

Water for a community challenge

The Challenge Brief

Scene Setter

You are working for a charity which helps communities in developing countries to get a clean, safe water supply. The charity believes in working with the local community and facilitating solutions which build upon local knowledge, make use of technologies that are affordable and maintainable by the local community and involve local people in planning.

You are going to be given a village to work with, in order to develop a safe, clean water supply. Your challenge is to:

- plan for how you will work with this community
- Explain a technique for analysing a water sample
- Design ideas for either
 - a simple filtration system that could be used in the village and describe how it works and where it could be used
 - or
 - a proposed system for either pumping water from under the ground
 - or
 - connecting the village to a water supply nearby

Work one of the ideas into a working prototype

Challenge Stages

One of the most important stages of your challenge will be research. Working with stakeholders to take account of their views is an important part of the work of civil engineers and other people who work with communities, do. It is important to find solutions to practical problems like water supply in a way that involves stake holders.

Look at the work of the charity Water aid to find out more about how they work with communities in developing countries.

The video below gives an overview of their work

http://www.wateraid.org/uk/learn_zone/teachers/secondary/the_work_of_wateraid/6397.asp

The game below gives some insights into some of the issues that Water aid workers have to think about when working with communities.

<http://www.wateraid.org/other/games/pani/game/index.html>

Plan with your team some of the other stages that will be involved in this challenge. You will also need to think about:

- Roles and responsibilities in your team
- How you will monitor progress?
- How you will gather evidence of your learning?

Purpose

Which skills do you think you will use?

Which knowledge that you gained , in technologies , geography and mathematics do you think you will be able to apply?

How will you plan to present the information in an understandable way and in a style that is suitable for your audience?

How will you take account of the views and needs of local stakeholders?

If you were the planning authority of the town, what would you look for in the design team?

Why is this kind of learning useful?

Presenting your findings

In addition to fulfilling the brief, your team need to present your planning and proposals to the water charities planning committee so that they can check that you are ready and organised for the trip.

- Your presentation should include information about your
- team name, team members and roles
- information on planning
- proposals for how you will work with the local community
- your research into solutions for getting the water to the village
- sketches of Initial ideas for either: pumping water from the ground, cleaning water or transporting water from a source outside the village
- photos/videos of team work during prototyping
- documentation of improvements
- team reflection based on skills, learning and working together

Reflection

Here are some of the skills that engineers use. In what ways did your team use these skills during this challenge?

- formulate questions
- make use of problem solving skills
- think creatively
- think critically
- design and build models and prototypes
- use tools, equipment, software and materials
- evaluate products, systems and services
- make connections and apply learning in new contexts
- collaborate, lead, show initiative and interact with others
- prepare and deliver presentations -- oral, written, multi-media