



GO

INSPIRE EMPLOYERS

**Building Bridges
CREST Challenge**

EMPLOYER GUIDE



A British Science Association programme



INTRODUCTION

This guide is designed to help you support participants that want to run the Building Bridges CREST Challenge. Whether you have been approached or whether you want to deliver CREST Challenges, this document tells you what is required, while suggesting where you can make the greatest contribution.

GETTING STARTED

What are CREST Challenges?

CREST Challenges are projects which can be used when registering participants for a particular level of CREST Award. CREST Awards, managed by the British Science Association, celebrate the personal learning journey taken by participants during a Science, Technology, Engineering or Maths (STEM) project. We expect participants to demonstrate the ability to think about their own performance and learn from this. In education, this is referred to as reflective learning.

CREST Bronze Awards require participants to complete a minimum of 10 hours of work on a single project at a level typically achieved by 11-14 year olds, although this Challenge will work just as well with older participants. The way in which the 10 hours is delivered will be stipulated by the activity lead.

What does this Challenge involve?

The Building Bridges CREST Challenge aims to:

- Raise awareness of key challenges faced by civil engineers when building bridges
- Give participants a realistic experience of civil engineering
- Promote positive role models from the industry
- Encourage a wide range of talented young people to consider a career with your company and/or a career in the construction and built environment sector.

THE EMPLOYER'S ROLE

The Challenge has a number of phases, starting with a bridge tour. Your role as the employer is crucial here. The participants need you to explain bridge design, and to make the connection between what they have been taught and what you do in your work, so that they can complete the Challenge.

Ideally, the tour will involve looking at a number of completed or 'under-construction' bridges in your local area, to help participants understand the challenges of bridge planning and design.

WHAT DO YOU NEED TO DO?

If you, or any of your colleagues working with you, have never worked in this capacity before, we suggest that you prepare by registering as a Construction Ambassador or a STEM Ambassador, or use a similar scheme such as one run by professional institutions. If you are working towards professional status with the Institution of Civil Engineers, you may wish to register as an ICE Ambassador, as this will help you to achieve your professional status. Both the Construction and STEM Ambassador schemes provide basic training in working with young people, and how to do so safely.

Useful links

Construction Ambassadors:

goconstruct.org/en/information-for-employers/construction-ambassadors/

STEM Ambassadors:

stemnet.org.uk/ambassadors/

ICE Ambassadors:

ice.org.uk/Get-involved/Working-with-young-people/ICE-Ambassadors

The role of the employer in this project is as big or small as you want it to be. However, if you want to partner with an activity lead to deliver the Challenge, we suggest that they might have the following expectations:

- As a minimum, you would be involved in delivering the bridge tour to the participants
- In addition, you may answer participant questions emailed by the activity lead, or visit to provide your expertise as the project progresses. At the most committed level, you and/or your colleagues would attend each session when participants are working on the Challenge. The activity lead involved would endeavour to ensure that the level of support fits in with the availability of your staff.

Further sources of advice

Use the Get in Touch form on the Go Construct website:

goconstruct.org/get-in-touch/

Your CREST Local Co-ordinator

britishscienceassociation.org/crest-awards/finding-your-crest-local-coordinator-list-view

We strongly encourage you to agree with the activity lead the level of support you will offer before the Challenge starts.





THE BRIDGE TOUR

The overriding aim of this part of the Challenge is that the participants acquire knowledge and understanding about different types of bridge and how they work. It is equally important that they understand how the approaches to building bridges are planned, and gain an understanding of the materials used in bridge construction, including their performance over time when exposed to the elements.

Before the bridge tour

- Talk to the activity leads to find out about what you can expect from the participants.
- Confirm the number of activity leads and other adults accompanying the participants on the bridge tour.
- Help to compile a risk assessment.
- Plan the tour (making sure participants will get all the information required to complete their visit worksheets) and brief all the staff involved.
- Ensure that everyone working on the tour is aware of their role, and the protocols in use to keep the participants safe.

During the bridge tour

- Ensure participants and activity leads gain the knowledge required for the Challenge.

COMPLETING THE CHALLENGE

After the tour, the participants will work on the Challenge, which requires them to design the bridge across the Learning River and come up with a set of proposals to solve the Challenge, taking into account the requirements of the client (the local council).

What does the client want?

- A single carriageway two-way bridge must join Oldsby with Newtown. The bridge must be capable of supporting heavy traffic and heavy-goods vehicles. The council has provided a design manual to help.
- The bridge must cross the river in a way that minimises damage to the river banks and the species that live there.
- The bridge must have a sustainable drainage system.
- The bridge must be visually appealing and must meet the current requirements for road bridges across rivers.
- The bridge must have a minimum working life of 50 years, but the client understands routine maintenance; for example, painting, resurfacing of the roadway and replacement of any barriers will be needed.
- To satisfy the client, this must include 20,000m² of tree planting around the site. This should screen the road, and at least half of it must be on the contaminated land to the south of the river. Research carried out so far on the site indicates that any type of tree that can tolerate acid soil will do well on the site. The council is currently using phytoremediation (growing plants to absorb heavy metals) to clean the site.

The CREST student profile

Each team member will also complete a CREST Bronze Award profile. This requires them to reflect on their own performance. It is a key feature of the CREST experience, and reinforces the learning that participants gain from taking part in the Building Bridges CREST Challenge.



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MAKE A DIFFERENCE

For more information on
CREST Awards and Go Construct

Please visit

goconstruct.org

Or contact

experience@goconstruct.org

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