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NUMBER 1 FOR STEM

primary stem LEARNING

Enriching STEM with Global Goals

Saving the world with STEM subjects

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STEM LEARNING

Enriching STEM with

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@PA_Schools

When starting to write this article, I thought "I know why I would embed Global Goals in STEM ... but wouldn't it be more powerful to ask teachers to share why they do it?"

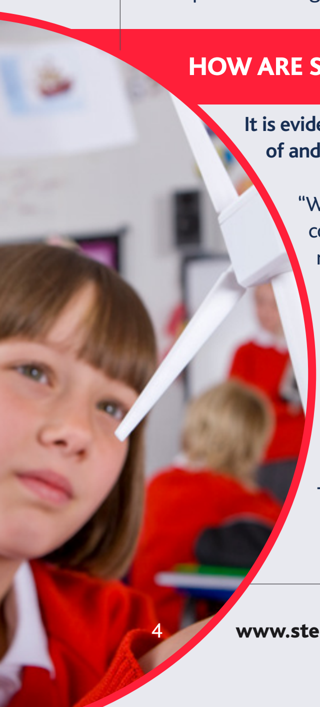
So, I sent out a tweet and had the best engagement ever! This in itself made me realise how strongly teachers feel about the Goals, and how keen they are to encourage others to make them a focal point for STEM teaching and learning.

WHAT ARE THE GLOBAL GOALS?

The Global Goals, or Sustainable Development Goals (SDGs) are 17 Goals identified by the United Nations as important in eradicating poverty throughout the world by 2030.

They include, for example, no hunger, and clean and renewable energy. Many countries, including the UK, have signed up to them. Practical Action, where we use technology to challenge poverty in developing countries, and many other organisations are committed to achieving them. We believe it is important for young people to understand the Global Goals and feel they can be a part of making them happen.

HOW ARE SCHOOLS EMBRACING THE GOALS AND WHY?



It is evident from feedback from teachers that schools are using the SDGs to raise awareness of and interest in global issues and provide a rich, real-life context to science learning.

"With a move towards contextualised learning nationally we are keen to embed the SDGs at the heart of our teaching and learning, particularly in science. We feel this will ensure our children realise that they can be active agents of change, both locally and globally."

- Nicky Bolton, Deputy Head at Heswall Primary School

"The SDGs make learning relevant, engaging and empowering so I link each topic in the science curriculum to the Goals.

The daily news on aspects of ecological collapse and climate breakdown can be overwhelming for young people. The SDGs can be used to reassure pupils that there is an international movement to mitigate some of these global issues."

- Dr Batchelder, Corbridge Middle School

The SDGs are being built into teacher training too:

"I have used the SDGs with my trainee teachers who are primary science specialists."

- Louise Hawxwell, primary science lecturer, Edge Hill University

"The SDGs have become integral to the development of our STEAM curriculum. This focus enables children to see the importance of STEAM in developing solutions to world problems."

- G Wilson, STEAM teacher, The Mead School

the Global Goals

WHAT SUPPORT IS AVAILABLE?

For a whole-school approach Oxfam's The SDGS: A Teacher's Guide is available at www.oxfam.org.uk/education in September.

Websites such as globalgoals.org, and the World's largest lesson are great. I personally love the Emma Watson YouTube video (www.youtube.com/watch?v=sTt5YW7Pagc) that highlights the role of science in reaching the SDGs.

Then there is us, Practical Action. Our popular, free, inquiry-based STEM Challenges are CREST accredited, and give pupils opportunities to develop their own solutions to global problems then see the ingenious solutions Practical Action has implemented.

Below are some examples of relatively small changes that have a big impact on improving the lives of poor people around the world.

- **Find more at practicalaction.org/stem**

FURTHER INFORMATION

The Global Goals
- **www.globalgoals.org**

STEM Challenges
- **www.practicalaction.org/STEM**

Oxfam's The SDGS A Teacher's Guide
- **www.oxfam.org.uk/education**

World's largest lesson
- **worldslargestlesson.globalgoals.org/project-everyone/**

Emma Watson YouTube video
- **www.youtube.com/watch?v=sTt5YW7Pagc**

The Practical Action resources are available in the STEM Learning eLibrary
- **www.stem.org.uk/cxde85**

TRY SOME OF THESE ACTIVITIES:

DITCH THE DIRT

Investigating access to water and how to clean water, this challenge is strongly connected to Goal 6. Pupils investigate access to water in Kenya and use their science skills to design and build a water filter.

STOP THE SPREAD

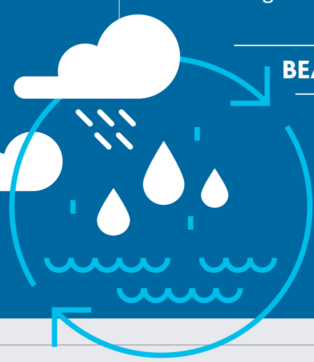
Supporting Goal 3, this challenge focuses on how infectious diseases spread and how to prevent them. The main challenge is building a hand-washing device.

SOLAR POWER CHALLENGE

Pupils build circuits using solar cells, then decide which electrical appliances should be used by a community in Zimbabwe with a limited supply.

Supporting Goals 2, 7 and 15 and covering electricity at key stages 2 and 3, maths skills are crucial in this challenge.

BEAT THE FLOOD



Pupils test material for absorbency and strength, then design and build a model of a flood-proof house. Models are tested by standing in water and squirting with a hosepipe!

PLASTICS CHALLENGE

Set in Nepal, activities include making bioplastics and investigating properties. The main challenge is designing and making products from waste plastic.

"The plastics challenge helped pupils understand the global impact of plastics and what they can do to reduce plastic waste, highlighting Goals 12 and 14. We plan to embed it, along with other Practical Action STEM Challenges, into the curriculum." Katie Hanson, science teacher, Culloden Academy