



Civil engineers make it happen – model making activity

An ICE do-at-home activity for ages 4-18

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Background

This activity helps young people understand that civil engineers are creative and use different materials to build structures. The aim is to build a model of an unusual civil engineering structure.

We've adapted this activity to work for different age groups – 4-10s (primary), 11-16s (secondary) and 16-18s (sixth form) – to be completed in the home environment with minimal materials.

What you'll need

Suggested resources – but feel free to use similar alternatives.

Cardboard tube from a kitchen roll or similar
1 A4 piece of paper
Small sellotape and scissors
2-3 A4 pieces of lightweight card
A biro pen
A pencil
Supermarket carrier bag
2-3 pipecleaners – suggest same colour in grey or black

The challenge: create something amazing!

Choose what you'd like to build a model of. The best way to research your chosen structure is by doing an internet search to get an image of it. Here are some suggestions:

- Hyperloop (future travel system that shoots pods through tunnels)
- Bridge – there are lots of different types to choose from such as suspension and cable-stayed
- Wind turbine – these have moving blades that capture 'green' wind energy
- Sports stadium – these can be lots of different shapes but the important thing is to have a central space for the sport to take place and lots of seats with good views of the action

1. Study the image of your chosen structure. What can you see? Are there parts made of different materials?
2. Give yourself a time limit to create your model and set a timer. 20 minutes is about right.
3. Get building!
4. Present your model to an interested audience. Tell them which parts you think are important and how you used the different materials to make it.

For 11-16 year olds

Before you make your 3D model draw a simple design on paper to plan which materials you're going to use.

For 16-18 year olds

Create your model to a scale of the original – for example 1:25 (25 times smaller than the original).

Tell us what you thought!

Email us at careers@ice.org.uk or write a comment or post on the ICE@schools Twitter.

More resources on civil engineering

Careers advice for becoming a civil engineer: [ice.org.uk/beacivilengineer](https://www.ice.org.uk/beacivilengineer)

Careers and activity resources on our website: [ice.org.uk/educationresources](https://www.ice.org.uk/educationresources)

Civil engineering project case studies: [ice.org.uk/what-is-civil-engineering/what-do-civil-engineers-do](https://www.ice.org.uk/what-is-civil-engineering/what-do-civil-engineers-do)

Civil engineer (people) case studies: [ice.org.uk/what-is-civil-engineering/who-are-civil-engineers](https://www.ice.org.uk/what-is-civil-engineering/who-are-civil-engineers)

Info about all types of engineering careers (not just civil): Tomorrow's Engineers
tomorrowsengineers.org.uk