# Science

## The Environment


Climate Change
twinkl

# Aim

- I can measure the melting of ice in a comparative test.
- I can perform a test and draw a conclusion.

# Success Criteria

- I can measure and record the time taken for ice to melt.
- I can compare two different measurements.
- I can set up a simple comparative test.
- I can draw a conclusion from the results of a comparative test.

# The Environment

We are going to be learning about **the environment.**

Do you know anything interesting about the environment?

When we talk about 'the environment', what do we mean?

# The Environment

Humans, like all living things, need certain things to live and be healthy. We need somewhere safe to live, clean air to breathe, clean water to drink, and good food to eat.

Humans, and all living things, get everything we need from our home, Planet Earth! This is our environment.

It is important that we keep the environment healthy by taking care of the soil, the water, the air and all the plants and animals that live here. That way the Earth can keep giving us all the things that we need to be happy and healthy.

Taking care of the Earth is also called caring for the environment, or 'being green'.

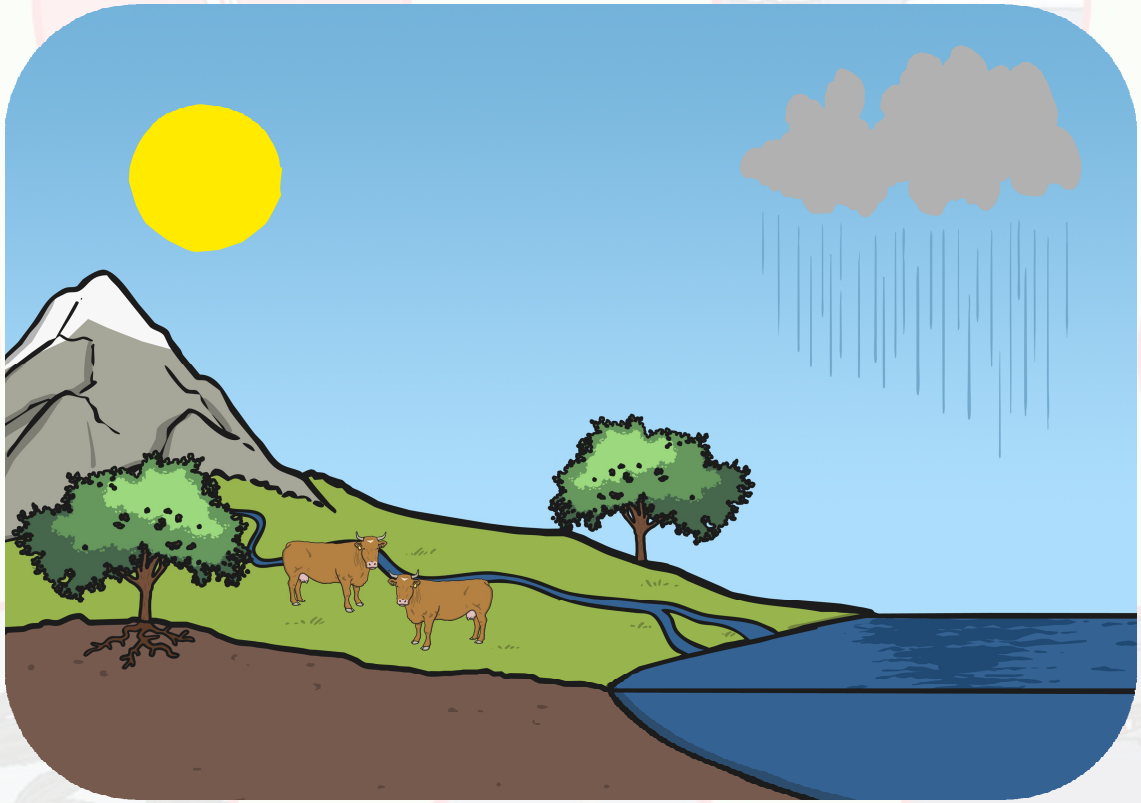
# The Environment

The weather, or climate, is a very important part of what makes Planet Earth a pleasant environment for humans, other animals and plants.

# The Environment

But the weather is starting to change because humans are doing things that are causing damage to the environment.

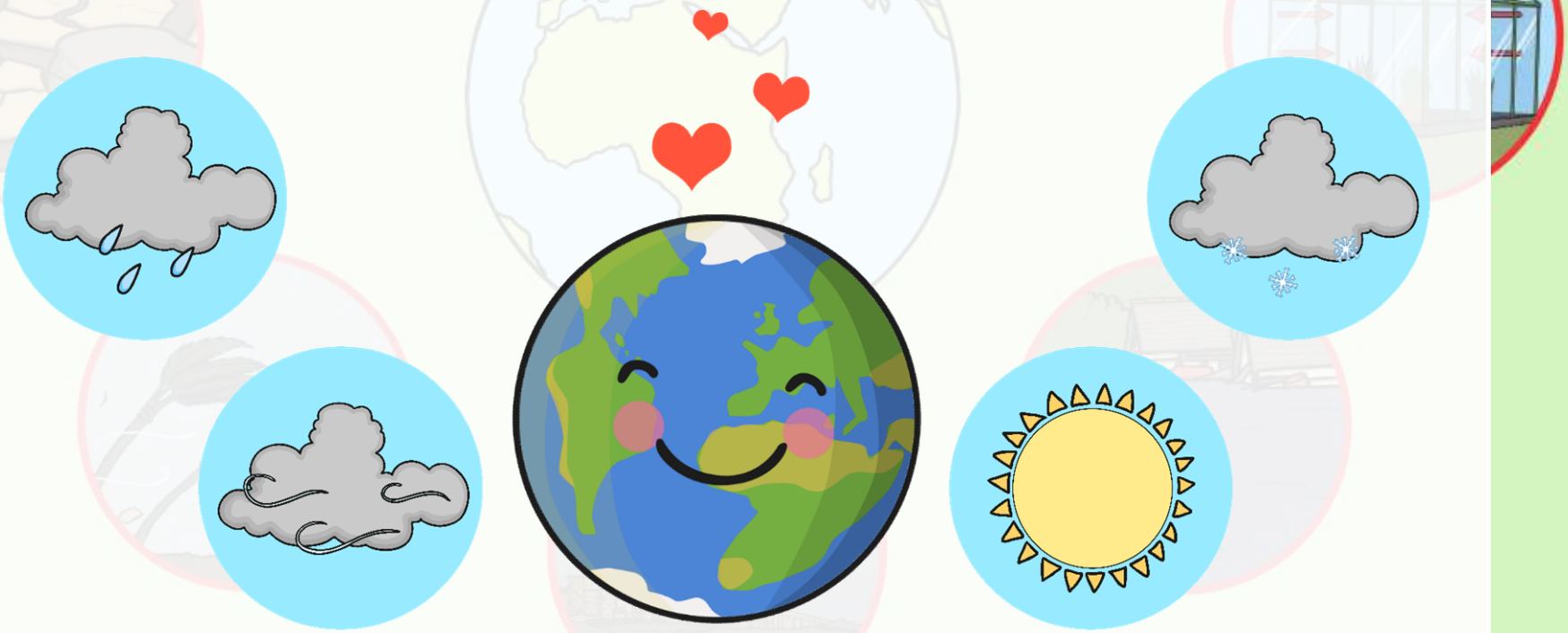
# The Environment



The sun keeps us warm. It gives us energy so that plants can grow. These plants give animals their energy when they eat them. The rain brings water for animals to drink and plants to absorb through their roots.

# The Environment

The weather needs to be just right to keep the living things on Planet Earth happy and healthy.



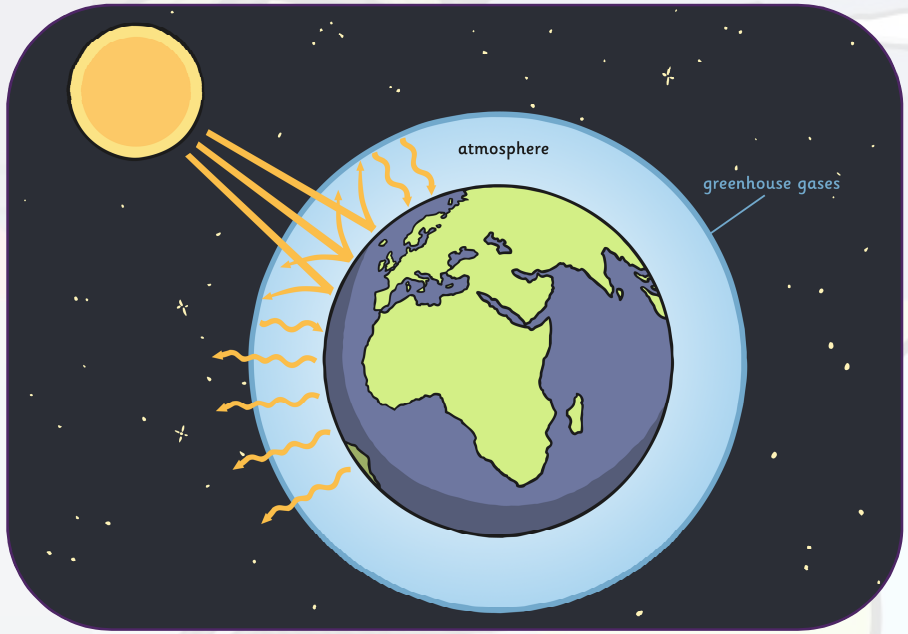
# Greenhouse Gas

Planet Earth is surrounded by a layer of air. We call it the sky. Scientists call it the **atmosphere.**

Outside our atmosphere is a layer of gas that surrounds the Earth.

The gases let the sunlight through to warm us up.

The gases keep some of the heat in our atmosphere, making the earth nice and warm. They let some of the heat back out into space.

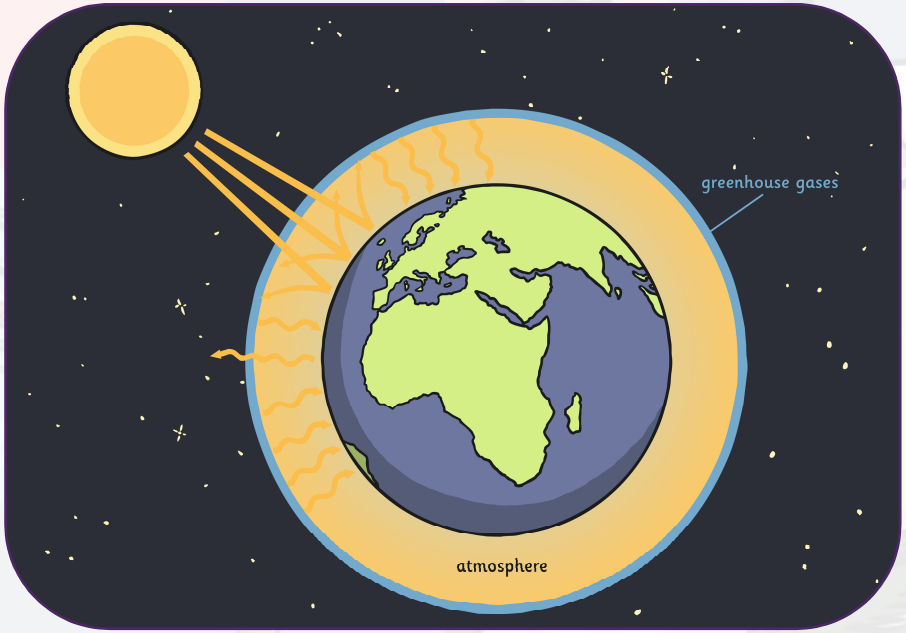



It's like the Earth was wearing the perfect blanket. Not too hot, not too cold. Just right!

# Greenhouse Gas

Recently, the layer of gases has been getting thicker, like the Earth is wearing a thicker blanket!

Less of the heat can escape out into space and more heat is staying in the atmosphere warming us up.

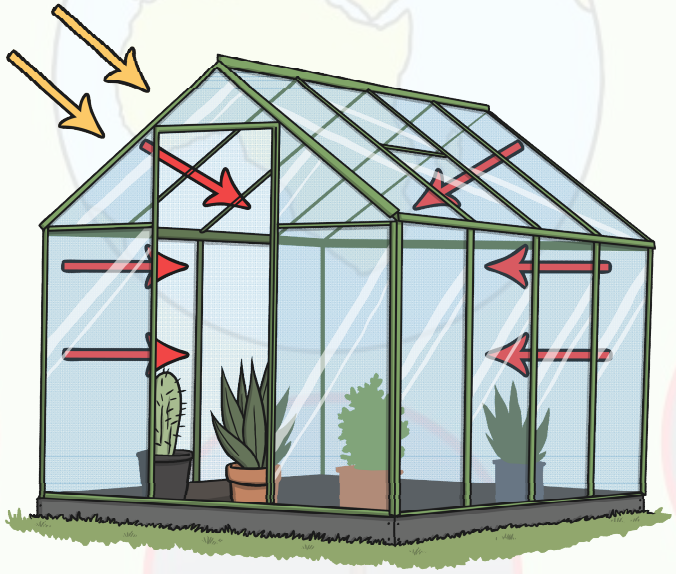



Planet Earth is getting hotter!

# Greenhouse Gas

Have you ever been in a greenhouse?

We call the gases around the Earth **greenhouse gases**, because they behave like the glass in a greenhouse. They let the sunlight in but stop the heat from escaping, trapping it inside.



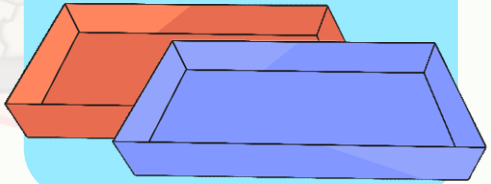
Because of this, Planet Earth is warming up.

# Comparative Test

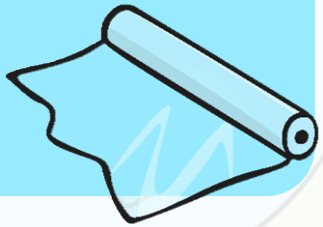
We are going to do a test that shows the effects of greenhouse gases.

What you need:

2 trays

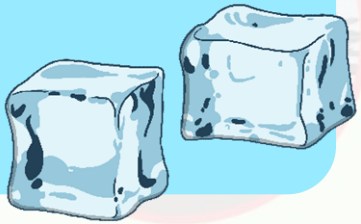


Some cling film

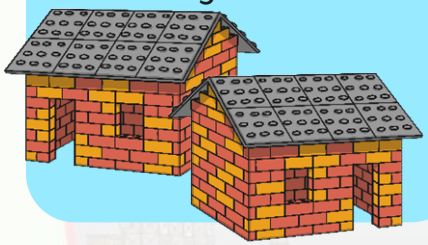


A stopwatch

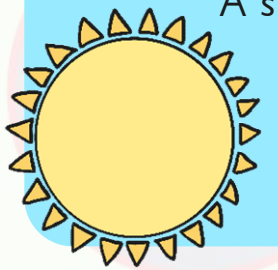

2 blocks of ice



2 building brick houses



A sunny day



# Comparative Test

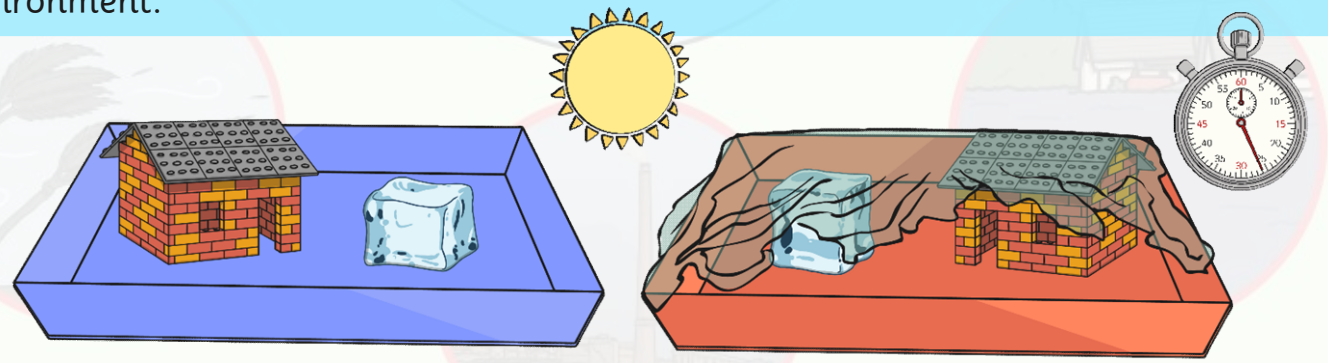
What you do:

Create two mini environments by placing a building brick building in a tray with a block of ice.

Cover one of the mini environments with a layer of cling film. This cling film will act like the extra layer of greenhouse gases that are building up around the Earth's atmosphere.

We are going to leave the trays in a sunny place and start the stopwatches.

Watch the trays carefully and time how long it takes for the ice to melt in each mini environment.



# Comparative Test

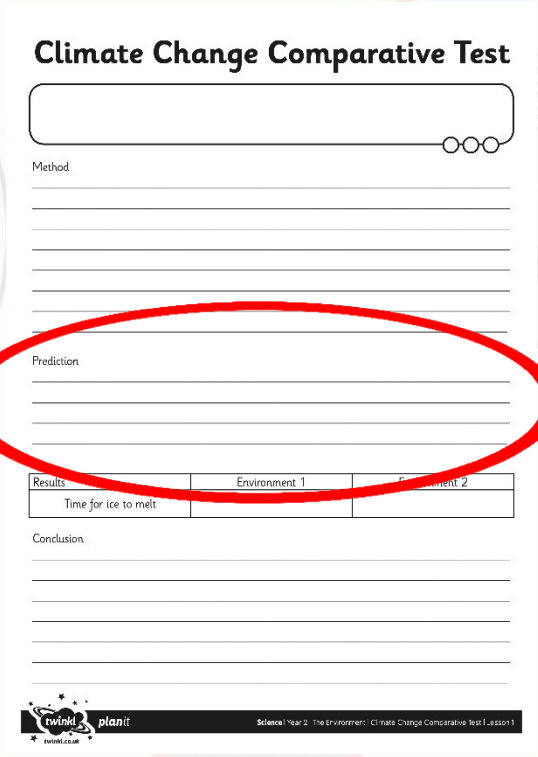
Prediction:

What do you think will happen?

The ice in the covered environment will melt faster.

The ice in the uncovered environment will melt faster.

The ice in both of the environments will melt faster.



Climate Change Comparative Test

Method

Prediction

| Results | Environment 1 | Environment 2 |
|---|---|---|
| Time for ice to melt | | |

Conclusion

# Comparative Test

What happened to the ice in our mini environments?

Look carefully at your measurements.

Which ice melted fastest?

Why did this happen?

Write a sentence to explain what you have found out.


Climate Change Comparative Test

Method

Prediction

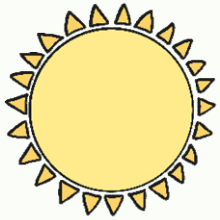
| Results | Environment 1 | Environment 2 |
| --- | --- | --- |
| Time for | | |

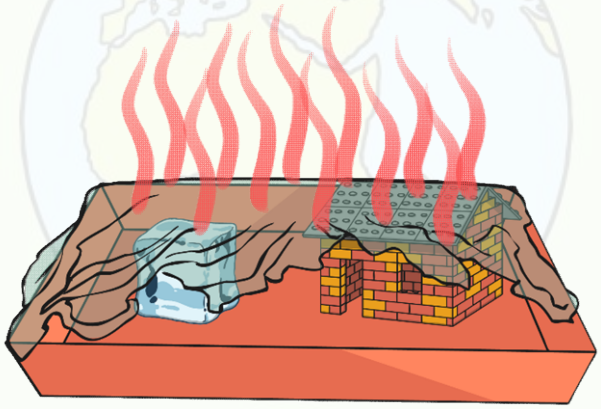
Conclusion

# Climate Change

## The Effects of Climate Change

The mini environment that was covered by the cling film became warmer than the other.





This is because, when it was warmed by the sun, the layer of cling film trapped the heat inside the environment and didn't allow it to escape.

This meant that the temperature inside this environment increased, and made the ice melt faster.

# Climate Change

## The Effects of Climate Change: Global Warming

Because the layer of greenhouse gas that surrounds the Earth is getting thicker, the temperature in our environment is rising too. Sometimes this is called **global warming.**

In many places, the weather is becoming hotter and dryer and there is less rain. There isn't always enough water to go around and some people do not have enough to drink.

In some places, plants will not grow properly because there is not enough rain. This means that there isn't enough food to eat and that some people are going hungry. We call periods when there isn't enough rain a **drought.** Droughts are becoming more common in many places in the world.

# Climate Change

The Effects of Climate Change: Floods and Storms

In some places, the changing weather has led to **floods**, **hurricanes** and powerful **storms**.

Floods and storms are very dangerous and ruin the homes of people and animals.

# Climate Change

The Effects of Climate Change: Melting Sea Ice

In the Arctic and Antarctic Circles, the warmer temperatures have melted lots of sea ice that used to stay frozen all year round. This is very bad for the animals that live there.

Polar bears live in the Arctic. The shrinking sea ice means that it is much harder for them to hunt the seals that they eat.

Some experts think that polar bears could become extinct as the ice continues to melt.

# Climate Change

## The Effects of Climate Change: Rising Sea Levels

As the sea ice melts, it turns into sea water. This means there is more water in the sea and the sea level is rising. As this happens, some cities that have been built on the coast may be flooded and the people who live there will have to find new places to live.

# Climate Change

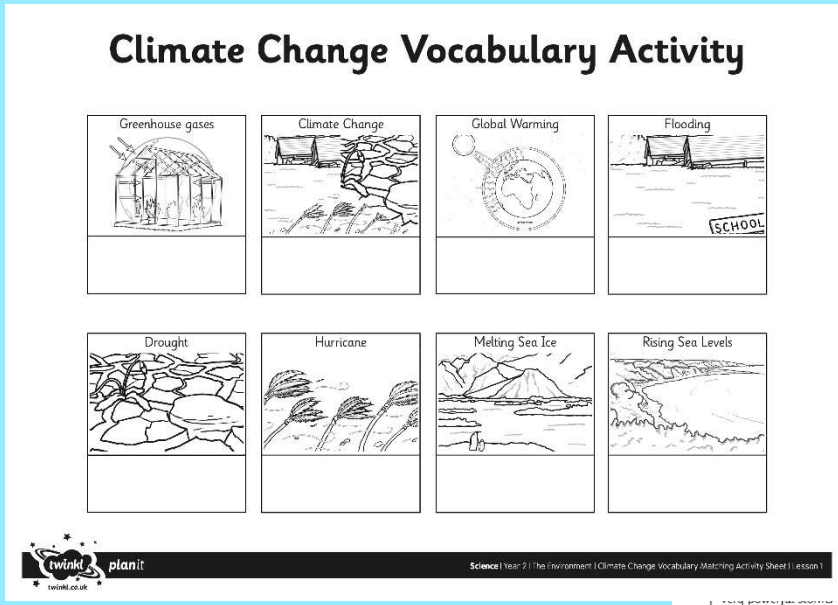
## The Causes of Climate Change: Fossil Fuels

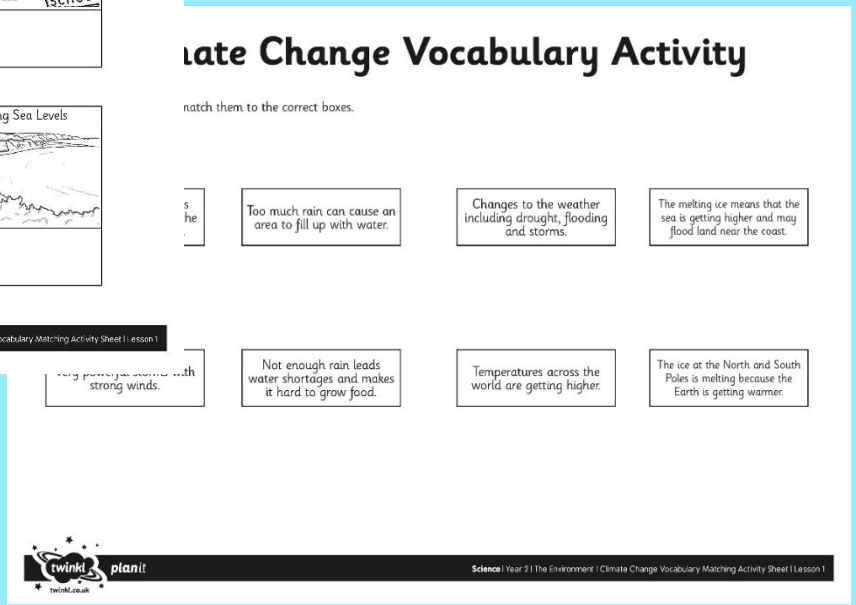
Things that humans are doing to the planet are making more greenhouses gases. Burning fossil fuels like oil and coal adds greenhouse gases to the atmosphere.

We burn fossil fuels to make our gas and electricity and to power our cars, trains and aeroplanes.

Factories burn lots of fossil fuels when they make new things for us to buy.

# Climate Change Vocabulary Activity



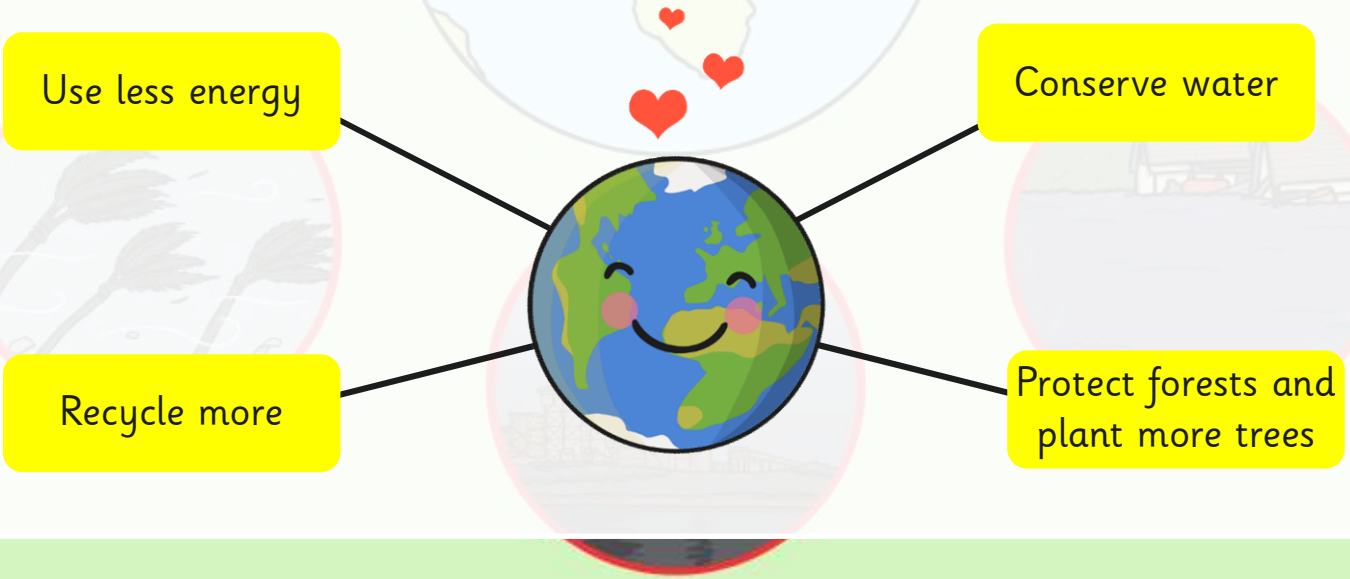



# What Can We Do?

Luckily, there are lots of things that all of us can do to protect our environment from climate change.

In the coming weeks we are going to be finding out lots of ways that we can help the environment and stop climate change from having such a bad effect on Planet Earth. If we all help, we can make a big difference!

Do you have any ideas?



# Aim

- I can measure the melting of ice in a comparative test.
- I can perform a test and draw a conclusion.

# Success Criteria

- I can measure and record the time taken for ice to melt.
- I can compare two different measurements.
- I can set up a simple comparative test.
- I can draw a conclusion from the results of a comparative test.


twinkl