

STUDENT BRIEF

INCREDIBLE INOCULATIONS

GOLD
AWARD

Vaccines and immunisation have given us the opportunity to eradicate some infectious diseases from the world, smallpox has already been eradicated and we are close to success with polio. This is a marvellous opportunity to transform lives but the remoteness of some of the remaining pockets of infection make the final push towards this goal the hardest step of all. There are many obstacles to achieving this and overcoming these involves hard work, ingenuity, commitment and collaboration. Do you have what it takes?

REACHING THE LAST FEW

Research project

Have you ever wondered... If diseases can ever be totally eradicated?

In a vaccination programme reaching the last few unvaccinated people is essential if diseases are going to be eradicated but is the cost worth it?

Imagine you are a researcher for a Non-Governmental Organisation who is tasked with looking into the cost benefits of vaccination programs. As well as economic challenges there are social and geographical challenges to overcome. Use your research skills to

- Find out about the push to eradicate diseases from across the world
- The benefits to the whole world population from doing this

Some things to think about...

- Examples of diseases that have been eradicated
- The vaccination programs that are currently underway
- Where in the world are they taking place
- The challenges these programmes have to overcome
- The funding that supports them
- The costs and who pays
- The benefits to local people and wider population
- How might we tackle diseases such as Malaria that cannot be vaccinated against but we would still like to see them eradicated

KEEP IT COOL!

Practical project

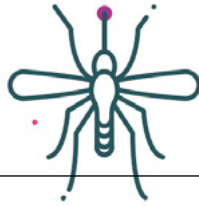
Have you ever wondered... how modern technology can benefit people even in the remotest areas?

Imagine you are an engineer who has been commissioned to develop a power supply for a fridge/cooler for vaccines that will work in any environment. The problems of generating a continuous supply of electricity no matter what time of day or the weather can be overcome but it will need ingenuity and a solution that uses more than one energy source. Your prototype will need to be tested over a range of conditions. You need to undertake a practical experiment to:

- Design a means of generating a continuous power supply, indefinitely
- Take account of all possible situations

Some things you might like to think about...

- Different ways of generating off grid electricity
- The variability of wind, sunlight, tides and water flow that you might encounter
- Multiple generating solutions that work together
- How you will test your solution.
- The voltage and current you will need to produce to run a very small fridge/cooler
- Comparing your energy generating source with other people's designs
- Cost effectiveness
- Sustainability – of materials and your design.



FINDING FUNDING

Communication project

Have you ever wondered...how organisations get money for their work to help eradicate diseases?

Imagine you are a Grants fundraising officer working for an organisation trying to eradicate Polio. Your job is securing the last element of funding to complete your work. You will need to be very persuasive if you are to convince governments and agencies to provide you with the funding. Use your communication skills to:

- Make the case for the eradication of polio despite the considerable costs
- Develop this into a presentation or paper that could be used to persuade different groups of people of your argument.

Some things to think about...

- Other diseases that have already been eradicated
- The benefits of total eradication
- Case studies help to illustrate the impacts
- What the costs of such programmes might be
- The challenges this last effort must overcome
- The types of people you will have to persuade
- A presentation could be in many forms, a seminar, video, radio script or paper based resource
- Data will help your case so use it well



Useful Links

www.getrevising.co.uk/diagrams/features_of_a_successful_vaccination_programme
The features of a successful immunity programme

www.practicalaction.org/technical-briefs-schools-energy
Technical information on renewable energy systems

www.historyofvaccines.org/content/articles/disease-eradication
Information on the eradication of diseases

www.immunizebc.ca/facts-on-immunity/how-vaccines-work
Videos and downloads on how vaccines work

www.historyofvaccines.org/content/articles/disease-eradication
Information on the eradication of diseases

Health and safety

If you carry out any experiments or practical activities then you will need to put together a risk assessment. To do this you will need to:

1. Find out if any of the substances, equipment or procedures you plan to use are hazardous
2. Assess the risk to yourself and others (which means what could go wrong and how serious that could be, low medium or high)
3. Decide what you need to do to reduce that risk e.g. wearing goggles or other protective equipment and knowing how to deal with any potential accidents

You will need to show your risk assessment to your teacher and get his/her approval before doing any practical activities.

Remember! Judges will be looking for projects that demonstrate good communication skills, show innovation and creativity and that address a real-world problem.

Use the Student Profile form to help structure your project www.crestawards.org