be conscious of colourblindness! Certain colour combinations look very different to some people.
- Think about how the final product will look compared to your computer screen. e.g. very bright colours can be blinding on a large screen, but won't be as vivid on a printed poster.

Fonts:

- Use professional FONTS that people can read EASILY

Use **professional fonts** that people can **read easily**

96 Font

Title

48 Font

36 Font

Headings

24 Font

20 Font

18 Font

Sub-headings

16 Font

14 Font

12 Font

10 Font

Body

Test printout

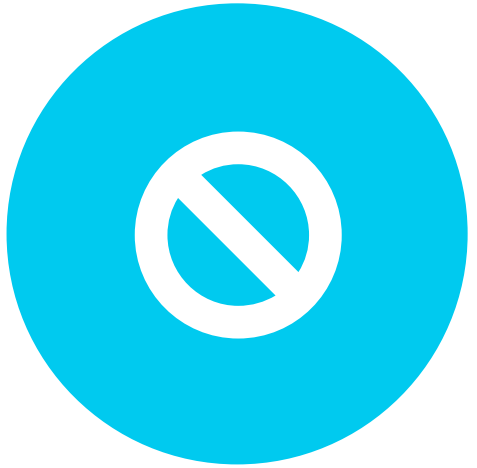
- Can you read the text?
- How do the colours look?

Spelling and grammar:

People will notice!

Last pointer...Referencing!

Even though you're presenting something in a visual medium, don't forget to reference your sources.



Plagiarism is plagiarism, whether it's in words or images.

For example:

V&A Museum London: Accession number: S.35-2018

Stormtrooper costume and blaster gun worn in the original Star Wars trilogy (1977 - 1983). Given by the British Film Institute.

Questions?

Contact us!

library.auckland.ac.nz/ask-us

Ngā mihi!
Thanks! ☺