MANCHESTER 1824
The University of Manchester

Designing Sustainability at Scale: A Collaborative Model for Interdisciplinary Learning

Michelle Feng, Annabel Robson & Amélie Mons

UCIL
University College for Interdisciplinary Learning

Today’s discussion

- Who we (UCIL) are
- The journey of tailoring a sustainability course for a new student audience
  - Who? What? Why? How?
  - Collaborative aspects
- Key features of the resulting course
- Looking forward: from a pilot course to a scalable framework

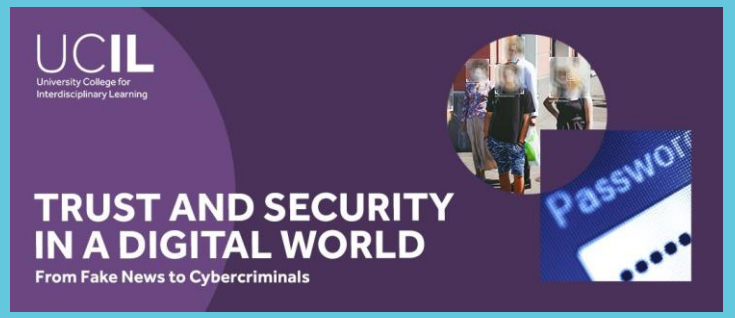
UCIL
University College for Interdisciplinary Learning

UCIL

University College for Interdisciplinary Learning

- Interdisciplinary, credit-bearing units
- Variety of topics
- Available to students across the University of Manchester
- Functions as a bridge across disciplines
- Creates opportunities for collaboration

UCIL portfolio



Unit being repurposed specifically for students in the School of Biological Sciences (SBS)

UCIL
University College for Interdisciplinary Learning

CREATING A SUSTAINABLE WORLD

21st Century Challenges and the Sustainable Development Goals

Repurposing an interdisciplinary unit for a new audience

Aim

Creation of a bite-sized course on Sustainability for all 1st year SBS students

How?

Adapting the established UCIL unit, ***Creating a Sustainable World*** (CaSW), to the disciplinary context of biological sciences

Why?

New QAA subject benchmarks require all disciplines to integrate **Education for Sustainable Development**.

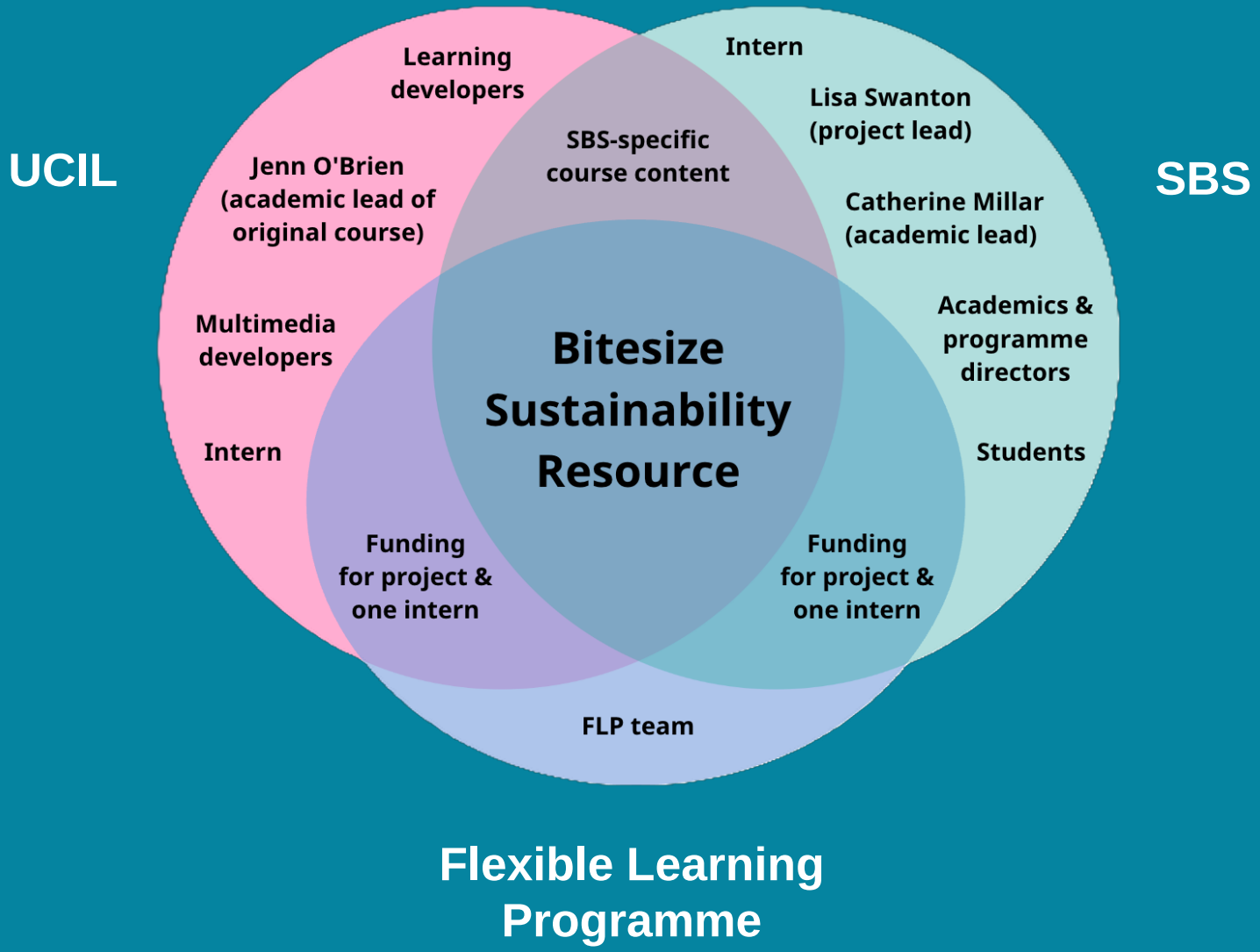
Who?

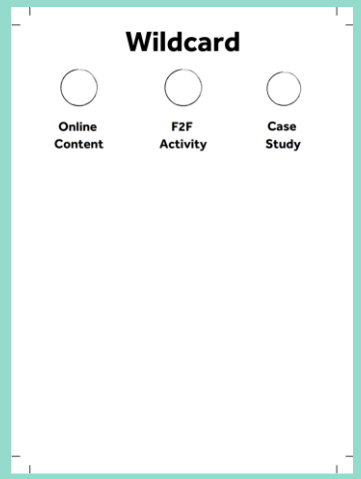
A collaboration between **UCIL, SBS academics** and **SBS students**.

The result: a bite-sized sustainability course

- Online course
- Introduces the 'what' and 'why' of sustainability and sustainable development
- Embedded within the first-year SBS tutorial unit
- Supports summative sustainability poster assignment
- Three chapters (3-4 hours total)

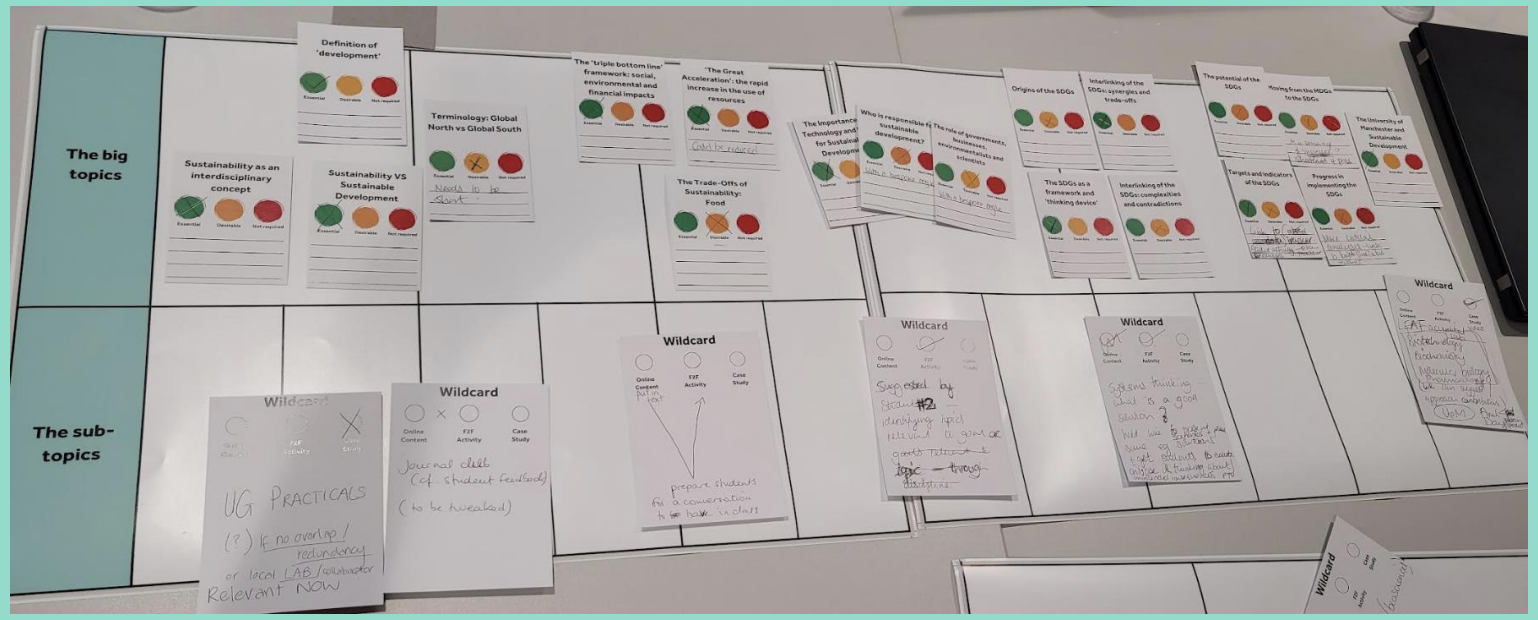
The process: design by team approach





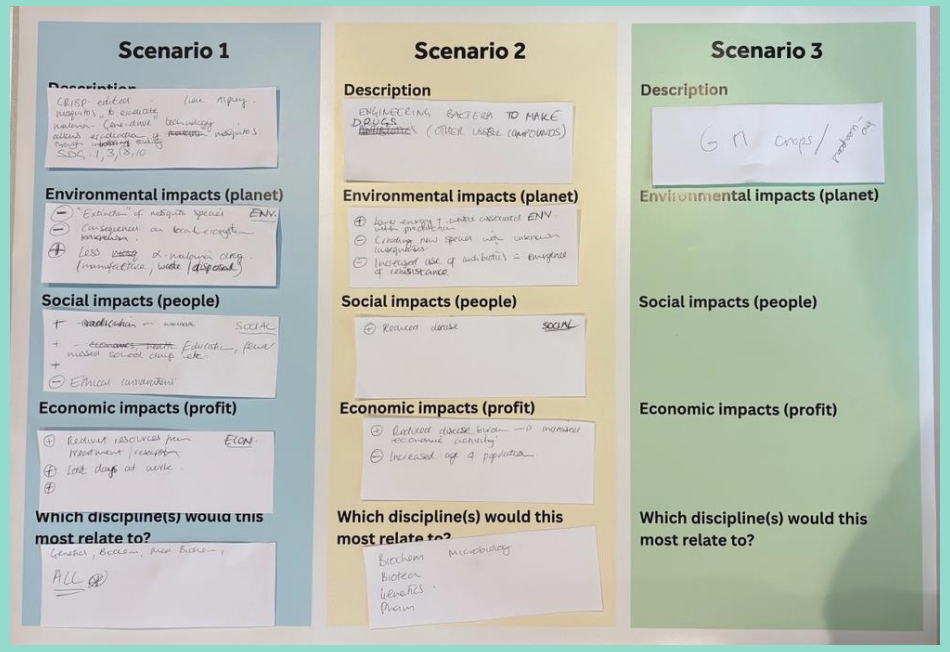
Initial workshop

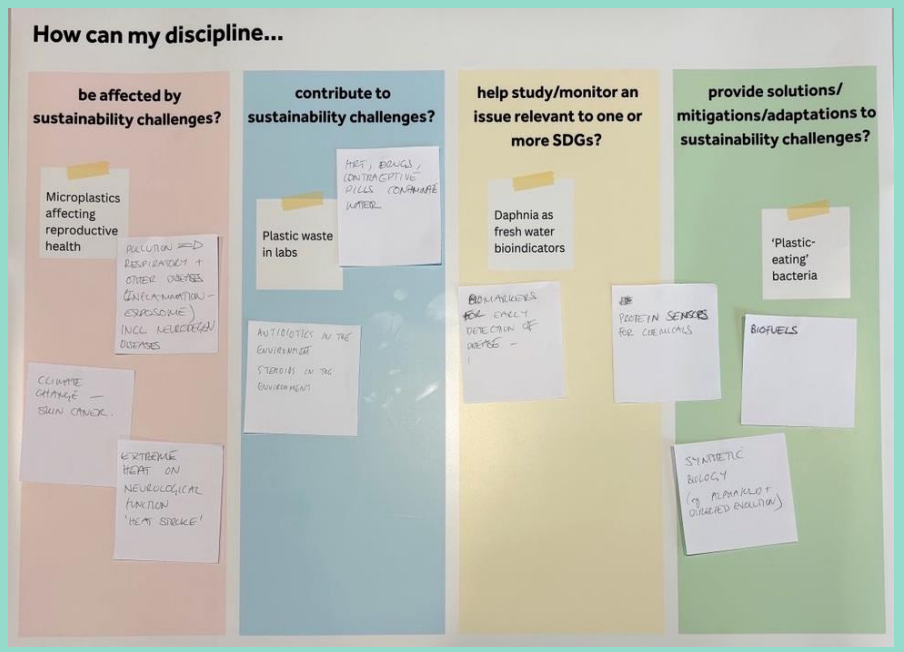
What to keep, remove, add, improve

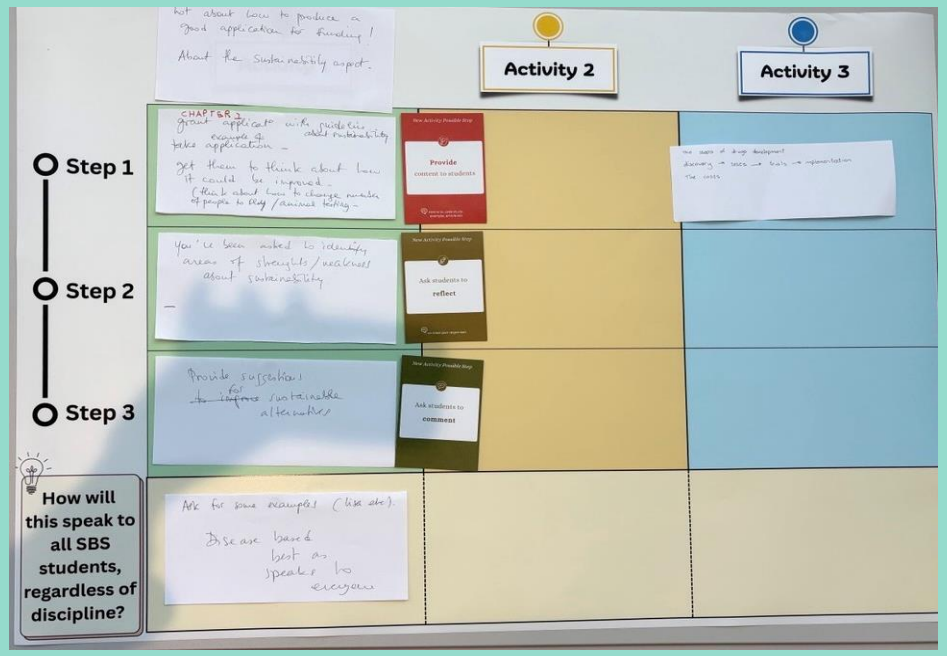


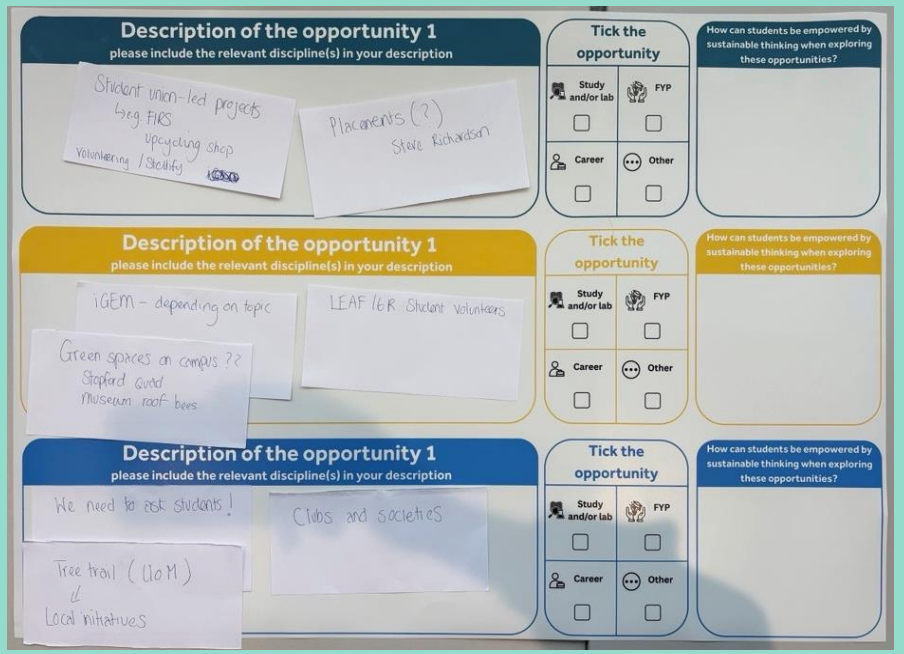
Second workshop

Reviewing and designing online learning activities suited to the needs of SBS students.







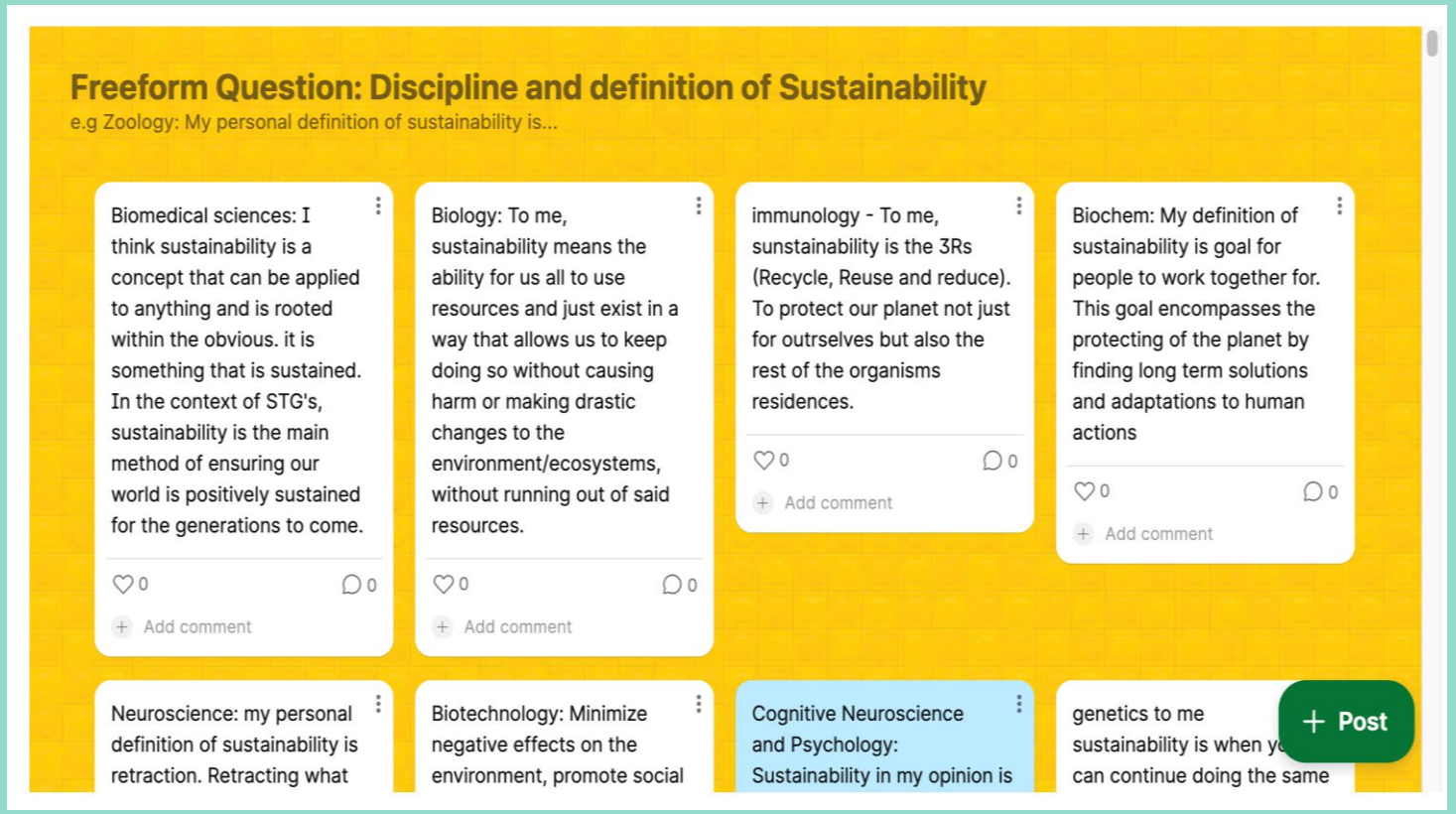


Key principles of development

- Interdisciplinarity
- Interactivity
- Student focused

Key principles of development

- **Interdisciplinarity**
- **Interactivity**
- **Student focused**



Presenting diverse, and at times contrasting, perspectives.

Key principles of development

- Interdisciplinarity
- **Interactivity**
- Student focused

Integrating a wide range of online, activity-based learning experiences.

Key principles of development

- Interdisciplinarity
- Interactivity
- **Student focused**

Student Feedback

1. Which elements of core modules 1 and 2 from CaSW should be included in the bitesize unit?

"It is important to include 'Introduction: Understanding Sustainable Development'. When doing the full CaSW unit this was a very helpful background in sustainability as someone who comes from a bioscience background where this is not taught much."

"Most of 'The Sustainability challenge facing humanity in the 21st Century' should be included but with less emphasis on COVID-19. This section would have benefited by introducing a wider range of current sustainability challenges rather than having a large focus on COVID-19. It does not accurately reflect the breadth of sustainability challenges we face currently by focusing on COVID-19."

"All of 'Origins and core principles of sustainable development' should be included as this was important in providing historical background"

"Content from 'SDG17: Partnerships for Sustainability and the SDGs' and 'The University of Manchester and the SDGs' should be greatly reduced in size. Though these topics are important, I found myself wanting to know more about sustainability issues and current solutions/work within bioscience/biotechnology and thought the full CaSW unit as a whole was lacking such"

"Conclusion is always good to get the key points across"

Drawing on student feedback and a learner-centred design approach, with a clear and coherent narrative.

Final product

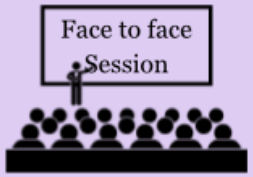
A collaborative model

Chapter 1: Introduction to sustainability

- Introduction
  - Academic lead welcomes students to this course
- Sustainability as an interdisciplinary concept
  - Freeform question: personal definitions of sustainability
- From sustainability to sustainable development
- Socio-economic contexts of sustainable development
  - Drag-and-drop: understanding the triple-bottom line within your discipline (scenario-based activity)
- 'The Great Acceleration': the rapid increase in the use of resources
- The trade-offs of sustainability
- The trade-offs of sustainability in your discipline
  - Academics discuss trade-offs within home disciplines

Chapter 2: The SDGs

- Introduction
  - Redesign of existing interatives
- The SDGs as a framework and 'thinking device'
- Targets and indicators
- The interlinking of the SDGs: synergies and trade-offs / complexities and contradictions
- Sustainability and your discipline
  - Flashcards: different perspectives on how your discipline relates to sustainability



Chapter 3: Who can drive/create change

- Who is responsible for sustainable development
- The partnership between governments, businesses, environmentalists, and scientists
- The importance of technology and data for sustainable development
- The University of Manchester and sustainable development
  - Academics explain why sustainability matters for UoM
- What can you do?
  - Examples in disciplinary curriculum that relate to sustainability / sustainable practices
  - Academics discuss opportunities in home School for students to get involved
- Conclusion
  - Academic lead concludes the course

Evaluation

First rolled out September 2025 (750+ students, 14 disciplines)

Students' feedback

Improved understanding in:

- Sustainable development as a whole
- How sustainable development relates to their discipline
- How to practice sustainability during their degree

Next steps

A reusable framework to be shared with other schools for further collaboration.

Conclusion

1. Existing sustainability resources can be meaningfully adapted for **new student contexts.**

2. **Collaborative design** enables more relevant and engaging interdisciplinary learning.

3. A successful pilot that has paved the way for **further interdisciplinary teaching and learning experiences** across the University

Chapter 1

MANCHESTER 1824
The University of Manchester

UCIL
University College for Interdisciplinary Learning

Thank you for listening!
Any questions?

We'd love to hear from others with similar experiences

Annabel.robson@manchester.ac.uk
Michelle.feng@manchester.ac.uk