

STEM Competition Teacher's Guide

Competition Brief:

This STEM Competition has been developed to encourage pupils in Years 4, 5 and 6, to unleash their creativity by developing an idea that saves energy and/or reduces waste. Pupils will work in teams to conduct research into their idea and create a poster board to present to judges. You may want to run the competition with multiple year groups or you may choose to run it with specific year groups.

Stage 1: The Big Issue

Start by getting the students thinking about the 'Big Issues' around waste, energy, climate change and the environment.

Use the **Lesson 1 – THE BIG ISSUE** powerpoint and accompanying **Decompose Timeline** and **Energy Wordsearch** pupil activity sheet to get the children thinking about waste and energy issues.

Invite Career Volunteers - You can really bring this lesson to life by inviting career volunteers into your school to talk about their jobs. You can facilitate a Q&A with the volunteer or turn it into a challenge where the children have to guess what job they do by asking lots of questions.

Invite Parents – An ideal time to involve parents is to invite them to the 'Waste Fashion Show'. Once the children have created their waste fashion masterpieces, you could hold a fashion show in the hall and get the children to model their creations and 'present' each outfit by narrating their designs to the audience

Stage 2: Developing their Entry to the STEM Competition

Use the **Lesson 2 – STEM COMPETITION** powerpoint and accompanying **Pupil Design Worksheet** plus pupil information sheets on **Home Energy Facts** and **Top Tips for Students**

This is a team project whereby students will need to work together (suggested group sizes of 3/4) to develop an idea for saving energy or reducing waste at home, in school or in the local community.

The competition has been kept broad to allow students to use their imagination and creativity to identify an energy or waste issue and develop an innovative solution.

The teams will need to create a poster board and a 3D model/prototype to demonstrate their idea.

Each team's entry must include:

- A poster no more than A1 in size to demonstrate their idea
- A written document of no more than 300 words to explain and support the idea
- A model/prototype of their idea

Invite STEM Ambassadors – STEM Ambassadors are volunteers from a wide range of STEM related jobs and disciplines across the UK. They offer their time, enthusiasm and experiences to inspire young people to progress further in STEM subjects. The Ambassadors could support your lessons by providing guidance to the students while they develop their competition entries.

Invite Parents – You could organise an exhibition of the pupil's poster boards and prototypes and invite children from other classes to visit the exhibition. You could then open the exhibition up to parents. Each team can stand by their entry and explain their design to the parents and children as they walk around the exhibition. This is great practice for when the teams have to present to the panel of judges!

Stage 3: Selecting your Winners

Once each team has finished their poster board and prototype, they will need to present these to a panel of judges within your school. This panel can be made up of teachers and school staff, but we recommend you also involve parents, career volunteers, STEM Ambassadors, local businesspeople etc.

Judging Criteria

Entries should be judged based on the following criteria:

- Understanding of the problem they want to solve
- Originality
- Creativity
- Presentation
- Sustainability of their solution