

# INKSCAPE

Joseph Longworth

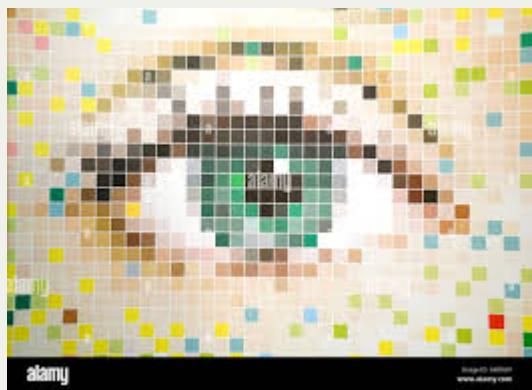
# WHAT IS VECTOR GRAPHICS?

- Traditional graphic design software uses raster graphics, made up of pixels.
- Vector graphics, on the other hand, are based on mathematical paths and can be scaled infinitely without losing quality.
- This makes them perfect for logos, icons, and plots that need to be used in various sizes.

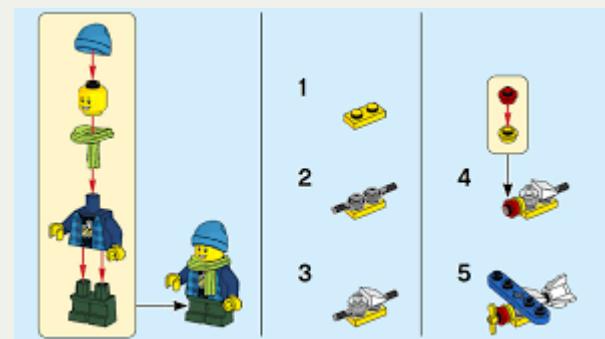
(People used to print A4 only now we zoom in and out Screen)

# GRAPHIC TYPE

## Raster



## Vector Graphic



- JPEG
- TIF
- PNG
- WebP
- ai
- eps
- PDF (?)
- **SVG**

# CLASS ACTIVITY 1 : EXPLORE A JPEG, PNG AND SVG. (10 MIN)

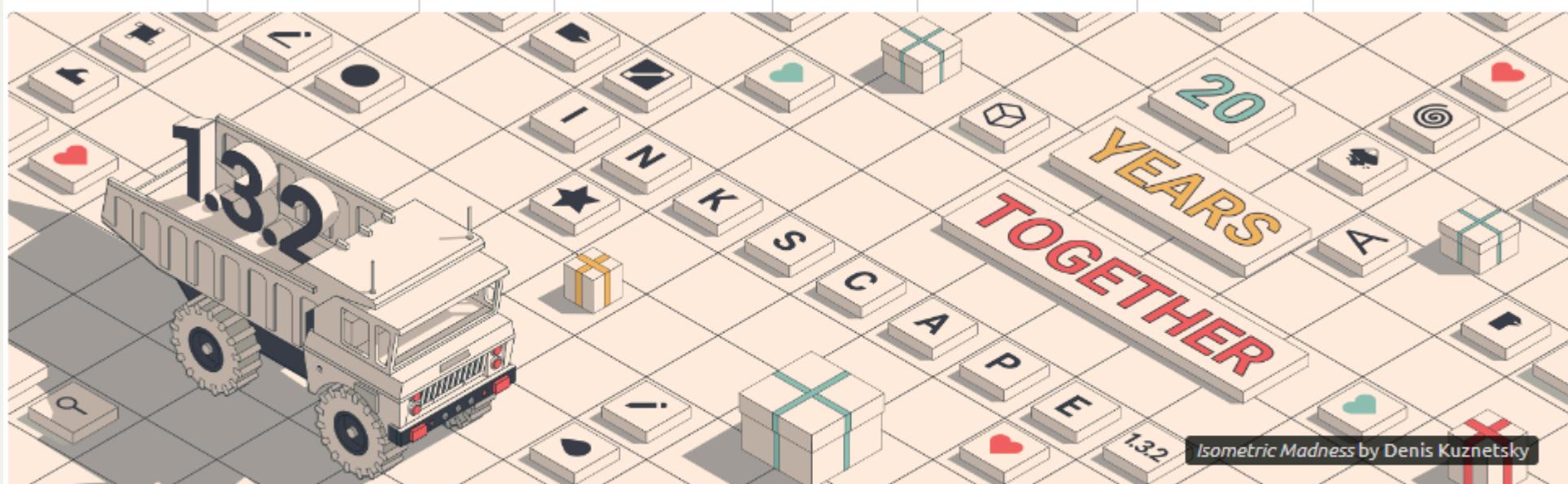
- Open the Jpeg and PNG (in a browser)  
Try to zoom in & out.
  - We could increase resolution but to what level and file size?
- Open the SVG (in a browser) Try to zoom in & out.
- Open the SVG in Notepad++ or notepad
  - (will need to force it to open from software)
- Ignoring the head what components make up a SVG



# INTRODUCING INKSCAPE



Inkscape is a free and powerful open-source software for creating vector graphics.

[ABOUT](#)[DOWNLOAD](#)[NEWS](#)[COMMUNITY](#)[LEARN](#)[CONTRIBUTE](#)[DEVELOP](#)[SUPPORT US](#)

*Isometric Madness by Denis Kuznetsky*

#### Download Now!



Get the professional vector graphics editor!

#### Explore Features



Find out what Inkscape is capable of

#### Community Gallery



Showcase of creations from the community

#### Learning Resources



HowTos, Videos, Tutorials and more...

# INKSCAPE VS ADOBE ILLUSTRATOR

	Inkscape	Adobe Illustrator
Common uses	Drawing, create vector graphics for digital use	Logo, graphic vectors, drawing & illustrations, Print & digital materials
Compatibility	Windows, Mac, Linux	Windows, Mac, Linux, iPad
Pricing	Free	7 Days Free Trial \$22.99/month
Ease of Use	Easy, beginner-friendly	Beginner-friendly but requires training
Interface	Old-fashion but customizable	More tools are handy to use.

Affinity: Another alternative with a one time payments model (benefit over free...?)

# BASIC OPERATIONS TO DRAW

We'll watch a video to cover how to use Inkscape to draw.  
13 min

InkScape - Tutorial for Beginners in 13 MINUTES! [ FULL GU...

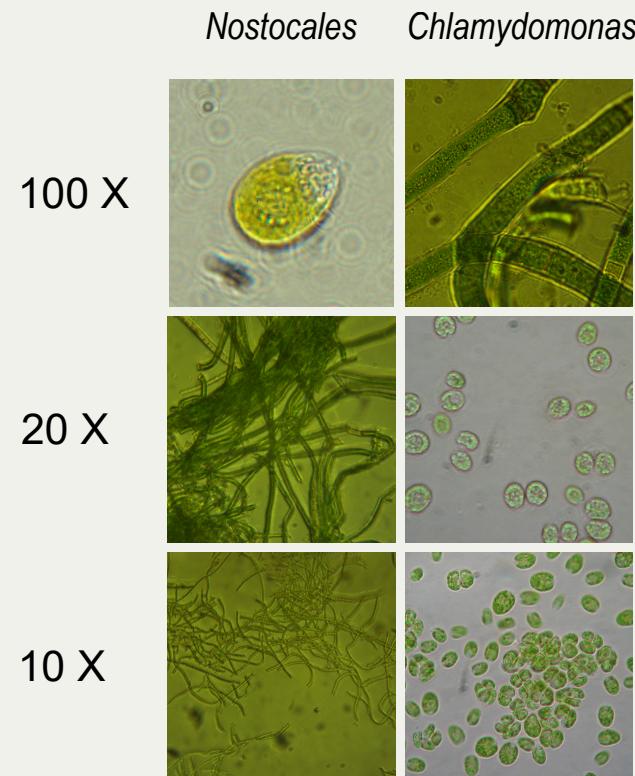


# TYPICAL USE IN SCIENCE

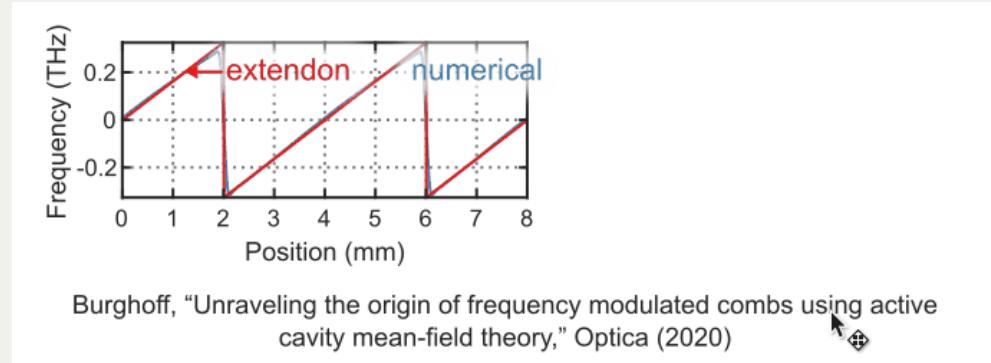
- Whilst it may be useful to replace Powerpoint, paint, publisher or bioreendor to draw our utorialisation in science more likely focuses on figure compiling.
- Panel arrangements in R e.g. ggarrange, cowplot. often compromise fine controls
- Alternative approach is output panels in SVG or PNG and arrange in inkscape

# CLASS ACTIVITY 2 : 15 MIN

- Open Algae\_Layout\_start
- Resize the images to 40 mm apart form the 100x magnification
- Add a square 30\*30 mm and clip to cut crop images to squares of 30x30
- Using align and distribute to arrange the images in a grid with 5px gaps
- Add text labels aligning them with the middle of the images with 5mm spacing
- Group the object and export as a png



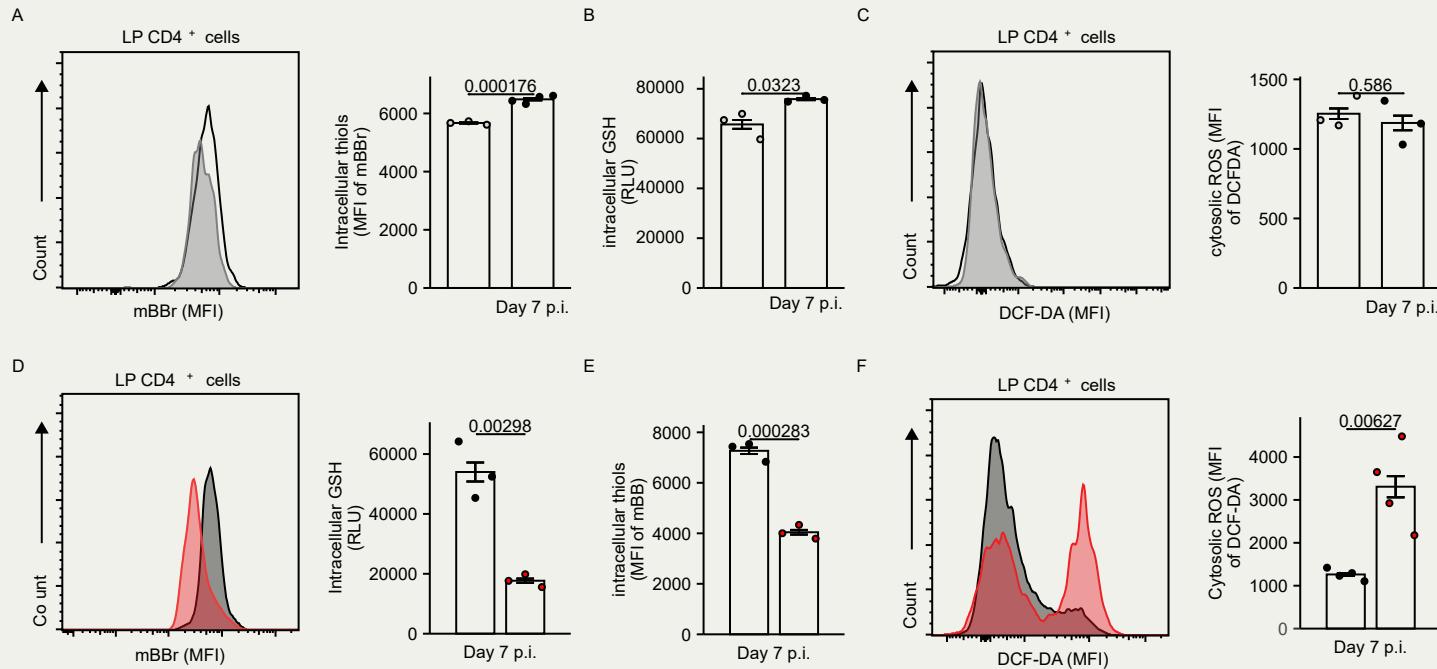
# SCIENTIFIC INKSCAPE



The core extensions are:

# CLASS ACTIVITY 3 : 15 MIN

- Open Inkscape\_extensions\_example\_start.
- run scale plots on D to make it 1/2 as wide and 1/3 as tall
- run flattener and homogeniser to fix all text to 7 pt
- Set all fill and stroke to 0.8 pt
- use gridlines and the alignment tool align all plots to a grid matching plot areas



# ASSIGNMENT

## DP-SMB--NextImmune-2--Data-Science-Meetings-(Common-Data-Science-Tools)

### Assessment

Deadline: 31/07/2024

1  
1  
1

To obtain the 1.0 ECTS you must fulfill the criteria of this NextImmune-2--Data-Science-Meetings-(Common-Data-Science-Tools)-assessment.

Prepare an submit a public GitHub repository with the completed tasks. The link for the repository is sufficient assuming it has been made public.

Tasks are indicated with marks to a total of 100. A mark of 50% is required to pass. In addition, a mark of 33% is needed for each task individually to pass. Upon preparation the repository link should be sent to: Joseph.longworth@lih.lu, Oliver.hunewald@lih.lu and carole.weis@lih.lu (in cc). The required repository template will be provided by webex.

Please note that you will also need to have attended at least 66% (4 out of 6) of the course sessions to be able to receive the ECTS credits.

1

.....Page Break.....

### Task-1:(20-marks)

- 1.→ Manage the assignment within a GitHub repository committing completed activities for Task-2,3 and 4.
- 2.→ Fork the template repository to your own GitHub account.
- 3.→ Ensure the repository is set as public for the submission.
  - a.→ Repositories should have at least 3 commit with clear comments.
  - b.→ Repositories should have at least 2 branches.
  - c.→ A sensible ReadMe should be included.

1

### Task-2:(40-marks)

- 1.→ For the completion of the task and further instructions open the \*.ipynb in a local python environment or remote such as google colab.
- 2.→ Complete the provided python notebook using the data also provided.

1

### Task-3:(20-marks)

- 1.→ Prepare a shiny web application using your own data.
  - a.→ Applications should have at least 3 inputs to control the presentation of the data.
  - b.→ Marks will be awarded for improved styling.

1

### Task-4:(20-marks)

Within the repository, there is a folder Inkscape. A figure is provided with some panels to be added.

- 1.→ Add the panels not yet included in the main figure.
- 2.→ Ensure panel E is arranged into a grid with aligned labels.
- 3.→ Reorder panels using (advancing by 1 letter those panels subsequent to the inserted panel).
- 4.→ Insert as a penultimate panel a graphic produced by the shiny application.
- 5.→ Insert as a final panel the heatmap graphic produced by the python notebook.
- 6.→ Align graphics.
- 7.→ Set all stroke widths to 1.00 px.
- 8.→ Utilizing the Scientific extension run flattener and homogenizer to fix text abnormalities whilst setting the text to 8pt.
- 9.→ Export the prepared figure as a pdf and png.
- 10.→ Processed files should be pushed back to the git repository.

# THE END

