



ICE Scotland Bridge Building Challenge Facilitator instructions

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Bridge Building Challenge

Start by delivering the presentation on bridges and then split the pupils into small groups of around 4 or 5 per group. Challenge them to build a bridge using only the materials provided. The materials can be:-

- Paper – this takes a bit more time and fine motor control so is probably best suited to older children as they need to roll up the paper (newspaper is ideal) and stick it together to create their structure. It takes a little longer than the other options too.
- Straws – please use paper straws rather than plastic where possible (this links well to environmental sustainability in industry as well as eco-schools). Give each group the same number of straws, a pair of scissors and a small roll of sellotape (I haven't found a more sustainable way of sticking them together yet but maybe masking tape?).
- Knex – schools often have Knex kits or you can borrow them from your local STEM hub (Science Connects in the West, STEM East in the East and Aberdeen Science Centre in the North). If you want to borrow kits from a STEM Hub, please make sure you book them out in plenty of time as they may not be available otherwise.

The brief you give the pupils can vary depending on how old they are and how long you've got with them. A simple exercise for younger pupils (P1-3) is just to build a bridge to span a certain distance (usually 500mm). To make it slightly harder, you can specify a minimum width for the bridge, or to carry a certain load (or both), you can take a sample toy vehicle that has to be able to cross the bridge, or you can stipulate no central supports. If you have a longer timescale and secondary pupils, you could introduce a cost element to the bridge and charge the pupils for the materials they use. The variations are endless!

