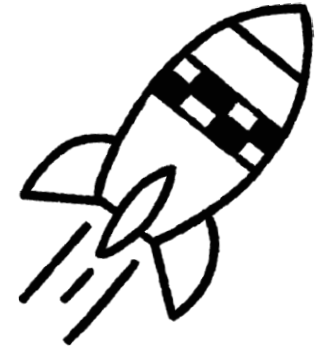


Electrical appliances of the future



Science

Unit: Simple electrical circuits

Outcome

I can invent my own electrical appliance for the future and describe how it would improve our lives.



Keywords

electricity

electrical appliance

engineer

diagram



Keywords

Electricity is needed for lighting, heating and making machines and appliances work.

An **electrical appliance** is a device or piece of equipment designed to perform a specific task. It needs electricity to work.

An **engineer** is a person who designs and builds things.

A **diagram** is a simplified drawing of information.



Lesson outline

Electrical appliances of the future



Electricity in our lives



Electricity in the future



Electricity is an essential part of our lives.

It would be difficult to imagine life without it! How do these **electrical appliances** help you?



Your alarm clock uses electricity to wake you up.



Your hairdryer uses electricity to dry your hair.



Your tablet uses electricity to play games and learn.



Have **electrical appliances** always been around for humans to use?



Alex's dad

When I was your age, there were no mobile phones, just a phone plugged into the electrical socket at home.



Alex's grandpa

I was your age when we got our first TV. The picture was in black and white and there was no remote control.



Alex



Early **electrical appliances** have been around since the 1800s, but it was in the 1920s that inventors and engineers created new appliances for the home, which require **electricity** to work.

Brooms and carpet beaters were replaced by vacuum cleaners.

Ice boxes were replaced by fridges and freezers.



carpet beater



vacuum cleaner



ice box



fridge-freezer



By the 1970s, many homes in the UK had a colour television. There were only three channels to watch though!



early television

It was not until the mid-1980s that mobile phones became widely available in the UK. Many of these had only a few hours of battery life before they needed charging again!





Why are electrical appliances invented?

a to make adverts for television

b to win design competitions

c to help improve our lives





Which of these professionals are most likely to invent and design electrical appliances to help improve our lives?

a hairdressers and beauticians

b scientists and engineers



c teachers and headteachers

d sportsperson



Carry out your own research by talking to adults at school or at home to find out which **electrical appliances** were invented during their lives.

Are there any electrical appliances that they remember growing up without?
What did they use before this?

Which appliances do they remember being invented and what difference did it make to their lives?



Carry out your own research to find out which **electrical appliances** were invented during people's lives.

I remember the invention of the walkman. I could listen to my favourite music on cassette tapes through headphones wherever I went. I didn't have to use a record player at home.

I remember when mobile phones were invented. When I was a child, we had a telephone in the living room, and it was plugged into the wall with a wire and sat on a special "telephone table".



Lesson outline

Electrical appliances of the future



Electricity in our lives



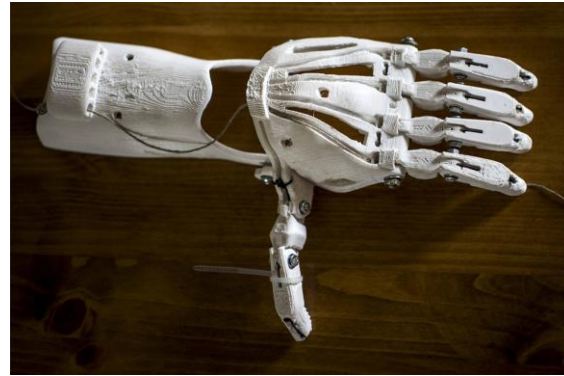
Electricity in the future



Scientists and **engineers** are always looking for clever ways to invent and design **electrical appliances** to help solve problems. They will develop even more uses in the future.



Smart clothing can track your location.



a prosthetic hand made using a 3D printer

3D printers can create models similar to human bones.



Robotic tools are useful because they are more precise and flexible.

This means that people like surgeons can perform operations that would otherwise be too difficult.



surgeons in an operating theatre



a robotic arm



Smartwatches and devices that people wear can help monitor their health and athletic performance.

The invention of Bluetooth means these devices do not need wires.

Do you own any electrical devices that use Bluetooth?

How are Smart devices used to improve our lives?



a smartwatch monitoring heart rate



Many people believe electric cars are the vehicles of the future because they are healthier for the planet than petrol or diesel cars.

Engineers suggest that we may be flying in electric aeroplanes by 2030!



charging an electric car





Which of these are electrical appliances that could help our lives in the future?

- a** smart clothing that can track our location ✓
- b** robotic arms to perform careful surgery ✓
- c** wood burning stoves to warm buildings
- d** electric aeroplanes ✓



Aisha wants to be an **engineer** when she is older.

She has lots of ideas about **electrical appliances** that could improve our lives.

Aisha scribbles her ideas in a notebook. It is very messy, but she understands what everything means.

Aisha



What would be the best way for me to share my designs and inventions with other people so I can show them my ideas?

What do you think?



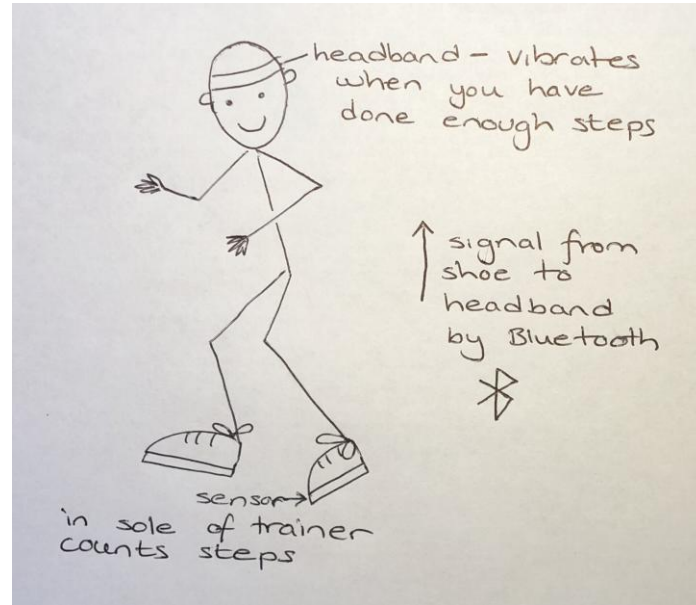
Aisha draws a **diagram** to share her ideas.

She labels it to show what the different parts to her design are and to help people understand what it is and what it does.



Aisha


These trainers help you keep track of your steps.





Which of these could be used to present scientific ideas?

a poems

b drawings 

c a dance

d diagrams 



Think like an **engineer**.

Invent and design a new **electrical appliance** that will improve life in the future.

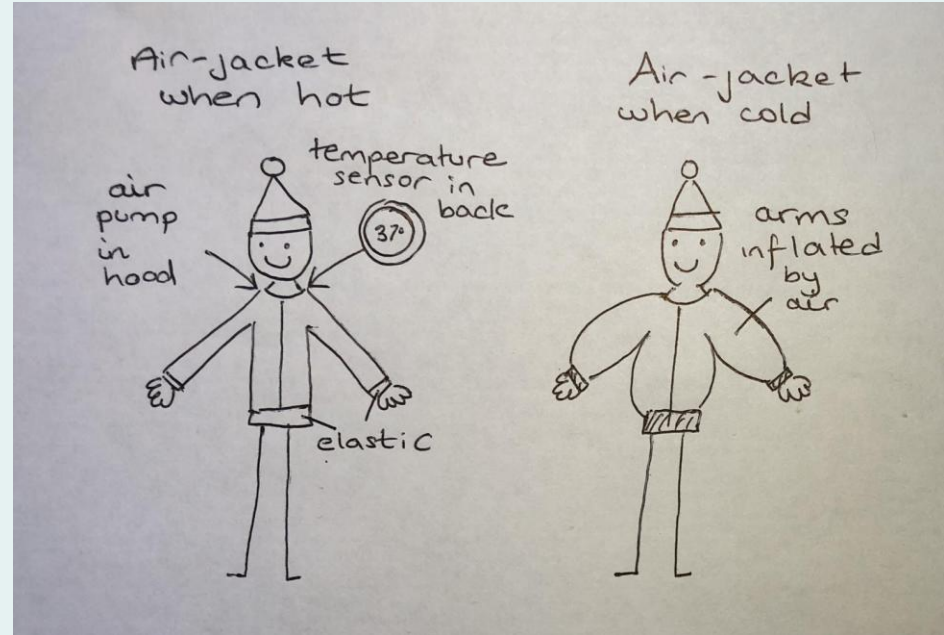
Draw a labelled **diagram** of your design.

Include a paragraph about what it is and what it does.



Invent and design a new electrical appliance that will improve life in the future.

The Air-jacket has a temperature sensor in it to track how hot you are. When you are too cold, air is pumped into it, and it puffs up to provide insulation. Elastic at the wrist and waist stop the air escaping. When you warm up, the air is released.



Summary Electrical appliances of the future

Scientists and engineers invent and design electrical appliances to help improve our lives.

Scientific ideas can be presented using labelled scientific drawings and diagrams.



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