The Life Challenge

for lower secondary

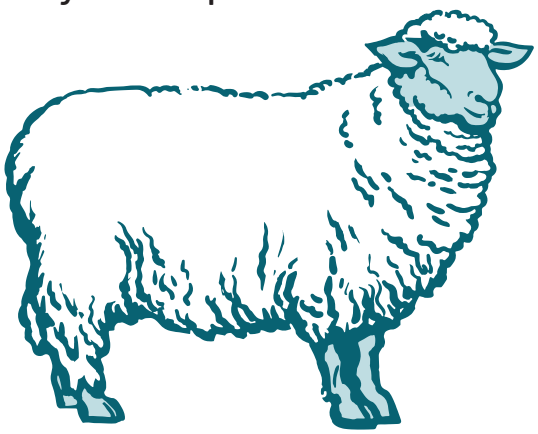
Name: _____

Find out about exciting developments in science and technology and how they have helped transform people's lives. Learn some interesting job facts and find out where to go for more information.

Start on Level 1 – Explore

Go to the Genetics section

Find Dolly the Sheep



Dolly was important in stem cell research. Stem cells are found throughout our bodies and scientists are using them to help treat diseases, such as cancer and diabetes.

Why did she become famous?

_____

_____

_____

_____

_____

Go to the touch screen to find out more about Dolly

Dolly was cloned from the adult cell of a Finn Dorset ewe.

Which of these statements are true?

- ☐ Not all clones look identical
- ☐ Scientists are able to clone dinosaurs
- ☐ No clones occur naturally

Go to the Genetic Science touch screen about ethical dilemmas

Genes, which are made of a chemical called DNA, are responsible for some traits you inherit from your parents, such as hair and eye colour. Some genes which don't work correctly result in diseases or illnesses.

Which story did you choose?

_____

What did you find out?

_____

_____

Go to Level 3 – Communicate

Find the cardiac monitor and sensor (on far side of the big central case, object 5)

New technologies are helping people to monitor their own health. Several Scottish companies and universities have a good reputation worldwide in the development of medical technologies.

A cardiac monitor is used to collect information about a patient's heart.

What technology do you need to use with it?

People can also wear technology to help them improve their performance.

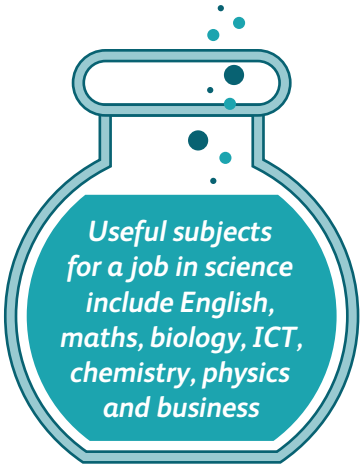
Name one activity which people can monitor.

Find the speech synthesizer interactive

Try it out.

Speech technology is being developed by scientists to help people who have lost the ability to speak. New technology will allow them to speak in their own accent.

What is one advantage of this?



Go to Technology by Design

Go to the Engineering Humans section

Find the EMAS bionic arm

Cutting-edge technologies are being developed by engineers and medical professionals which can improve people's lives.

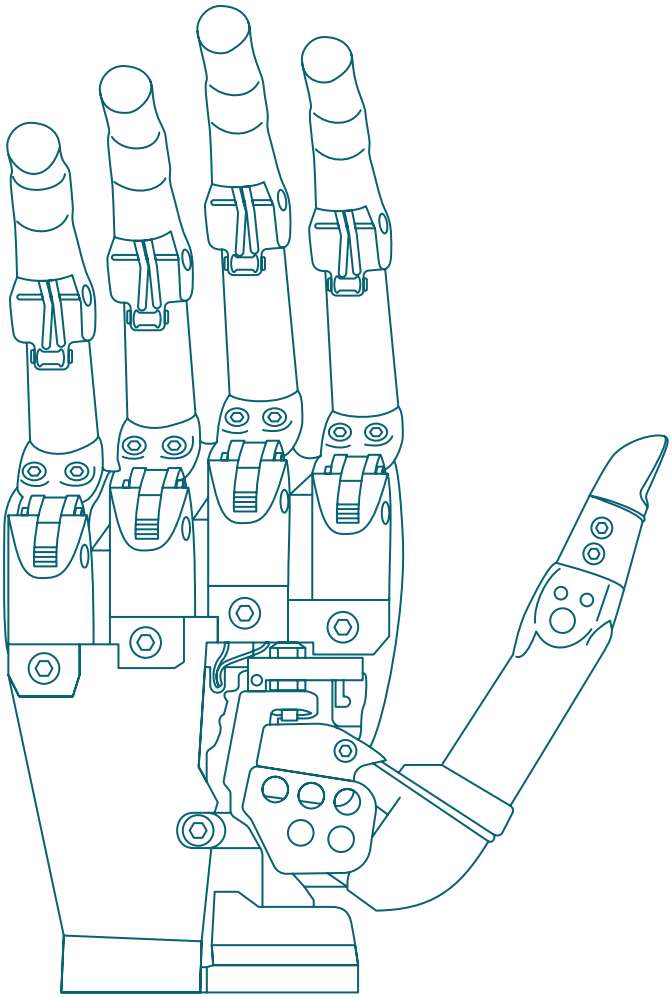
How is it different to the other prosthetic arms on display?

Find the bionic hand

Circle the subjects you think the designers of this hand needed to know about to develop this technology?

computing **biology** **chemistry**

design **physics** **maths**



Find the prosthetic legs

Compare the prosthetic legs.
Write down three differences between them.

1

2

3

Go to Level 5 – Enquire

Go to the Inventing Drugs section

Find the inhalers used for treating asthma

Scotland has a long history in the discovery and development of new drugs.

David Jack, a Scottish chemist, invented a commonly used inhaled medicine for asthma.

Why is asthma treated with an inhaler?

Find the Design a Clinical Trial game

There are several different stages involved before a drug reaches customers, from research and testing to manufacturing.

Why is it important to test drugs before they are taken by people?

Go to Getting under the Skin

Find the model of John Scott's brain (object 11)

This was made using medical imaging.
This involves taking pictures of inside the human body and has improved greatly over the years.

Why do doctors use scans?

Find the touch screen about X-Ray films.

Read the story. How has this museum used CT scans?

So now you know more about: **Life Sciences**

Life sciences is the study of humans, animals and plants and includes areas such as drug discovery and development, medical technology and stem cell research.

Life Sciences is an important industry in Scotland. In future, lots more people will be required with engineering and digital skills for this exciting area of work.

Find out more at **www.myworldofwork.co.uk**.
Find out what subjects you need to study at school, what skills you need, how many jobs there may be in the future and lots more.

National Museums Scotland