

Name: _____

Date: _____



The Power Station needs a new road bridge! Consider these design criteria for your design and 100:1 scale model prototype. Draw and label your design before you start making your model.

Design Criteria

- The bridge must span a gap of at least 50cm
- It must have a clearance of at least 20cm beneath it
- It must have a deck which allows two toy cars to pass each other
- It must be strong and attractive

Equipment and Materials

- Scissors
- Glue
- Sticky tape
- Paper and card
- Paper straws
- String

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The Power Station needs a new road bridge, so that trucks and other vehicles can cross the river nearby. It must span a gap of 50m and allow boats up to 20m high to sail beneath it. It must also allow traffic to cross in both directions at the same time. Finally, it must be strong and attractive. Write the design criteria, then draw and label a design for your 100:1 scale model prototype.

Design Criteria

My Design

Name: _____

Date: _____



The Power Station needs a new road bridge, so that trucks and other vehicles can cross the river nearby. It must span a gap of 50m and allow boats up to 20m high to sail beneath it. It must also allow traffic to cross in both directions at the same time. It must be strong and attractive. Finally, because the river below is very busy with lots of boats using it, your design must not have any pillars in the gap! Write a design criteria, then draw and label a design for your 100:1 scale model prototype.

Design Criteria

My Design

Building Bridges

Challenge Cards

A farmer needs a bridge so his cattle can get over a ditch into the next field. It must be quite wide, so the cattle can cross quickly and as a herd. It must be built cheaply using natural materials that might be found on farm land.

Can you design an appropriate bridge with specific design criteria?



A new road bridge is needed to cross a valley. The valley is very wide. Residents say that the bridge must be very beautiful so that it does not ruin the views.

Can you design an appropriate bridge with specific design criteria?



A new railway bridge is needed to cross over a road. It does not need to be attractive, but it does need to be very strong and very flat to allow the heavy trains to cross easily.

Can you design an appropriate bridge with specific design criteria?



A new bridge is needed for cyclists and pedestrians to cross a motorway safely. The bridge must be high so lorries can pass under it, but there isn't enough room on either side for long, straight ramps going up to a high deck.

Can you design an appropriate bridge with specific design criteria?



The owner of a beautiful, old mansion needs a new bridge to go over the moat. It must have a flat, hard-wearing surface and be made of local stone so that it is in keeping with the design of the mansion.

Can you design an appropriate bridge with specific design criteria?



A new footbridge is needed to cross a stream. It will connect two footpaths used by lots of people of all ages, so it must be safe, easy to cross and have something for pedestrians to hold on to.

Can you design an appropriate bridge with specific design criteria?

