

Day 1 – Understanding of task/researching bridges

Overview

This STEM challenge is about building a bridge.

Objective

Working by yourself or with someone at home, design and build a bridge that spans a gap of 50 cm (between two tables) and supports the weight of a moving toy car.

Duration

Approximately three 40 minute lessons

Supporting Students

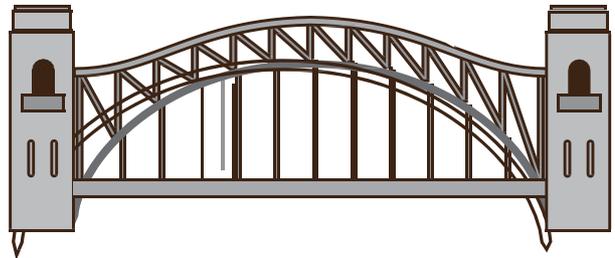
Students will be supported in their learning by allowing them to consult with a Jack or Tessa during the planning process.



Build a Bridge

— STEM Challenge —

The Scenario: Recently, the bridge which spans the river in your town was demolished. It was extremely old and was no longer safe for cars. The town must now build a new bridge to span the river.



The Task: Design and build a bridge that spans a gap of 50 cm (between two tables) and supports the weight of a moving toy car.

Materials: Brainstorm some common household materials which might be suitable for building your bridge (these need to be readily available in your house). Once you have decided upon the materials that are available for use, list these in the table below.

Building Materials	Adhesives
• e.g. cardboard	• e.g. masking tape
•	•
•	•
•	•
•	•

Conditions:

1. The bridge must be free standing. It cannot be attached to the tables.
2. The bridge may only be constructed using the materials from the agreed list.
3. The bridge must be completed within the timeframe set by the teacher.

Super Challenge:

Can your bridge support more than one toy car? Why not test the strength of your bridge to see how many toy cars it can support at the same time?

What we will do today:

1. Check your understanding of the task

Carefully read through the task, make sure you are aware of the conditions your bridge must adhere to.

2. Research different types of bridges.

There are 4 main types of bridges. Using your research skills I want you to find out about them and record your information, using the following slides as a template.

This information will help you decide on how to create your own bridge.



Research the Facts – Types of Bridges

There are four main types of bridges: beam, arch, suspension and cantilever. Look at some images of each type of bridge. Draw a labelled example of each. Record the features, the building materials used and a famous example for each bridge type.

Beam bridge

Beam bridge features:

Building materials:

Famous example:

Arch bridge

Arch bridge features:

Building materials:

Famous example:

Suspension bridge

Suspension bridge features:

Building materials:

Famous example:

Cantilever bridge

Cantilever bridge features:

Building materials:

Famous example:

My group and I have decided to build a bridge for this challenge.

