Inspire Sustainability

Engineering a better future

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Inspire Sustainability is an outreach and public engagement programme organised by UWE Bristol’s School of Engineering. The network brings together science outreach providers in the West:

- STEM and Climate Ambassadors
- Industry
- WECA Careers Hub
- We the Curious
- Aerospace Bristol
- SS Great Britain

[https://curiosityconnections.net/](https://curiosityconnections.net/)
To achieve a zero carbon global economy, everything we make, transport, and power will need to be completely re-imagined and re-engineered.

Councils in the West of England have set a target for net zero by 2030. There is a green jobs boom underway, and young people need to be involved.
Inspire Sustainability

Encouraging diversity and inclusivity, DETI Inspire engages children in primary and secondary education across the West of England, with a focus on disadvantaged areas.

Using curriculum-linked engineering outreach and careers support, we are connecting children with real-life, diverse engineering role models to widen participation and aspirations for STEM careers and green jobs.
We Make Our Future

We Make Our Future is a new interactive, educational & entertaining science show which celebrates the ingenuity of human engineering, addresses current issues around climate change and introduces digital engineering as a relevant and attainable aspiration for all young people. This is a presenter-led experience delivered inside Explorer Dome's inflatable planetarium.

Designed for KS2 and KS3
DETI
Inspire
Engineering a better future
Engagements 2020-2022

10,569 children directly engaged
106,872 children indirectly engaged

1,473 audience feedback responses
452 Teachers and schools
456 Engineers engaged

UWE Bristol
University of the West of England
Sustainability solutions

How might we reach net zero by 2030?

We ask students to think like an engineer, discussing potential solutions to the Climate and Ecological Emergency. The lesson plans tackle three pathways to net zero, looking at:

- Energy
- Waste
- Transport

Students tackle the issues in curriculum time, with the resulting Action Plans guiding their Eco Committees to implement the ideas in their school and community.
Energy: Our generation will make the difference!

How many times have you heard people talk about the rising cost of energy?

To reach net-zero by 2030, we will need to be using only low-carbon electricity. One of the solutions is through local, community-focused generation.

Our region is punching above its weight in progressing towards this, with the country’s largest offshore wind turbine currently being constructed in Aromouth by the Lawrence Weston community.

To reach our target we need to develop more energy initiatives to deliver solar and wind energy.

Your generation is, in every sense of the word, vitally important.

Get ready!

In the upcoming session, we will explore our energy systems and how we can work together to deliver the next sustainable energy projects while reducing the region’s carbon footprint.

We will explore how solutions are interconnected with reducing energy consumption and waste, promoting active travel, and ensuring a fair and inclusive transition to a smart energy system for all.

You will have the opportunity to engage in meaningful dialogue with people who have the power to turn ideas into reality and who will be designing the next generation of energy provision.

Energy 1 - Group sheet

Today in the UK, 9 out of 10 homes are heated via a gas boiler - they use a fossil fuel gas. Home heating accounts for 40% of our carbon emissions. But the rules are already changing in Bristol; all new homes will have a fossil fuel-free alternative heating by 2025. The next step will be updating old housing by retro-fitting and replacing our existing home heating with climate-friendly alternatives. We need skilled professionals in heating, retrofit, building, energy supply, ICT management, and more to tackle this whole-scale lifestyle change.

Why can’t we keep using gas boilers?

Read the quote here by Associate Professor Kusuma Chintanav, Cabot Institute and Department of Computer Science, University of Bristol.

Empathise with customers

Why do your friends or family have gas boilers in their homes, even if they know about climate change?

Why do you think house builders aren’t putting in climate-friendly technologies right now?

Define the challenge: How can we heat our homes without using fossil fuels by 2030?

Below are four experts that are suggesting three different solutions to this problem. Each group will take a different solution, read the expert quote (on the Quote sheet) and discuss the questions below.

Test

Each group will write their responses on their sheet, then describe the solution to the other groups.

Darren McClure and Anna Muir, Atkins

Ian Preston, Centre for Sustainable Energy

Denis Ferries, Friends of the Earth
<table>
<thead>
<tr>
<th>Teacher identified curriculum links</th>
<th>Relation to green jobs</th>
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| **Mathematics**                     | “Maths - calculations for making things green e.g. % CO2 produced by various transport methods, cost of planning various green strategies etc.”  
Statistics related to Green Jobs.” |
| **Science**                         | “The Science curriculum helps students understand the material world around them, but more importantly teaches them to be curious about the world around them and understand that they can help shape their world. Sustainability and the environment is made explicit in certain topics (e.g. CB9 ecosystems and material cycles, fuels, Earth and atmospheric Science) but I am sure it links to many other topics we teach at GCSE and KS3 level.” |
| **Geography**                       | “All of geography links to green jobs. For example, our theme throughout Y9 is all about being a global citizen. We look at a student’s place in the world and what part they have to play in making it truly sustainable. Throughout all of my lessons I explain about the impact we as humans have on the planet and how we can change the negative impacts.” |
| **Careers**                         | “I am always exploring different ways to include the green future jobs within my work. Sustainability within engineering has been our biggest success so far.” |
| **English**                         | “We explore poetry, literature and develop students' communication. I think if the planet is to go green, Science isn’t enough. We’ve seen through recent history how experts and Scientific advice is often ignored. The skills we teach in English can help people develop language mastery to help change people's minds (and the world!).” |
| **Physical Education**              | “Discussing the importance of recycling and keeping areas clean and safe when using tennis courts and indoor spaces. We discuss careers in sport and this could link to potential green jobs in the future - stadium designs, clothing, footwear etc.” |
| **French and Spanish**              | “Awareness of environmental issues in other countries e.g. nuclear in France. Ability to work with people from around the world to address environmental issues.” |
| **Religious Studies**              | “Topics on stewardship (looking after the planet/ human roles and responsibilities).” |
| **Art**                             | “We teach a topic about the Environment and cover environmental art and activist art (Climate Change).” |
| **Technology**                      | “In food we teach about moral issues and sustainability e.g. Food miles, sustained fishing etc.” |
**Student eco action**

• “The longer we leave it, the worse it will be. So it's like you may like ripping a plaster off. We've just gotta go and do it and get it done. And they've said 2030 because it's like a date... possible to do it by 2030 is feasible.” Bristol Brunel Student

• “We the Eco Club tell people this stuff all the time (turn of the lights, stop selling plastic)... and nothing happened. That's quite discouraging. Yeah, no one is listening.” Bristol Brunel Student

• “Ten boys put their hand up just holding, they said football... ‘even the football can help by cutting their shower time to 5 minutes’.. So like they need more things that people are interested in, like more football references.” Bristol Brunel Student

• “When you speak about like people like gaming and sports, there's large groups of people. But like, the biggest ones are just those people who spend all their time on Tik Tok. Yeah. So therefore, wouldn't that mean the easiest way to, like, get to them is to post something like social media and influencers.” Bristol Brunel Student
Green jobs

Students
- agriculture
- panel
- people
- change
- sustainability
- making
- vehicle
- managing
- tree
- picking
- water
- power

Teachers
- engineer
- gardener
- technician
- conservation
- carbon
- waste
- nature
- recycling
- solar
- renewable
- wind
- rubbish
- marine
- electric
- conservation
- scientist
- turbine
- specialist

Skills
- knowledge
- teamwork
- problem
- leadership
- friendly
- knowing
- understanding
- solving
- patience
- work
- people

Students
- green
- jobs
- energy
- farmers
- sustainable
- environment
- engineering
- science
- sustainability
- manager
- planner
- jobs
- energy
- analyst
- consultant
- project
- various
- business
- climate
- anything
- sustainable
- food
- industry
- sector
- research
- thinking
- journalist
- lecturer
- reporter
- researcher
- future
- summer
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