

## STUDENT BRIEF

# INCREDIBLE INOCULATIONS

SILVER  
AWARD

Most of us have benefitted from antibiotics and vaccines, they have been some of the biggest medical developments of the modern world. Many painstaking hours have been spent in developing testing and improving vaccines to combat a wide range of diseases. The mass production and storage of vaccines is a complex and difficult process and helping people in the remotest parts of the world to benefit from something we take for granted is a huge challenge, but the benefits are enormous. Vaccines- a shot in the arm for the developing world!

## VIVA LA VACCINE!

### Research project

Have you ever wondered...how vaccines are made?

Imagine you are an investigative journalist writing an article for 'New Internationalist' looking at the costs and profits made by medical companies and whether they are justifiable. Because of their importance in the developing world you are interested in how vaccines are developed, tested and made commercially available. Use your research skills to find out:

- About the development of an important vaccine for the developing world
- The costs involved in its development, production and distribution

### Some things to think about...

- Which vaccine you will look into
- The company that developed and produced it
- Processes involved in moving from small scale to large scale production
- Storage and distribution of vaccines
- Who the vaccine will be administered to
- Costs of the vaccine
- The benefits of vaccination programmes

## ELECTRICITY FREE FRIDGE!

### Practical project

Have you ever wondered...how clever solutions can help people live better lives?

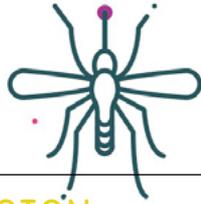
Vaccines are needed in remote parts of the developing world where electricity cannot be relied upon.

Imagine you are a product designer for a small social enterprise company who has been employed to develop a fridge that keeps vaccines cool but doesn't need electricity. You have heard about simple fridges that use evaporation of water as a means of cooling but need to find out more. Devise a practical experiment to:

- Develop a fridge that works by evaporative cooling
- Find out how cool you can get it

### Some things you might like to think about...

- Examples that already exist
- Any improvements that could be made
- The use of different material
- How to test your design
- What temperature you would you need your fridge to be
- Evaluating your design
- Comparing your design with others working on the same project



## THE POWER OF PERSUASION

### Communication project

Have you ever wondered...how to persuade people to be vaccinated?

Imagine you are an aid worker working on a vaccination programme in a remote part of Bangladesh. You need persuade people to take time out from growing crops, tending their animals or securing enough water to travel long distances through difficult terrain and attend a vaccination clinic with their families. In difficult circumstances they may prove hard to win over. Can you get your message across? Use your communication skills to:

- Explain the benefits they will get from attending a vaccination clinic
- Communicate this in a way that will convince them to invest their time and go to the clinic

### Some things to think about...

- What the long term benefits to people might be
- How vaccines work and how they will help keep a whole community healthy
- The group effect or 'herd effect' of vaccinations are not the easiest things to explain to people
- The importance of everyone attending
- The consequences if they don't
- Low literacy levels might mean you will need to use a variety of approaches. You can design posters, write a play or a song. Be creative!
- Visual images work well



### Useful Links

You may find some of the links below useful for your project:

[www.immunizebc.ca/facts-on-immunity/how-vaccines-work](http://www.immunizebc.ca/facts-on-immunity/how-vaccines-work)

Videos and downloads on how vaccines work

[www.practicalaction.org/zeer-pot-fridge](http://www.practicalaction.org/zeer-pot-fridge)

An electricity free fridge used in developing countries like Sudan

[www.practicalaction.org/technical-briefs-schools-food](http://www.practicalaction.org/technical-briefs-schools-food)

Technical briefs on evaporative cooling and the zeer pot

[https://en.wikipedia.org/wiki/Herd\\_immunity](https://en.wikipedia.org/wiki/Herd_immunity)

Information on how the herd effect works from Wikipedia

### 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](http://www.crestawards.org)