

## Project Brief

You work as an assistant technician in an engineering design office. The rising levels of water are causing some issues with the pedestrian crossing on a ford within a rural village near the coast. Several times the local community have been unable to cross the ford because of the high water levels.

You have been asked to explore the idea of designing a simple foot bridge that could be installed for the community to use. This will enable walkers to make use of the land along the tidal river for recreation. The supports for the bridge can be cable stay designs so a unique feature can be made of the bridge so people are attracted to use and walk over it.

You are required to produce a **portfolio of evidence** to accompany your design of the simple footbridge.

The portfolio should include:

- CAD and hand-drafted engineering drawings of your bridge using the given information in the project brief pack
- evidence of materials, tools and machinery testing - consider the cost and environment when choosing materials
- a production plan – including when will you build and what times of year will you avoid
- an evaluation of the project, making reference to your learner log where appropriate.

Using your **engineering drawings** and **production plan**, manufacture a scale model of your simple footbridge to an appropriate scale of choice, selecting and using the most appropriate materials, tools and techniques.

During the manufacturing process, you should:

- demonstrate that you are able to carry out manufacturing techniques
- evidence how you demonstrated safe and correct use of a variety of tools and/or machinery throughout the manufacturing process.

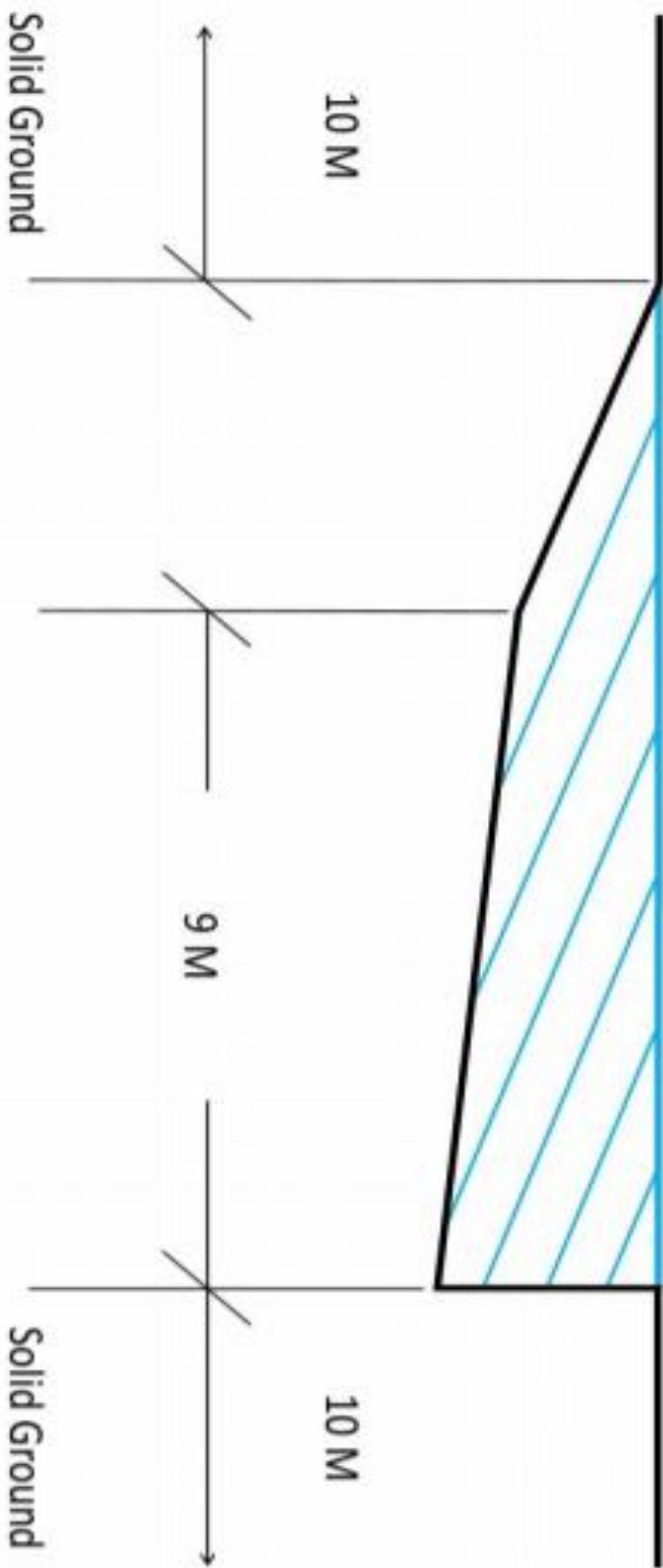
Due to resource constraints imposed by the client, you will initially produce the scale model using straws.

### Design Criteria

- your bridge needs to demonstrate good iconic design that people will want to cross
- the method of jointing you will have to use must be designed and applied by you
- the constructed scale footbridge model will be tested using the following method:
  - your completed bridge will be weighted accurately
  - a weight equal to 5 times the weight of the bridge will be supported at a midpoint.
- you will produce a short report evaluating your bridge and how it performed in testing.

**Background information for the project:**

**Existing river crossing profile for proposed bridge position**



The solid ground on each side of the river is gravel and can support a considerable load or foundation.

## **Learner log and project evaluation**

As you work through the project, you are **required** to keep a learner log to record your approach. You should include:

- how you prepared
- what resources you used
- how you managed your time.

You **must** use your completed learner log to carry out an evaluation of the project.

## **Evidence**

You are required to submit the following for assessment:

- your portfolio of evidence
- your model of the bridge
- your learner log, including your evaluation.

## **Types of evidence**

Below is a list of suggested types of evidence that you could include:

- written/word-processed documents
- presentations
- diagrams
- annotated evidence to include photographs, images and diagrams
- technical drawings
- video/audio evidence
- witness statements (as supporting evidence)
- learner observation records (as supporting evidence).

**During the project, you will need to refer to the 'Project Brief' to obtain information.**