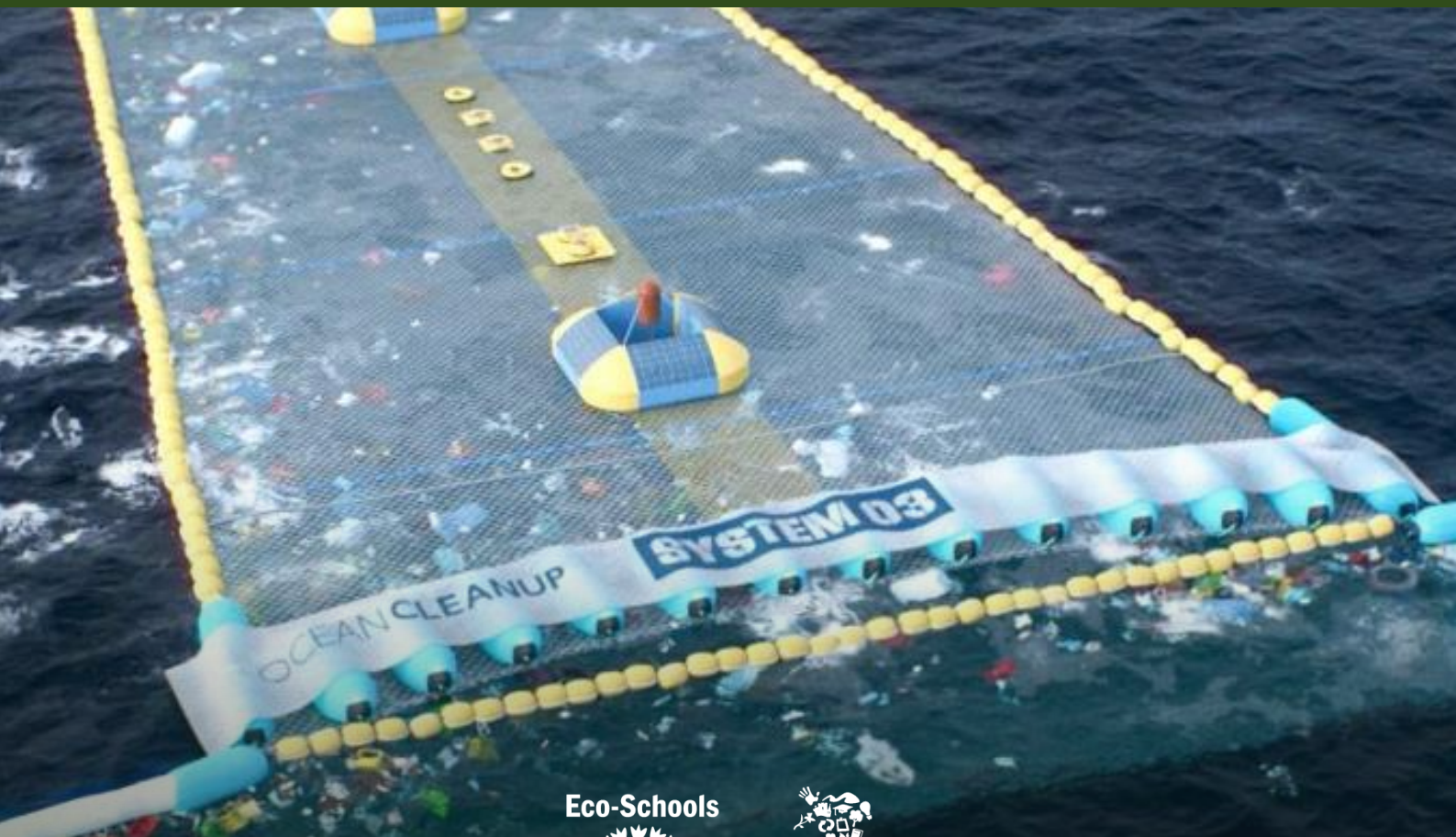


GALWAD

FUTURE INNOVATORS

USING INSPIRATION FROM YOUNG INVENTORS, THIS ACTIVITY CHALLENGES PUPILS TO BECOME THE PROBLEM SOLVERS OF THE FUTURE



Eco-Schools



Eco-Sgolion



cadwch keep
gymru'n wales
daclus tidy

Background information

Big world challenges require big thinking and big solutions. You don't need to be an adult to come up with the solutions, in fact quite often it is young people who have led the way to making a big change. We are probably all familiar with Greta Thunberg and how she has led the young people of our world to knowing that they have the power to stand up for what they believe is important and make a BIG difference.

This activity uses two young entrepreneurs called Boyan Slat and William Kamkwamba as inspiration.

When [Boyan Slat](#) was 16 he learnt about the huge issue of plastic in our oceans and the impact that it was having on wildlife. Boyan asked the question as to why no one was doing anything to try and clear it up and the answer given was that it was too big a problem and impossible to tackle.

Luckily Boyan was not so easily deterred and, at the age of 18, designed a system for using ocean currents to collect the floating plastic in the Great Pacific Garbage Patch. He then went on to found Ocean Cleanup, a non-profit organisation who have taken on the challenge of the largest clean-up in history.

Find out more about [Ocean Cleanup](#) and their innovative designs for cleaning the oceans and intercepting waste from the 1000 biggest polluting rivers in the world.



There are more than 5 trillion pieces of plastic floating in the ocean. This would stretch to the moon and back twice if piled on top of each other!



Eco-Schools helps support young people to take action on environmental issues. It currently runs in over 59,000 schools in 74 countries around the World!



The UK generates nearly 30% of its electricity from wind and solar power.

[William Kamkwamba](#), also known as The Boy Who Harnessed the Wind, came from a much different background in Malawi. When the droughts hit Malawi and his parents could no longer afford to send William to school and many of the villagers were struggling to survive, 14 year-old William didn't give in. He borrowed a book from the library that showed images of windmills. Using just the book and what he could find in a local scrap heap, William designed and built a wind turbine that was able to create electricity.

Initially the electricity was used to charge radio batteries and mobile phones, but he then went on to design a system to extract and pump water to irrigate the crops and support his village to survive through the drought.

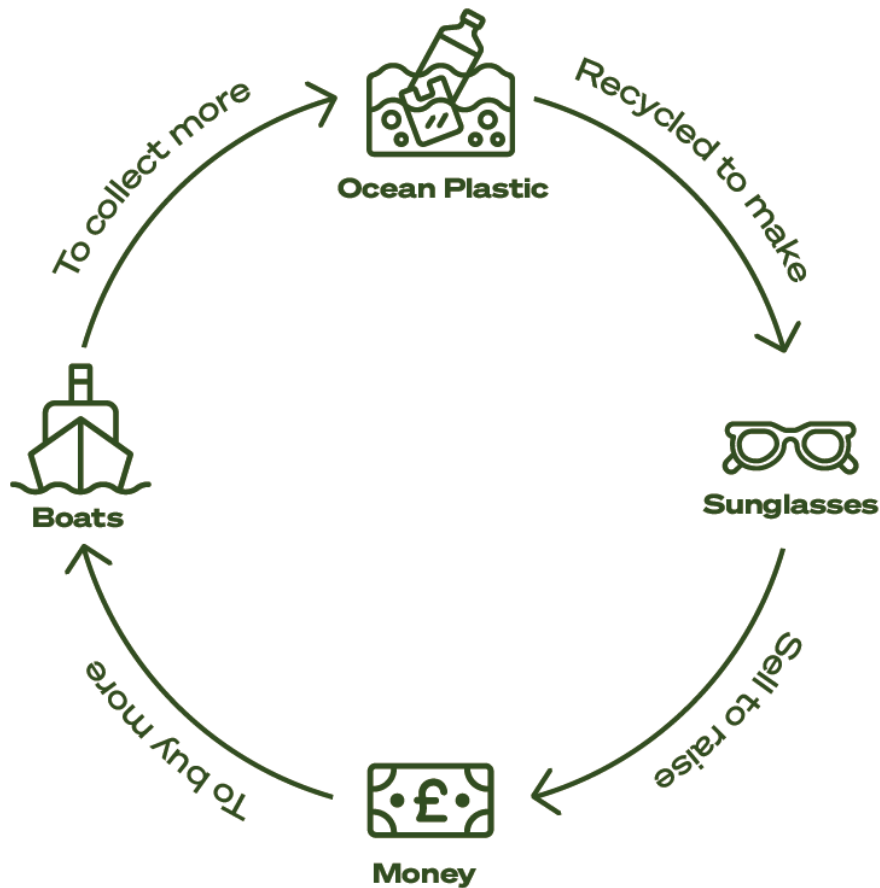
William's story was so inspirational that it has now been made into a film 'The Boy Who Harnessed the Wind'. You can watch here, [Moving Windmills: The William Kamkwamba story \(youtube.com\)](#).

Activity

Sometimes the best inventions come from young people who are great at thinking creatively and don't follow all the rules that society sometimes sets out. In 2052 we will hopefully be living in a world with very little ocean and river plastic and where everything is reused and reinvented into something new, not thrown away.

- Watch [this video \(youtube.com\)](#) to find out more about Boyan Slat's invention and how it is preventing rubbish from reaching the oceans.
- Now watch the story of William Kamkwamba, who faced a huge challenge of no school, no money, no rain and therefore no food. His invention changed the lives of the people in his community [Blowing in the Wind \(youtube.com\)](#)

Boyan mentions how it is vital to include the local community in the project and involve them in collecting the waste and turning it into something useful. For the ocean clean-up programme, the plastic waste was turned into sunglasses that were then sold to raise money to keep cleaning up the oceans!



William also places his community at the heart of his invention and realised that by solving a problem for his whole village, he could create a better place for his whole community to thrive.

The challenge

- Think about an environmental challenge in your 2022 community and see if you can create an invention that will help to solve the issue. You could think about:
 - How people travel around your community and to school
 - What happens when it rains heavily; does it currently flood?
 - Is litter an issue?
 - How is energy made? Can you do something using less or no energy?
 - How might you make reusing or recycling easier?

- When you have come up with an invention, think about how you might raise the money or resources (maybe you don't need money) to create it.

- Remember to share your designs with your class, school, community and with us. Perhaps yours will be the idea that solves a global challenge!

Reflection

We have looked at two young people who identified a problem and decided that they wanted to create a solution. Despite multiple setbacks, they both showed incredible determination in turning their vision into reality. Thinking about this, do you think that young people's ideas and voices are listened to enough in our current society?

Curriculum links

Purposes

- Ethical, informed citizens of Wales and the world.
- Enterprising, creative contributors

AOLEs and What Matters statements

Humanities

- Informed, self-aware citizens engage with the challenges and opportunities that face humanity and are able to take considered and ethical action.
- Our natural world is diverse and dynamic, influenced by processes and human action.

Science and Technology

- Design thinking and engineering offer technical and creative ways to meet society's needs and wants.
- Forces and energy provide a foundation for understanding our universe

Global Goals



Goal 7: Affordable & Clean Energy

Goal 14: Life below Water

Goal 12: Responsible Consumption & Production

Goal 11: Sustainable Cities & Communities



GALWAD



CREATIVITY IN THE UK



Cymru Greadigol
Creative Wales

GALWAD is part of UNBOXED: Creativity in the UK, co-commissioned with Creative Wales with funding from Welsh Government and UK Government

33-35 Heol yr Eglwys Gadeiriol, Caerdydd, CF11 9HB
33-35 Cathedral Road, Cardiff, CF11 9HB
029 2025 6767
keepwalestidy.cymru
info@keepwalestidy.cymru



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