

How Can a Bridge Carry a Whole Train?

ENGINEERING & TECHNOLOGY

Get curious

Video/ Slide show

You will see a film about the construction of bridges.

Ask the students:

Why do people build bridges?

How do bridges differ from one another? Why do they differ?

What determines the structure of bridges?

What did the first people learn from Nature on how to build bridges?

Observing

The students study photos of bridges.



During the slide show tell them about the various structural elements of bridges.

Get going

Constructing

The students create models of bridges from paper.

Analyzing

Strength testing of paper constructions.

The students estimate the strength of the models they have built. Then the groups arrange next to each other all models, measure the strength and write down their results on their worksheets.

Ask the students:

Which bridge is the strongest?

Can a bridge carry a train?

What does a bridge's strength depend on?

Constructing

In groups the students build their bridges from materials gathered earlier and then perform strength tests on their models.

Students build any type of bridge they like - using materials gathered before class - which can support a set load. They then draw the bridge on a sheet of paper in the designated place and note how many railcars it was able to support.

After the students have finished the task ask them the following:

Which bridges did you choose to build models of?

Why did you choose such a construction?

Who could actually use them?

Get practicing

Observing

Look in your area for the bridge, check its structure and who uses it.

You can take some photos or do a sketch of the bridge and note down your observations.
