



ICE Wales Cymru

# Bridge to Schools

## How to book

North Wales Bridge: [wales.cymru@ice.org.uk](mailto:wales.cymru@ice.org.uk)

South Wales Bridge: [gemma.morgan@alungriffiths.co.uk](mailto:gemma.morgan@alungriffiths.co.uk)

#ICEBridgestoSchools

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An interactive activity for Year 5 - Year 7 pupils

**How many pupils can take part?** About 30 students (one class at a time)

**How long does it take??** About 60 minutes per session

## Do we have space for it at our school?

You will need a space at least 17 metres in length with 3 metres of uninterrupted headroom. Vehicle access as close as possible is also needed with a flat surface large enough to accommodate all the students and the bridge.

## Learning outcomes

Pupils will have the opportunity to:

- Construct a substantial structure using simple methods
- Learn about health and safety issues
- Take responsibility for their actions
- Develop team building skills.
- Grow confidence and self esteem by taking part.
- Enhance their learning in a range of national curriculum subjects

## Links to the curriculum

Maths: counting, calculating, estimating

Design & Technology: planning, manual dexterity

Science: properties of materials

Language: new words, listening skills

History: bridges

Geography: why build bridges and where

Art: exploring ideas, shapes, spaces

Personal, Social and Health Education: taking care for self and others, develop confidence through success



# Bridge user guide

## Before the Event

Please allocate a “job” to each pupil (see 'Pupil Occupations' below). Please cordon-off an area where the Presenter and Engineering/Construction Ambassadors (ICE Wales Cymru representatives) will be part-assembling the Bridge before the pupilsession(s) takes place. There is no fee payable for using the ICE bridge activity. The activity is sponsored by Alun Griffiths (Contractors) and Jones Bros (Ruthin).

## Supervision

On the day the Presenter and Engineering/Construction Ambassadors will guide the pupils through the activities. The Teacher must accompany pupils for the whole event. ICE Wales Cymru will provide hard hats, high visibility clothing, gloves and goggles. These must be worn.

## Crossing the Bridge

Pupils will cross the bridge after completion. They will wear hard hats, high visibility clothing gloves and goggles. Only one pupil at a time will be allowed to cross the bridge. Teachers will also be invited to cross the bridge.

## Pupil Occupations

The Bridge will be built simultaneously from both ends. Each end of the bridge will require the following occupations:

2 x Peggers, 4 x Cleaters, 2 x Fixers, Remainder: Transporters

### Peggers

**Job1:** Insert joining pegs. Take care not to jam fingers in the tubes.

**Job 2:** Lie on floor under centre of Bridge to insert and tighten 2 securing bolts. Check the ground before lying down. Take care when inserting bolts and tightening nuts.

Take care when standing up from under the bridge.

### Cleaters

**Job:** Attach cables to decking. Take great care with fingers around the “cleat” (fixing bracket and pin).

### Fixers

**Job:** Join decking together with assistance from Transporters. Take care of fingers around tubes and pegs.

### Transporters

**Job:** Pick up decking and take to bridge, assist in joining decking. There must be 2 x pupils to transport each section of decking. Bend knees and not back when lifting. Both face same direction before moving. Walk slowly together.

## Venue Requirements

Your venue must meet the following criteria in order to accommodate the Bridge. 17 metres ( 51 feet ) in length; 3 metres (9 feet) in height. Due to the fact that most of the equipment is both large and heavy, the venue must have easy access. The equipment trailer (about the size of a large horse box) needs to be able to back up to the door as close as possible. Also, the equipment cannot be carried up steps so the access route to the hall needs to be flat and without steps.

It takes approximately an hour to unload the trailer and set up the equipment prior to the start of the activity, so we will need access to the venue an hour before the start of the first session and for an hour after the last session. This also means that volunteers and pupils we will be walking back and forth with the equipment during this time to load/unload the trailer.

Each session of the activity lasts around an hour and can have a maximum of 30 children (around 20-30 is ideal). An example of the timetable for the day if we run 2 sessions would be as follows:

- 8.00am - arrive, unload trailer and set up in the hall
- 9.15am - first group of pupils into the hall to start activity
- 10.30am - first group finish, school break
- 10.45am - second group to begin activity
- 12.00pm - second group finish
- 12.00-12.45pm - pack up equipment and load trailer
- 12.45pm - leave the school

### Risk Assessment

Materials and resources for workshops are supplied by ICE Wales Cymru. They are checked and repaired when necessary after each event. Each workshop begins with an explanation of the Health and Safety implications of the activity being undertaken. Emphasis is placed on individuals taking responsibility for their own actions and understanding that they have a duty of care to themselves and others. When working with schools or with other young people, either on or off their own premises, no ICE Wales Cymru activity will be delivered without the attendance of a class teacher/full time member of staff or the adult responsible for the group. The school / organisation that booked the bridge activity will take the responsibility for 'matching' pupils to jobs.

A full breakdown of the relevant risks and control measures can be found overleaf.

# Risk Assessment

Potential Hazard	Level of Risk	Control measures
<p><b>Part -construction of bridge prior to start of workshop.</b></p> <p>Many potential hazards</p>	M	<ul style="list-style-type: none"> <li>• ICE Wales Cymru representatives only are allowed to part-assemble components.</li> <li>• Pupils are NOT allowed to assist in any way.</li> <li>• Construction area to be designated Out of Bounds (School to arrange)</li> </ul>
<p><b>General</b></p> <p>Bumping into each other.</p> <p>Working on hard floor.</p> <p>Assembly of decking.</p>	M M M	<ul style="list-style-type: none"> <li>• Hard hats and high visibility clothing to be worn.</li> <li>• Floor area cleared of any debris.</li> <li>• All obstacles removed.</li> <li>• Rules are established at the start of the workshop when H&amp;S implications are explained and all are asked to 'sign-up verbally' to the rules, at risk of immediate expulsion from the activity.</li> </ul>
<p><b>Occupations</b></p> <p><b>Transporters</b> Lift and carry decking.</p> <p>Hold decking in place.</p> <p><b>Peggers</b> Trap fingers</p> <p>Trap fingers and lie on floor when joining centre sections.</p> <p><b>Fixers</b> Trapping fingers when joining decking sections together.</p>	L L L M M	<ul style="list-style-type: none"> <li>• 1 x person to be each side of decking at all times.</li> <li>• Bend knees, face same direction, walk slowly.</li> <li>• Ambassadors must supervise.</li> <li>• Only 1 x person each side of decking to insert pegs.</li> <li>• Once inserted keep hands clear.</li> <li>• Check ground is clear.</li> <li>• Take care of fingers when inserting bolts and tightening wing nuts.</li> <li>• Ambassadors must supervise.</li> <li>• Only 1 x person each side of decking.</li> <li>• Transporters to assist by holding decking in place.</li> <li>• Temporary support used for decking to rest on.</li> <li>• Hands clear from end of pegs.</li> <li>• Ambassadors must supervise.</li> </ul>

# Risk Assessment

Potential Hazard	Level of Risk	Control measures
<p><b>Cleaters</b> Trapping fingers when attaching cables.</p>	L	<ul style="list-style-type: none"> <li>• 2 x people per cleat.</li> <li>• Take care of fingers.</li> <li>• Ambassadors must supervise.</li> </ul>
<p><b>All pupils</b> Trapping fingers when adjusting cable tension.</p>	L	<ul style="list-style-type: none"> <li>• 2 x people per adjuster.</li> <li>• Care of fingers.</li> <li>• Ambassadors must supervise.</li> </ul>
<p><b>Crossing the Bridge.</b> Falling, bumping into "A" Frames and each other</p>	M	<ul style="list-style-type: none"> <li>• Only 1 x person to cross bridge at a time.</li> <li>• No one allowed to stand on bridge until person in front has crossed over.</li> <li>• Bend head when passing under 'A' frames.</li> <li>• Ambassadors must supervise.</li> </ul>
<p><b>Disassemble</b> Many potential hazards.</p>	M	<ul style="list-style-type: none"> <li>• ICE Wales Cymru representatives only to disassemble Bridge.</li> <li>• Learners NOT allowed to assist in any way.</li> <li>• Construction area designated Out of Bounds.</li> </ul>