



Super Structures Activity

ICE Scotland 2019

E: alison.ward@ice.org.uk W: ice.org.uk/wice

Activity Aim

The activity is intended for use as a drop-in activity at careers conventions. It shows how civil engineers have to balance forces during the construction of bridges and towers. It also teaches participants how good communication is vital to civil engineers working in teams.

Contents

There should be:-

- 1 x plastic storage box
- 32 x magnetic ball connectors
- 24 x long magnetic struts
- 54 x short magnetic struts
- 8 x curved magnetic struts

Running the activity

Start by explaining a little about what civil engineers do and your role. You can then choose the challenge – ask the participants to build a tower, bridge or other structure of your choice (geodesic dome?).

Discuss the importance of communication with the participants. They need to work together to make sure that they are balancing the forces on their structure. Explain that although civil engineers need to be technically competent, that's not enough on it's own as they also have to be really good communicators.

You may need to guide the participants and help them if necessary. Some design options are shown overleaf.

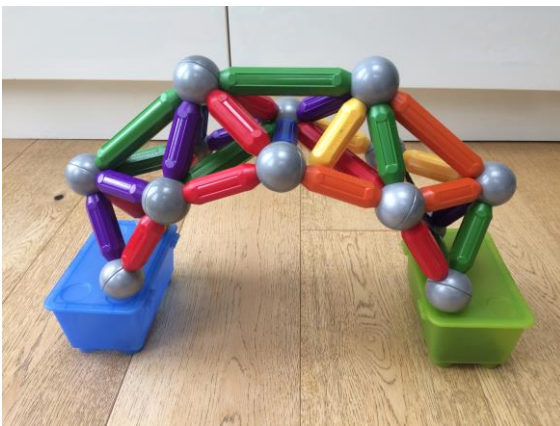
Design options



Tower



Truss bridge



Arch bridge



Both the lid and base of the box can be used for building on

You can discuss as much technical detail as you like (cross bracing, etc) but don't forget the bigger picture of why civil engineers build buildings, bridges, etc – it's all about solving problems to help people!

At the end of the session, please ensure that all the materials are returned to the storage box.