

Race to Construct

Helps link learning to careers and the real world.



Race to Construct is a hands-on session that explores different elements of STEAM (Science, Technology, Engineering, Arts & Maths), with a focus on careers in the rail industry.

The activity starts with an introduction to S.T.E.A.M. and students take part in a jobs themed mini quiz. In teams, learners then plan and build a railway track along a map of the country, while wearing their teams' coloured high vis jackets.

Challenge cards highlight different jobs and responsibilities in and around the rail industry, including design, health and safety, practical building, using different languages, identifying artefacts and more.

The workshop includes:

1. Briefing Zone – learners find out about railways and new projects such as HS2.
2. Planning Zone – learners find out about the challenge and how to score points, they are then given a few minutes to discuss as a team how they do the challenge.
3. Construction Zone – learners build a railway heading north from London whilst completing completing mini challenges at the same time to score as many points as possible.
4. Recycling Zone – as the teams scores are being confirmed, teams work together to tidy away their K'nex® tracks.

Aim:

By the end of this activity students will:

- Work as part of a team to build a railway track across the country and overcome different obstacles that engineers face.
- Understand the need to compromise and prioritise .
- Become more aware of the different career opportunities in the rail industry.
- Use creativity, teamwork and problem-solving skills to help their team score as many points as possible.

Curriculum Links:

- Maths – Use the fundamentals of mathematics and shapes to solve problems.
- Design and Technology - Understand developments in design and technology. Build and apply a repertoire of knowledge, understanding and skills in order to design and make prototypes.
- English – Following instructions, speaking, listening, sharing ideas and presenting.
- Geography – Developing knowledge about famous landmarks in different parts of the world. Understand how human and physical processes interact to influence and change landscapes, environments, and the climate.
- PSHE– Develop skills for future success.



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Logistics and planning:

The session is designed for around 30 learners, but larger groups may be accommodated upon request. We ask that a teacher is always present throughout the activities, to support learner engagement and manage behaviour.

Set up requirements:

School hall or similar is required. Projector, screen, and power are required.

Why Choose Learn by Design?

We have been delivering engineering focused activities for over seven years and within our team we have education communicators with a specific background in engineering.

We can also use our links with engineering STEM ambassadors to reach out to local ambassadors to support the day.

For further learning this activity goes well with:

- [Power Your World](#)
- [Tower Tournament](#)
- [Bridge Building](#)

Watch the videos below to meet some of our Education Communicators and see some of our other STEM workshops >>>



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