



Teach Outside the Box: STEM

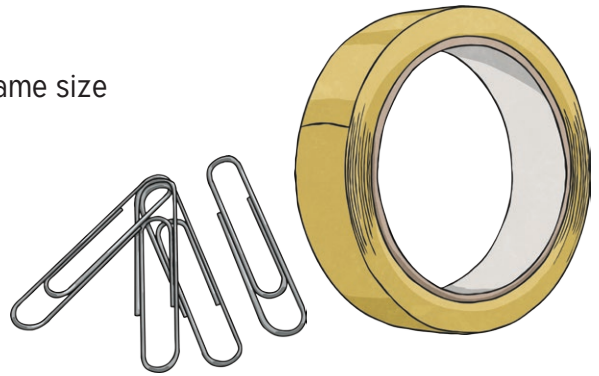
Building Bridges Engineering Challenge

Introduction

This activity challenges learners to build a load-bearing bridge. The task can be carried out independently, in pairs or in small groups. It can be timed and can involve some budgeting choices as a further activity option.

You will need:

- Newspaper - all editions should be the same size
- Paperclips
- Sticky tape
- Scissors
- Rulers
- Pencils



What to do:

Challenge each group to make a load-bearing bridge which will support a toy car being driven across it.

The bridge should be named.

The resources available are newspaper, paperclips and sticky tape. These will be allocated equally to each group. Scissors, rulers and pencils will be freely available but cannot be used as building materials.

The bridge must be free-standing and span a minimum of 50cm.

Extra Challenge Options:

The activity could be timed (30 minutes is an adequate length of time for this activity). The activity could have planning time allocated (15 minutes for example) and time for prototype resources to be made before the timed challenge begins.

Pupils could choose the resources they use by allocating a points value to each resource. (See attached project sheet.)

Support could be given before the task, or after the prototype stage, to discuss strengthening techniques (for example, rolling the paper, folding the paper, triangle shapes for support and strengthening design features of real-life bridges).

Ways to Support:

Some prepared construction resources may be made available to some groups. Group learners to support their needs.

Ways to Extend:

Challenge groups to construct a specific design of bridge: suspension, truss, arch, beam, etc.