

The Great *Exhibition* AT HOME

Week 3

Welcome to the Great Exhibition at Home Challenge. Inspired by the Great Exhibition of 1851, we are exploring how engineers can help protect the planet.

This is the third week of The Great Exhibition at Home challenge! Remember, you can keep your exhibits that you have already created and the work you create this week to display in your Great Exhibition at Home in week 7.

Use the worksheets provided to learn about this week's 1851 der, the Comical Creatures and inspiring engineer, Ben Crowther. Then take part in this week's engineering challenges and bring the wonder of the Great Exhibition into your own home!



1851 *der* Worksheet 3: *The Comical Creatures*

Some of the inventions exhibited at the Great Exhibition were more curious than others!

A particularly strange exhibit found within the Crystal Palace was by German taxidermist Hermann Ploucquet. Visitors to the exhibition could peer at a display of stuffed animals doing distinctly human things, such as a frog carrying an umbrella, a pair of sword fighting mice and hedgehogs on ice skates! The display captured the imagination of the Victorians and even Queen Victoria herself described Ploucquet's display as "really marvellous".

TAKE UP THE CHALLENGE!

Unfortunately even being able to sword fight wouldn't save animals from extinction in today's climate. See if you can find out more about different animals who are finding it increasingly hard to survive on the planet. Make a display or poster about the animal that interests you most and raise awareness of the challenges that it faces, can you think of any ways that engineers can help?



Ben Crowther

Ben is a young engineer from Reading who is passionate about the environment. After studying engineering design at the University of Bristol he co-founded LettUs Grow with two friends from university who were equally passionate about reducing food waste and CO2 emissions.

What is LettUs Grow?

LettUS Grow is a company who have developed a new method of farming which uses less water, needs no pesticides and can be set up anywhere in the world: from cities to deserts.

How does it work?

Instead of growing plants in soil, LettUs Grow cover the roots of their plants in a mist filled with nutrients. This means the plants need 95% less water to grow than traditional agriculture!

This unique style of growing means the beds can be placed under a light source of either the sun or LED lamps so it can be used in greenhouses or basements. The system dramatically reduces the operational cost of indoor agriculture, whilst delivering an average of a 70% increase in growth rate across a range of crop species.

How can LettUs Grow help the environment?

This new style of farming helps to address some of the biggest environmental concerns facing our world – CO2 emissions, waste, ecosystem collapse and food security.

Due to our growing population food production needs to increase by 70% by 2050 to feed the nearly 10 billion people living on earth. As a consequence we must find new ways to grow food with less land and an unstable climate. LettUs Grow's methods are more efficient and sustainable than current methods and encourage people to grow their food locally rather than having food travel to get to plates.

NOW IT'S YOUR TURN

Can you try growing something of your own? You don't need soil or a garden to do this. Like Ben you can grow indoors too – follow our simple guide to growing cress in your home.

1. Get your parent or guardian to help you order some cress seeds online
2. Find a punnet, tray or egg box – this can be a great way to reuse and recycle
3. Line your container with wet kitchen roll or cotton wool and evenly sprinkle the cress seeds on top
4. Cover with cling film and place on a warm windowsill where it can access full sunlight
5. Keep an eye on your seeds, if they seem a little dry add small amounts of water. After about 5-7 days the cress shoots should be ready for harvesting. Snip off the shoots using a pair of scissors and add them to your sandwiches!

If you are not able to grow in your home why don't you try designing your own contraption which grows food more efficiently. How would it work and what would it grow?

Learn more from Ben at bit.ly/3asHglv

Come back to discover week 4 – learn about a truly unique 1851der, our next inspiring engineer, and an extra special challenge!

