Stats in the Wild

Activity 4

Graph Craft

Data moves

Grouping (using, creating or highlighting subsets)	**Filtering** (showing/ hiding subsets)	**Ordering** (sorting into an order)	**Summarising** (computing or calculating to describe a characteristic of a dataset)	
Linking (identifying corresponding case(s) in one representation and another representation)	**Inspecting** (hovering, clicking on or locating an object to gain information)	**Expanding datasets** (adding data, merging or joining datasets)	**Creating new variables** (e.g. rates/ proportions from existing data)	

Data forms

Choosing or creating a representation for a purpose

Finding and using relationships or patterns

Adapted from Hudson, R. A., Mojica, G. F., Lee, H. S., & Casey, S. (2024) *Data Moves as a Focusing Lens for Learning to Teach with CODAP.* Computers in the Schools, 1–26. https://doi.org/10.1080/07380569.2024.2411705

Overview

approx. 2-3 hours in total

1. **Explore** local or global issues that matter to the students
2. **Collect or find** data
3. **Research** types of infographic
4. **Create** your own infographic
5. **Submit** to the Graph Craft competition!

You will need

Video notes: bit.ly/StatsWild4

- 3 x example infographics
- **Good data** guidelines
- Internet access
- Art materials

Why do this activity?

Encouraging students to create their own statistical diagrams according to local or global issues that are of interest supports their development as **ethical and caring statisticians**, as well as helping them feel engaged, motivated and having agency over their lessons.

Selecting, representing, arguing and communicating with data are important components of **statistical literacy** which help prepare students to become data literate citizens.

Possible approach

1 **Explore** local or global issues that matter to the students

Students should spend some time researching, reading and thinking about local or global issues that matter to them. You could start with a focus on an **issue that you have identified**, to show them the type of thing they might like to do.

For example:

- the decline of a particular wildlife or plant in the local area
- the gender pay gap in a particular business, organisation or industry
- access to public transport locally, including how much it costs, the routes it takes, and who gets a discount

You can also show them the three example infographics.

Encourage students to have in mind **two or three possibilities** at this stage, as which one they choose for their final infographic will depend on what data they can collect or find.

2 **Collect or find** data

If you have a little more time, you might like to encourage students to **collect data** (for example by asking people through a survey, on social media, in the street, or questioning students or teachers at your school). If not, they will need to **find a dataset**. If you would like to offer more structured support, you could offer students some datasets you already know to be of good quality. Encourage students to use the **good data guidelines**.

3 **Research** types of infographic

Students can now spend some time – either collectively as a class, or individually - **looking at different graphs, charts, diagrams and infographics**

Visit https://informationisbeautiful.net or https://coolinfographics.com for lots of really inspiring examples!

It may be that you let them choose whether to create a **digital** infographic or a **hand-drawn** one, or whether you would like to be more structured.

Support students in considering the types of data they have and what **messages they would like to send**, and how the type of infographic, as well as any text like titles, axis labels, descriptions, captions, or keys might **help to tell the story**.

4 **Create** your own infographic

Make sure students have articulated what the **purpose** is for their infographic.

For example:

- to raise awareness of dramatic the decline of a particular wildlife or plant in the local area
- to help people see that the gender pay gap in a particular business, organisation or industry is getting better over time
- to show how expensive it is for a student to access local buses

As students create their infographics, encourage them to create a draft version first, and get **feedback** from others on improving it.

5 **Submit** to the Graph Craft competition!

Students can visit https://forms.gle/63a7ku7toGTU6Wyi9 or scan the QR code to **submit their infographic** (along with their name, email address, and age group).

If hand-drawn, students will need to **take good-quality photos** of their work.

Data will only be held until the end of the competition period and will not be used for any other purpose than administering the competition.

The closing date is **10th October 2025**. Students will be notified if they have won a prize by 20th October 2025.

Example classroom dialogue

Wow, it is so unfair how much tax there is on tampons and pads. I wonder how much it costs per year on average?

I wonder if I can make a diagram showing Scottish tax rates compared to tax rates in another country?

I want to do a 3D pie chart, but I think it might make the proportions look wrong...

Can I draw a scatter plot for this data?

I am going to colour this part red so it stands out as the part I want people to notice...

Do you think people know how much the price of fish and chips has gone up in the last five years?

References and further reading

Bargagliotti, A., Franklin, C. A., Arnold, P., Gould, R., Johnson, S., Perez, L., & Spangler, D. A. (2020). *Pre-K-12 guidelines for assessment and instruction in statistics education II (GAISE II).* American Statistical Association and National Council of Teachers of Mathematics. https://www.amstat.org/asa/education/Guidelines-for-Assessment-and-Instruction-in-Statistics-Education-Reports.aspx

D'Ignazio, C., & Klein, L. F. (2020). *Data Feminism.* MIT Press. https://data-feminism.mitpress.mit.edu/

McCandles, D. (2012). *Information is Beautiful.* Harper Collins. https://www.google.co.uk/books/edition/_/GAJXMAEACAAJ?hl=en