‘Engineer the community’ challenge

(aimed at ages 11-14, Key Stage 3)

This is a scenario challenge: a role-play activity aimed at ages 11 to 14 and is open to schools, community groups, families and individuals.

International Women in Engineering Day (INWED) is about celebrating women in engineering, but solving problems and finding creative solutions is all about collaboration. Women and men, teams of diverse thought, experience and ability make the best teams – so the membership of your team can be anyone who is up for this challenge!

Taking inspiration from our climate change, future transport, sustainability, and international alliance hero squads, you have the chance to become an engineering hero too - by taking part in this challenge.

The Challenge

You have been tasked with creating a brand-new island community off the coast of the UK, as an experiment in creating a sustainable, environmentally friendly community.

Island fact file

- The island is located in an area where the climate is changeable. Like mainland UK, it can be extremely cold in the winter and it can be windy. There are periods of extreme wet weather and it can be extremely hot in the summer months.
- Approximately a 1/4 of the island is mountainous and the land around the mountains is not suitable for drilling or tunnelling.
- Your community will include residents of all ages and will need to provide essential services such as healthcare, education, and recreation.
- Some of your islanders may wish to commute to the mainland for their work but they all live on the island full-time.
- You need to protect some land for recreation and for nature reserves, and there is limited space on the island to grow all the food you need.
- The population of the island will initially be 5,000 people but is expected to grow quickly, doubling within 5 years.

Teamwork

The information we have provided about our hero squads, and the international alliance, are designed to inspire you and help you think about how you might tackle the ‘engineer the community’ challenge.

When you create your team and assign roles to your members you can also include some of our heroes, essentially creating your own hero squad.

Choosing your challenge level

Choose whatever excites you the most, or the aspect that you think is most important!

You can take the challenge as big and as broad as you like, tackling the main details of the complete design of the community. Alternatively, you can choose to focus in on more specific aspects. A narrower focus is not less work as it is entirely up to you as to how detailed you want to go into your project.

For example, you could choose to focus on one of the squad themes (future transport, sustainability, or climate change). You might like to focus on something specific within that area such as how you will grow and manage food supplies? Perhaps you have an idea for a new way of tackling a problem? We look forward to hearing about your creative and innovative ideas!

Presenting your design

You can choose one of these outputs for presenting your solution:

- a poster
- a photographed, labelled model
- a voiced-over slide presentation – maximum 10 slides
- a business proposal document – no more than 8 pages
- a video – maximum duration of 5 minutes

File formats that we can accept are: JPG, PDF, PPTX, MP4, DOC.

When you present your work we would really like you to tell us about the roles in your team and why you were inspired by, or chose, particular heroes to join you.

Adults, please read: For details on how to submit children’s work to us, please visit **www.cranfield.ac.uk/engineeringheroes**

Project guidelines:

- You may use the Cranfield logo as part of your work and it can be requested from us via **cranfieldcommunity@cranfield.ac.uk**.
- Logos that belong to any of our external partners should not be used as they are tightly controlled and require permission.
- Anyone (group, family or individual) who enters is consenting to have their work displayed as part of our online exhibition. For information on consent please visit **www.cranfield.ac.uk/engineeringheroes**