



Because maths matters!

Welcome to the MEI conference 2026

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Quote from Curriculum and Assessment Review (p.40)

“Preparing learners for a changing world

The climate crisis is already impacting our physical landscape and many connected aspects of our lives. Given the significance of climate change for our society and the planet, it is crucial that young people benefit from an understanding of the climate crisis’s causes, consequences and possible solutions and that they are empowered with the necessary knowledge and skills to thrive in tomorrow’s industries and tackle the serious challenges facing our planet.”

Environmental contexts in recent Core Maths exams:

Board	2026	2025	2024
Edexcel	Plastic pollution (PR) Weather (PR)		Bees (PR) Single use plastic bags
OCR	Tidal Turbines (PR)	Carbon Dioxide capture, trees Carbon dioxide emissions Climate change questionnaire Ash dieback Forest percentage per country	Vegetarians and vegans in USA (PR) Electricity consumption
AQA		Wind turbines (PR) Desalination	Household waste (PR) Electricity use in households

Core Maths exam question

- 4 Trees capture carbon dioxide (CO_2) by photosynthesis. The amount of CO_2 captured or emitted is measured in tonnes.

- (a) Fig. 4.1 shows the **cumulative** CO_2 captured in tonnes to 2 decimal places as a willow tree ages.

Fig. 4.1

Tree age	CO_2 (tonnes)	Tree age	CO_2 (tonnes)	Tree age	CO_2 (tonnes)	Tree age	CO_2 (tonnes)	Tree age	CO_2 (tonnes)
0	0.00	10	0.05	20	0.19	30	0.44	40	0.81
1	0.00	11	0.06	21	0.21	31	0.47	41	0.85
2	0.00	12	0.07	22	0.23	32	0.50	42	0.89
3	0.01	13	0.08	23	0.25	33	0.54	43	0.94
4	0.01	14	0.10	24	0.28	34	0.57	44	0.99
5	0.02	15	0.11	25	0.30	35	0.61	45	1.04
6	0.02	16	0.12	26	0.33	36	0.64	46	1.09
7	0.03	17	0.14	27	0.35	37	0.68	47	1.14
8	0.03	18	0.16	28	0.38	38	0.72	48	1.19
9	0.04	19	0.17	29	0.41	39	0.76	49	1.25



in collaboration with:

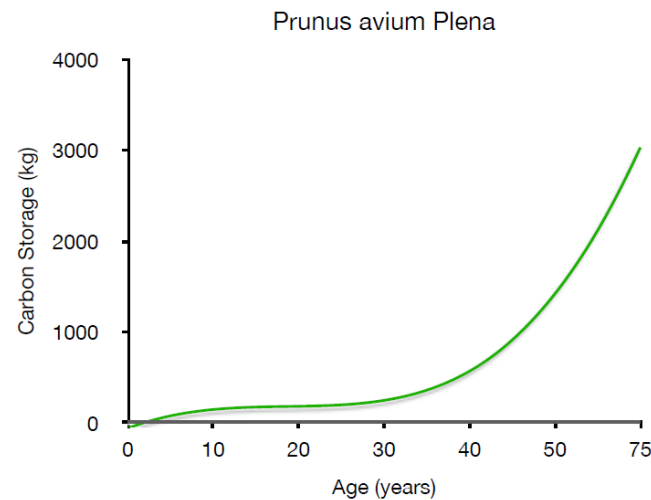
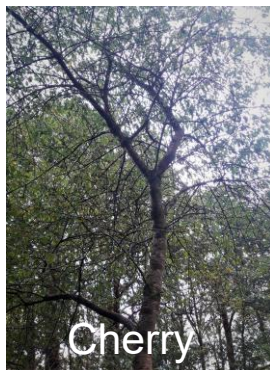
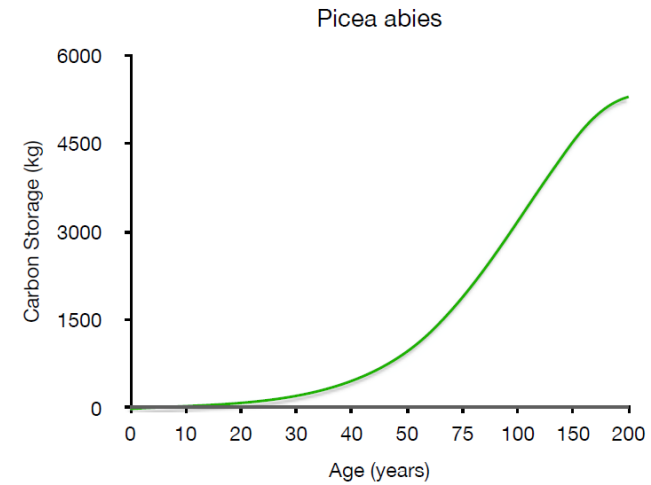
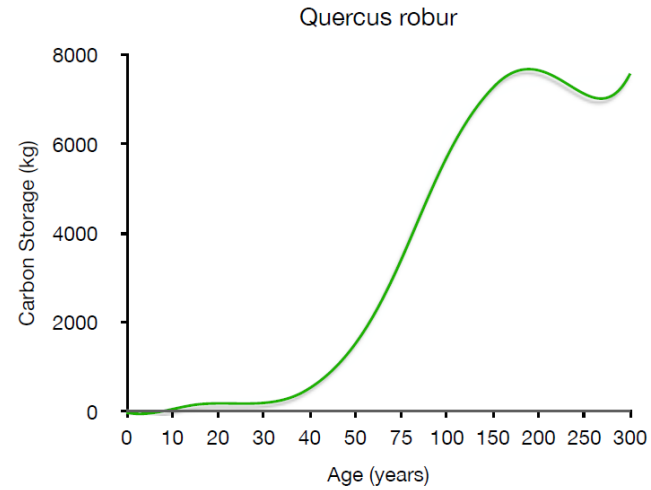
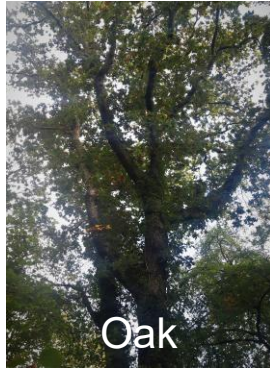


Trees for Net Zero

Level 3 Core Maths



Royal Meteorological Society



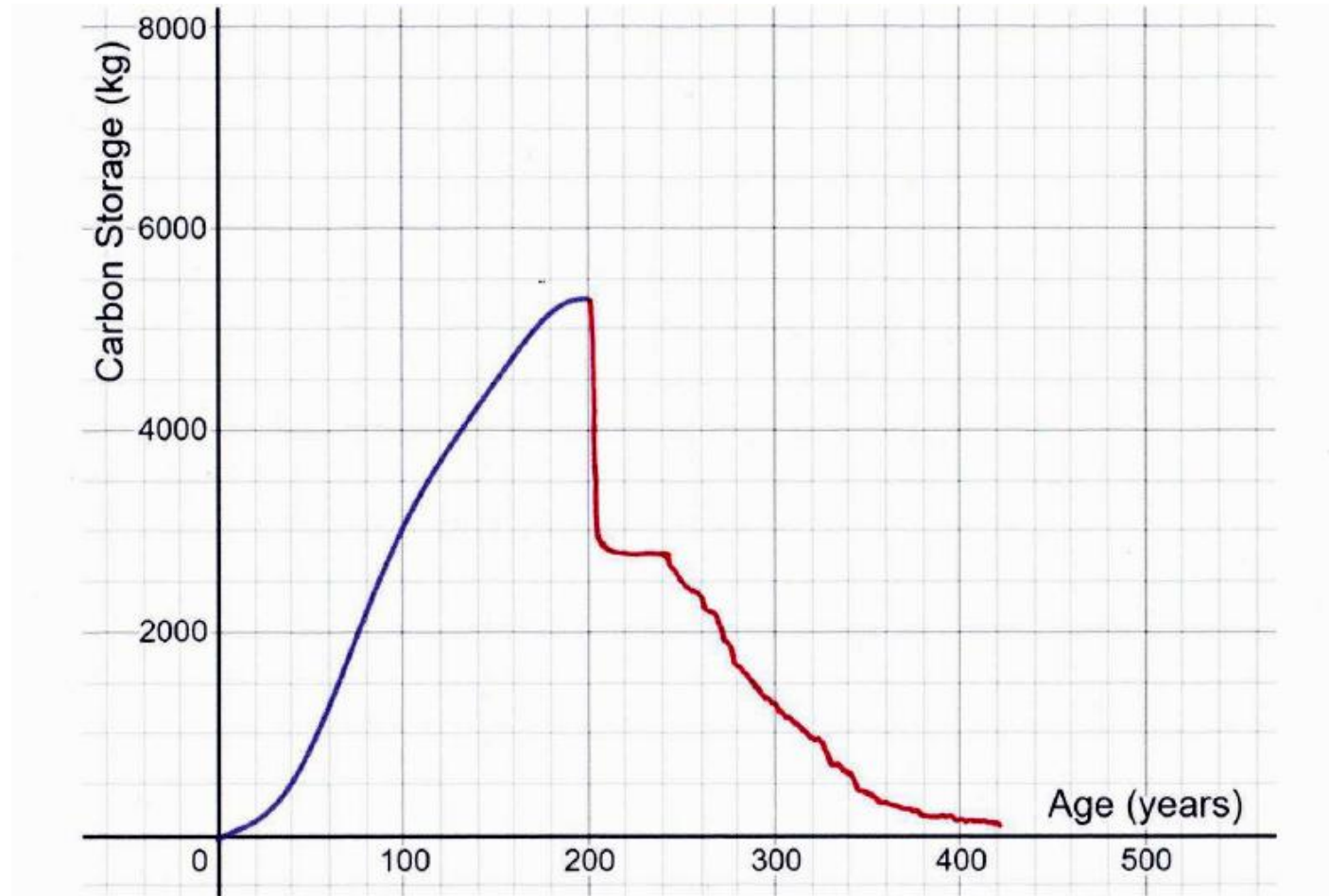
The Great Divide

What kinds of trees should we be planting?

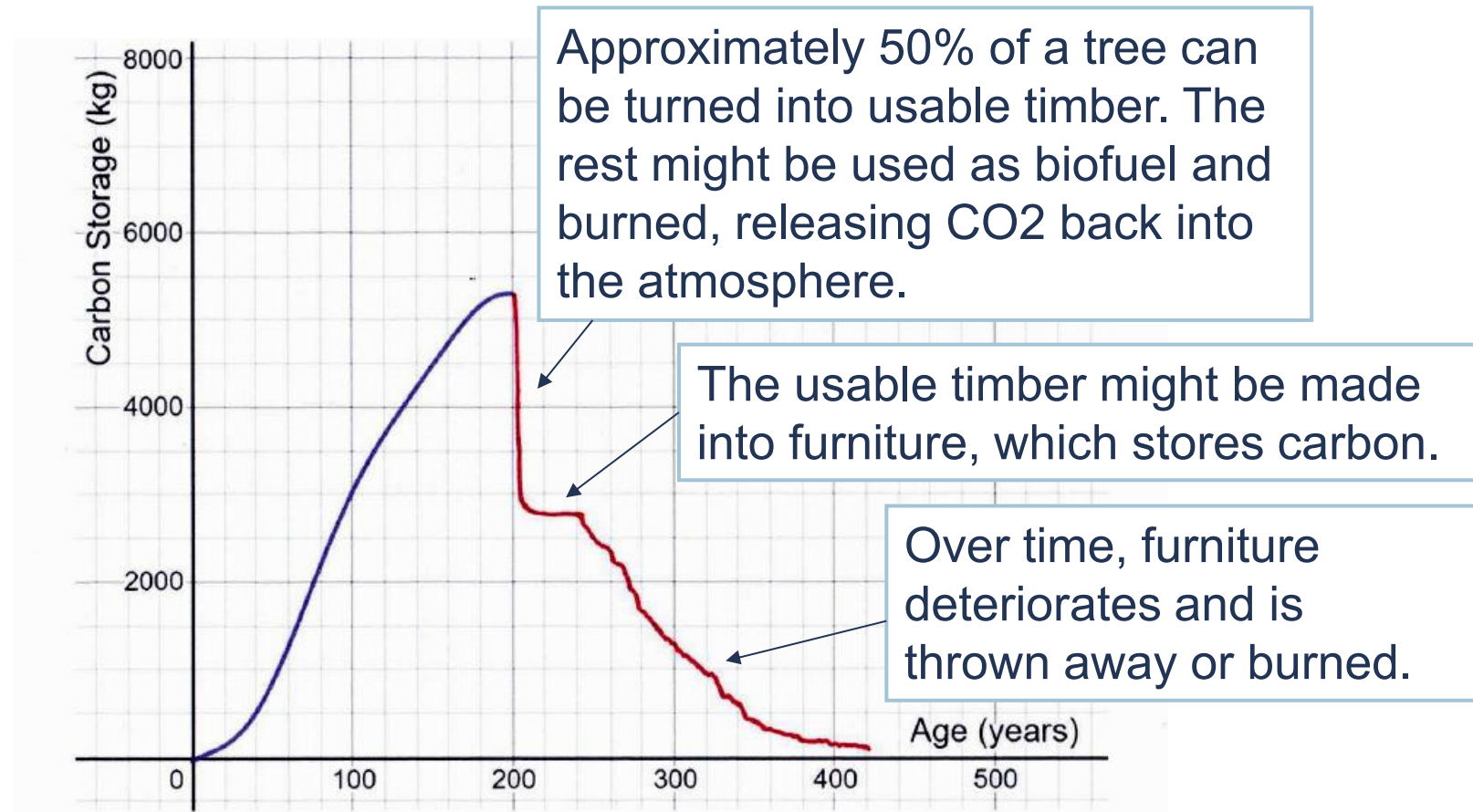
Stand where best represents your view.



What happened to the carbon sequestered by this tree?



What happened to the carbon sequestered by this tree?



The Great Divide

What kinds of trees should we be planting?

Stand where best represents your view.



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The climate crisis is already impacting our physical landscape and many connected aspects of our lives. Given the significance of climate change for our society and the planet, it is crucial that young people benefit from an understanding of the climate crisis’s causes, consequences and possible solutions and that they are empowered with the necessary knowledge and skills to thrive in tomorrow’s industries and tackle the serious challenges facing our planet.”

How have these questions supported these intentions AND has it required useful mathematical thinking as well?

Is there a tension between contextual understanding and the assessment of mathematical processes?

What do you think were intended mathematical concept(s) that were being assessed in these activities?

Paper about the design and impact of STEM enrichment activity on sustainability that emphasised maths

The RME (Research in Mathematics Education) award for best paper in 2025 has been won by:

Hui-Chuan Li (2025) STEM education and sustainability: what role can mathematics education play in the era of climate change?, Research in Mathematics Education, 27:2, 291-313, DOI: 10.1080/14794802.2025.2499813

[Full article: STEM education and sustainability: what role can mathematics education play in the er...](#)

The paper describes the design and initial indicators of impact of a STEM enrichment project in Scotland that took pains to emphasise the maths.

Claims about STEM education

- Despite a global emphasis on sustainability and STEM education, the role of the 'M in STEM' is undervalued (maths is only seen as a 'tool' to do the science) and there is evidence of a disconnect between mathematics and sustainability (the paper claims this is because the aspects of maths most applicable to sustainability (e.g. approximation, statistics, probability) are least represented in curricular and assessments.
- The climate crisis has increased the emphasis on the discussion of ethical issues and critical thinking skills within STEM education

Claims about the impact of the programme on students' perceptions of maths:

- Students could see how maths fitted within both STEM and sustainability. They found it quite surprising: "I was really surprised that climate change and maths are together in one activity. I'm definitely not a maths person and not a chemistry person, but even though, I enjoyed all the activities." (p. 301)
- Students questioned their previous beliefs that maths is always definitive and saw the importance of quantitative reasoning to make an informed decision
- Students were more likely to say that maths was enjoyable and/or rewarding after the programme

"The findings from this study highlight the role of mathematics in STEM education and sustainability initiatives, emphasising its important contribution to understanding complex global challenges. By transcending conventional disciplinary boundaries, the programme offered students a holistic perspective on sustainability issues, with mathematics acting as a key facilitator in understanding the context and identifying solutions."

Paper about the design and impact of STEM enrichment activity on sustainability that emphasised maths

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RMetS, MEI and RGS questionnaire

Climate Data in 16–18 Education



Big Earth data project



RMetS&MEI resources





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