The Rapid Response Engineering Challenge

An exciting, practical and professional approach to Civil Engineering.

*Created by*

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CIVIL ENGINEERING!

What is it? Is it for me? The activity – the RAPID RESPONSE CHALLENGE – is designed to show young adults that engineering is interesting, adventurous and challenging. It also demonstrates that it requires intelligent and talented people who can use their initiative. The challenge is aimed at Year 9 pupils, who are at a receptive stage of their development, with important decisions to be made about the future direction of their education.

AIMS OF THE CHALLENGE

To:

1) Illustrate to pupils the relevance of National Curriculum subjects (such as Design & Technology, ICT, Maths and Geography) to the real world and demonstrate their integration within engineering.

1. Publicise engineering to youngsters who would not otherwise consider it as a career and to reach as wide an audience as possible.
2. Interest the pupils in finding out more about engineering and other topics raised in the challenge.
3. Promote Civil Engineering as an excellent career choice in an entertaining, exciting and educational manner.
4. Attract good candidates into the profession.
5. Stimulate problem solving, analytical skills, team building and leadership skills.
6. Motivate pupils to apply some of the working principles, demonstrated in the exercises, to their own work.
7. Increase engineering-related skills and knowledge
8. Impress a positive image of Civil Engineering on the minds of pupils by creating a memorable event.

METHOD

The challenge consists of a set of activities lasting one school day. The topic will be a recent natural disaster where engineers have been required to solve problems in the disaster relief effort. The idea is to create an awareness of ways in which engineering is used to overcome the results of disasters.



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The day begins with an introduction to Rapid Response Engineering by talk and video, followed by information gathering. In the afternoon, pupils construct shelters and water transport systems.

*Task 1: General information gathering exercise*

Prompted by the presentations, pupils are required to answer a series of questions using the information they have been given, but also using their own general knowledge and initiative.

*Task 2: Logistics exercise*

(Working in pairs)

The teams will be asked to think about the following areas:

 Vegetation

 Mountains / flat areas

 Flooding / landslide susceptibility

 Access

 Fuel sources

 Environmental impact

 Health hazards

 Security issues

*Task 3: Map presentation*

The teams must collate all their information and present it graphically on their maps. They are encouraged to be innovative and daring with their graphics / presentation and to think about *how* to communicate their ideas.

*Task 4: Practical task*

In the afternoon, the teams work outdoors performing two practical activities. Each of the teams will attempt one of the two activities, the water source exercise or the shelter exercise. The intention is to promote teamwork by encouraging them to plan and design how they will build their structures and, then, to successfully build the structure within the time limit.

This activity is supported by a full pack of guidance notes and a CD-ROM. In view of the engineering input, the activity should only be run in conjunction with civil and structural engineers. (For details contact your local CITB-ConstructionSkills Education Team – see section 13.)

*The activity is supported by the Institute of Civil Engineers (ICE).*

