

Queen Mary
University of London

MTH6110

Communicating Mathematics & Employability

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Plan for Today

1. Warmup
2. Updates & Feedback
3. Assignment 3
4. Guest Speaker

Warmup

List 3-4 “Big Questions” related to this module

Some good and not-so-good examples

Why is school compulsory? Are we alone in the universe? Who needs experts? How do you help students find their passion? What if we had a 4-day school week? What is the purpose of school? If you could host a dinner party with 5 people (dead or alive), who would you invite? (How) should educators engage with racial equality and social justice in the STEM classroom? Why learn to read academic papers? ...

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Updates & Feedback

- Mathematics Presentations
Personalised comments + overall impressions
- What is/isn't working well in the module?
Do you revise the slides?
Do you like the "Friday Movies"?
- Placements
Are you sorted? Any DBS/HR issues?
Do not worry if you can only fit 6-7 visits in this year!
Complete a **Reflective Learning Log** for each session



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Assignment 3 – Research Article Summary

Write a 750-word summary of the Maths Education Research Article you have been assigned

- Seek peer feedback on **at least one draft** before the submission deadline
- Reflect on our past Feedback and Guidelines
 - CV/Maths Presentation Feedback
 - Assessment Guide & Marking Criteria

Assignment 3 – Research Article Summary

Basic Structure of Research Article

- Abstract (or Executive Summary)
- Introduction – “Claim Gap”
- Context – literature review, background, past studies
- Method – method, experiment, interviews, data collection
- Analysis – results, discussion
- Conclusion – sometimes part of discussion
- References, Citations, Notes – Harvard, APA, etc.

Don't forget to...

- Examine your essay alongside the writing guide and feedback received before submitting
- Fix anything obvious (e.g., missing name, ID, title, weird fonts, jagged edges, etc.)
- Start doing some project management in your groups after submission
 - Set timeline, divide tasks, meet/check in with each other, do a dry run, seek peer feedback on slides, backup plan?
 - PRESENTATIONS in Week 12!

At Home: why learn to read papers?

- Think about this question carefully
- How can you answer this positively for your intended profession? **Could you include something in your PDP?**
- Find an online resource on how to read a research paper in your discipline. See, for example

<https://towardsdatascience.com/guide-to-reading-academic-research-papers-c69c21619de6>



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Sonia Lassami, Careers Consultant



Activity – Analysis of Data

- **As a group (6-8 min)** – Examine the graph at your table and summarize the primary features exhibited by the data.

Are assumptions being made?

Any limitations to your conclusions?

Mathematical details vs. big picture?



- **Present your findings (1-3 min)**

We have never seen this graph before!

Pitching to experts or non-experts (or both)?

- Why are we doing this exercise?
- How is this related to anything else in the module?

(Hint: Weekly Skills Checklist)

Activity – Analysis of Data

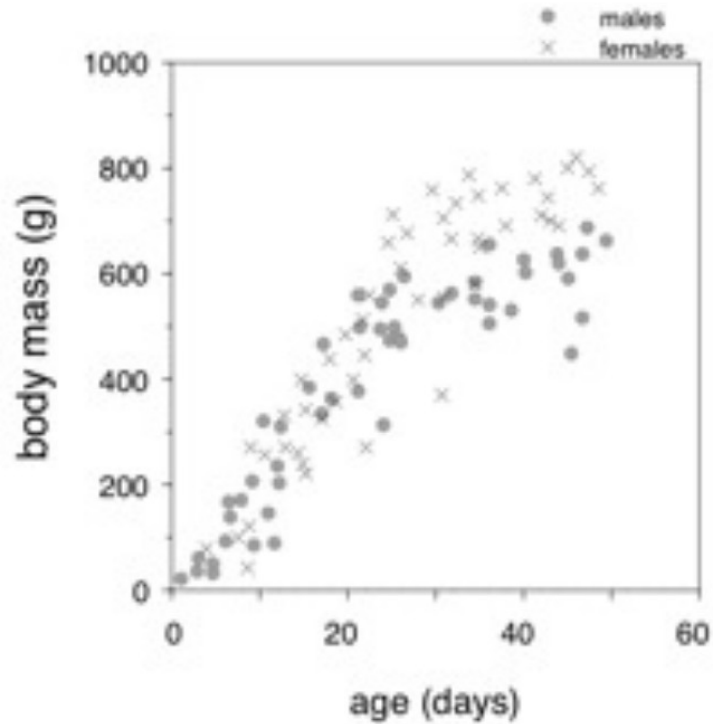


Figure 1. Growth of Harris's hawk nestlings in the shrubland habitat.

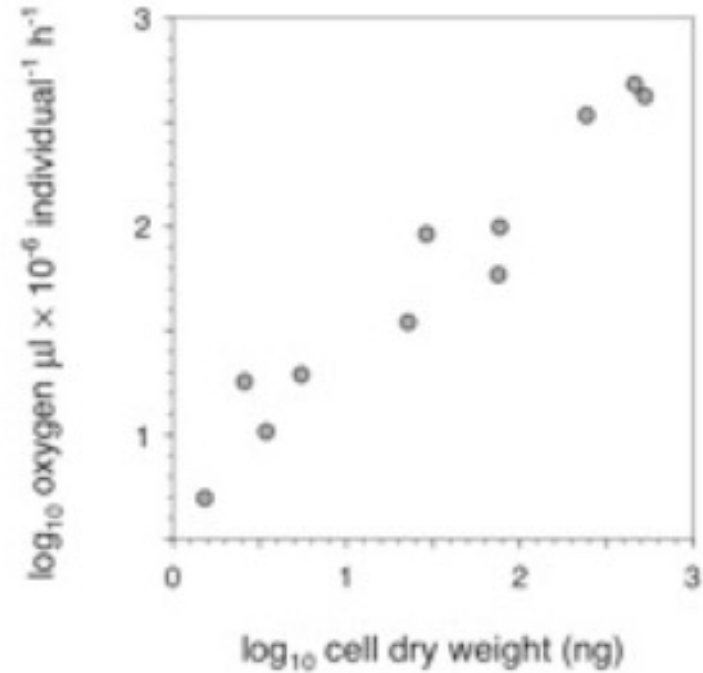


Figure 1. The relationship between cell dry weight and oxygen uptake, at 20°C, for eleven species of protist.

Activity – Analysis of Data

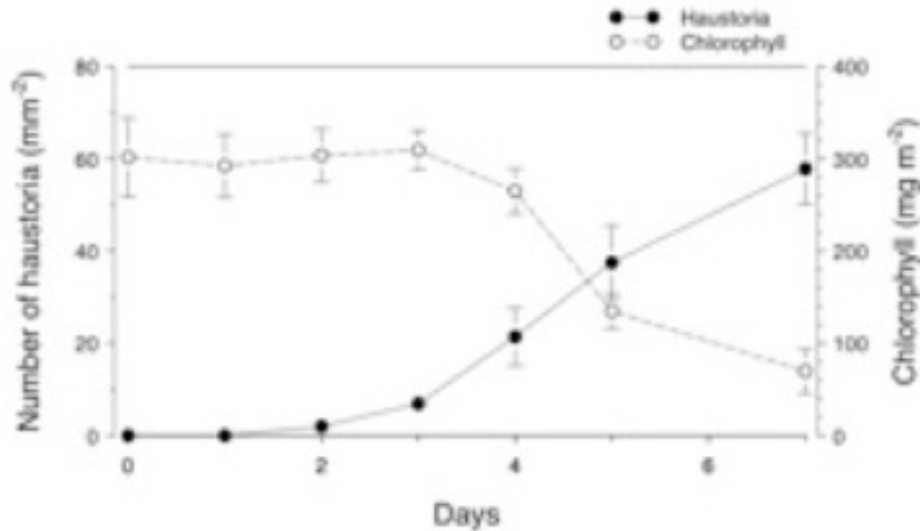


Figure 1. Change in chlorophyll concentration and density of haustoria in barley leaves following inoculation with powdery mildew.

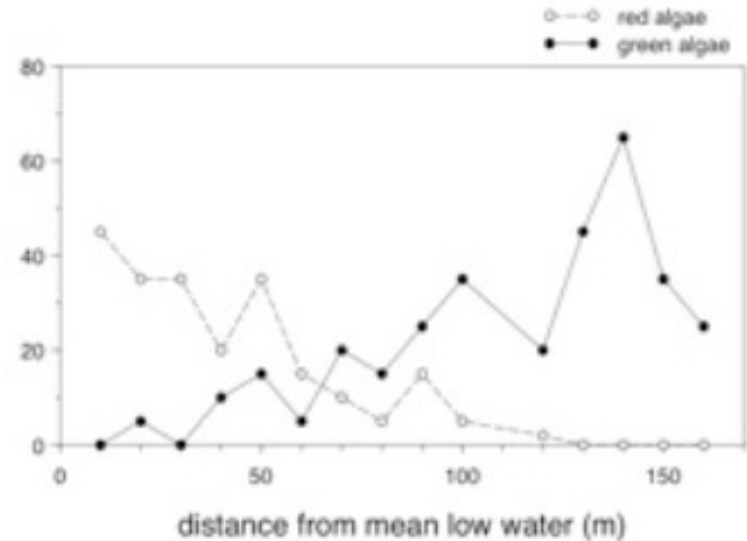


Figure 1. Percentage cover of green seaweeds (mainly *Enteromorpha* and *Ulva*) and red seaweeds (mainly *Chondrus* species) in 1 m² quadrats in pools along a transect from mean low water to mean high water.

Activity – Analysis of Data

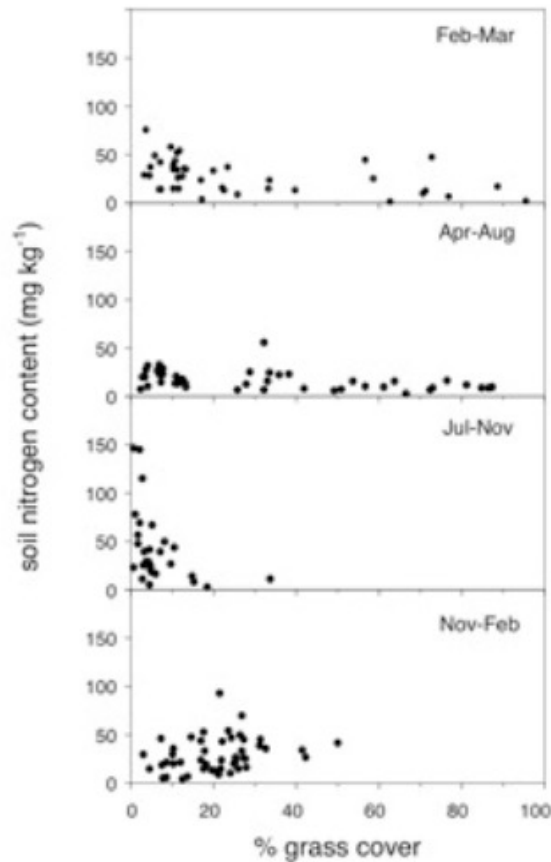


Figure 1. The relationships between soil nitrogen content and grass cover for pastures used for rearing pigs at different times of year.

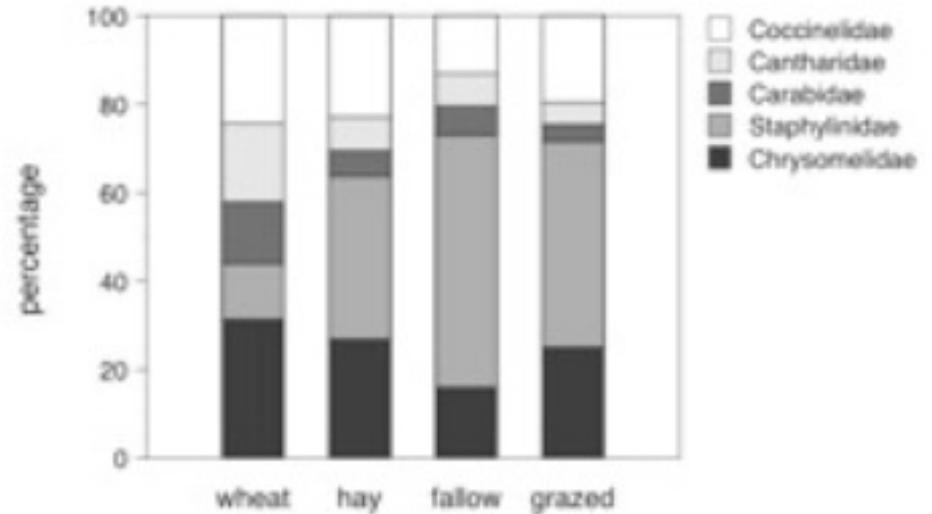


Figure 1. Percentage composition by family of all beetles caught in ten minute vegetation searches at five randomly chosen locations in each crop type.

Activity – Analysis of Data

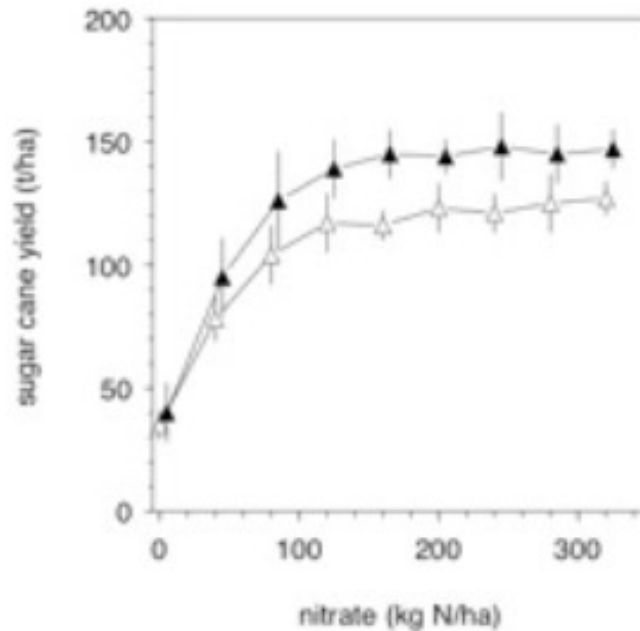
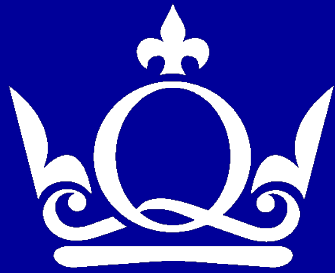


Figure 1. Sugar cane yield in response to nitrate input, for two different irrigation treatments. Open symbols: 'dry', closed symbols: 'wet' (see Methods for irrigation schedules). Each data point is the mean of yields from three experimental plots, and the symbols at each nitrate level have been slightly displaced laterally for clarity. Error bars are 1SE.

Activity – Analysis of Data

Recall (research literature) Objectives

- finding relevant resources
- citing resources in your own work
- basic structure of a research article
- how to approach content
- interpretation/application of conclusions



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Questions?

Thank you for your participation!

