



ROCHESTER BRIDGE TRUST

Exploring Engineering Challenge

There are different ways in which you can use this Challenge material, based on the circumstances in your location. It has been designed to be suitable for 8-11 year olds and could be delivered as:

- a whole day, with one class in a Primary School, in a classroom or hall;
- two half days, with one class in a Primary School, in a classroom or hall;
- four twilights, with one class in a Primary School, in a classroom or hall (a twilight would tend to be about an hour, however where possible, negotiate slightly more than an hour to allow for arrivals and packing away e.g. 15.15 – 16.30);
- alternatively, you could scale it up to work with many teams or scale it down for use at home or in a club.

The Resources explained are for a class of 30-32 pupils. We have included PowerPoints with notes for the pre tasks and 'The Challenge'. The notes on each slide explain what you would say and the points to draw out of the children through questioning and hands-on activities. This pack includes:

- the Guidance document;
- all the pre-tasks on PowerPoint (with notes);
- the pre-tasks on PowerPoint, broken down into two pre-tasks to enable them to be used for shorter twilight sessions. Within an hour, it should be possible to complete one of the pre-tasks, with sufficient time for the children to clear up and pack away after;
- 'The Challenge' on PowerPoint (with notes);
- an equipment list for the whole day, allowing you to print one list of everything you need;
- the testing base working drawing for making up the test rigs;
- 'The Challenge' guidance;
- a handout for testing materials pre-task.

- a sheet of the Rochester Bridge Trust crest for printing. This can be cut up into separate logos.

How to use this in your School:

Some schools will recognise the term STEM (Science, Technology Engineering and Maths) and be keen to have support to enrich their STEM learning. This is a STEM Learning Day and can form part of your enrichment days.

These resources are aimed at children in Key Stage 2 and especially sit within the year 5 Science Curriculum. You may also want to use it with Year 6 children, after their SATs have been completed.

National Curriculum Mapping:

This Challenge maps to the National Curriculum Programmes of Study as follows:

Design & Technology: the whole concept of the Exploring Engineering Challenge is design process in action. It encourages children to design something for someone for a specific purpose.

KS2 (8-11 year olds): Design, Make and Technical Knowledge Criteria.

Maths: KS2 (8-11 year olds): 'Number and Place Value', 'Addition and Subtraction', 'Measurement', 'Geometry – Properties of Shapes'.

Science: 'Living Things and their Habitats', 'Uses of Everyday Materials', 'Properties and Changes of Materials' and 'Forces'.

KS2 (7-11 year olds) – 'Living things and their Habitats', 'Properties and Changes of Materials' and 'Forces'.

Using the Resource in a Club or at Home:

Of course, this material could be used with a local community group/club, e.g., Guides and Scouts or home education groups or family. All you need to do is to adapt the amounts of materials you need.

And finally. Enjoy this! It's easy to get started, with just one child or class.

Enjoy!