

Extreme Earth

Learning Objective:

To explore how human activity can affect climate change.

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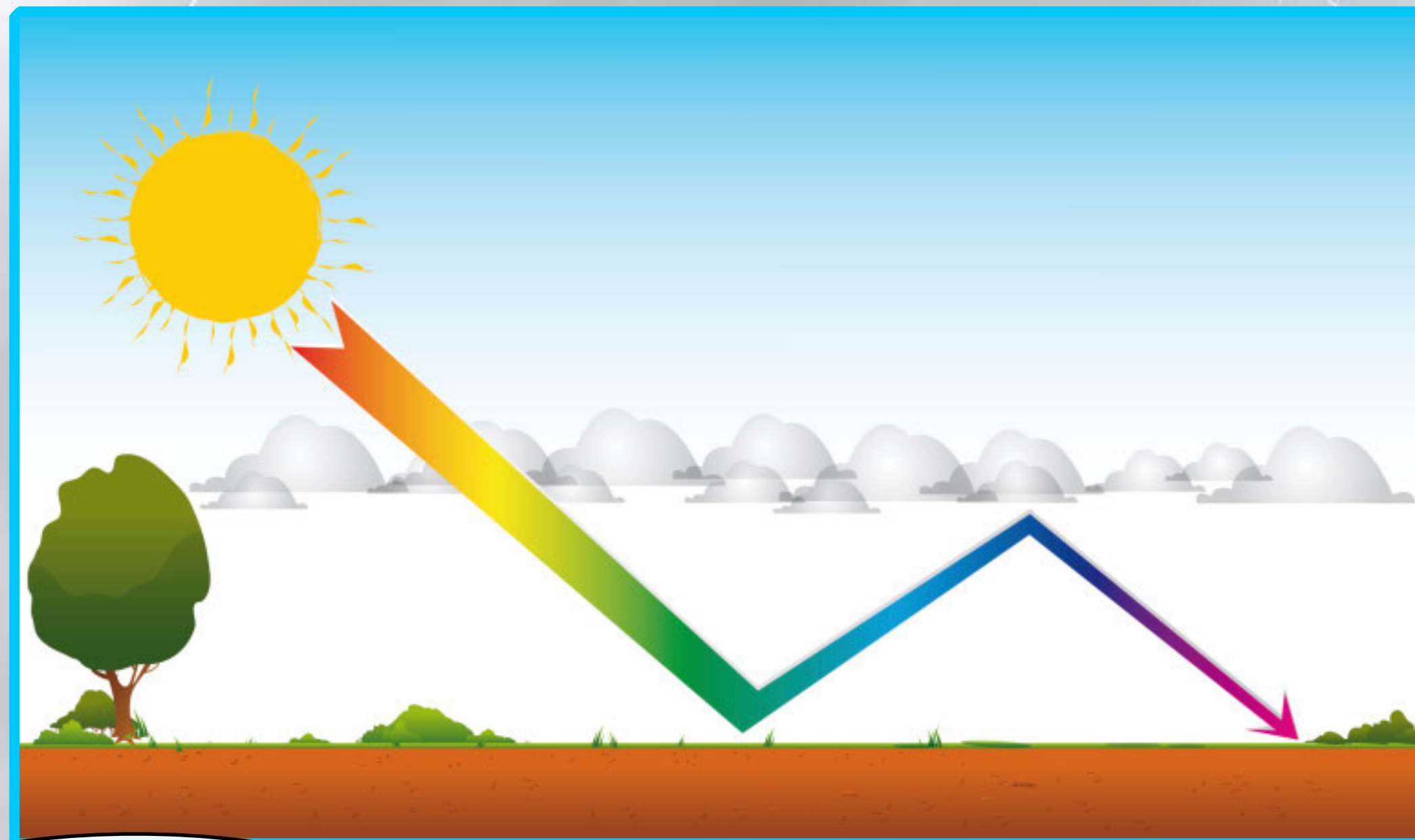
Have you heard about
climate change in the
news?

What does this
mean?

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We live on a unique planet. The **atmosphere** surrounding the globe enables life to flourish on Earth. All living things rely on **gases**, such as oxygen and carbon dioxide, in the atmosphere as well as the way the atmosphere regulates the **heat** of the planet. It both protects the Earth from the strongest rays from the sun whilst also retaining heat. Without an atmosphere, heat would just drift off into space at night. Instead, most of the heat is trapped under the atmosphere. This is known as the **greenhouse effect** because it lets heat in without letting it out again, just like a greenhouse.



Greenhouse gases are gases that retain heat from the sun in the atmosphere. This causes the temperature on Earth to rise. This is how the greenhouse effect causes **global warming** and **climate change**.

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Temperatures on Earth have always been subject to natural changes. Some periods in history have been hotter or colder than our temperatures now. However, scientists believe that human activity is now causing the globe to heat up because we are producing more carbon dioxide (a greenhouse gas) than ever before.

We are dependent on fossil fuels to power our modern lifestyles. We use these to fuel vehicles such as cars and aeroplanes, as well as powering our electricity. Using all these fossil fuels pumps more carbon dioxide into the atmosphere which adds to the greenhouse effect.



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There are many aspects of modern life that are causing climate change. Methane is another greenhouse gas that is produced in greater quantities than before.

There is a high demand for beef which means more cattle are bred. Cattle produce millions of tons of methane each year.



Food waste produces methane. All the rubbish in tips and landfills produces lots of methane if it is left or carbon dioxide if it is burned.

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The increase in carbon dioxide in the atmosphere is intensified by **deforestation**. Trees play a large part in replenishing the Earth's oxygen and absorbing carbon dioxide. Rainforests are being destroyed faster than they are being replenished which further imbalances the greenhouse gases in the atmosphere.



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Many scientists predict that global warming will have a catastrophic effect on the Earth. One of the main concerns is the melting ice in the polar regions. This will cause sea levels to rise and will cause devastation for low-lying countries.



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Scientists predict that in the next few hundred years, global warming will cause the weather to become more extreme. This will mean more flooding and more tropical storms.



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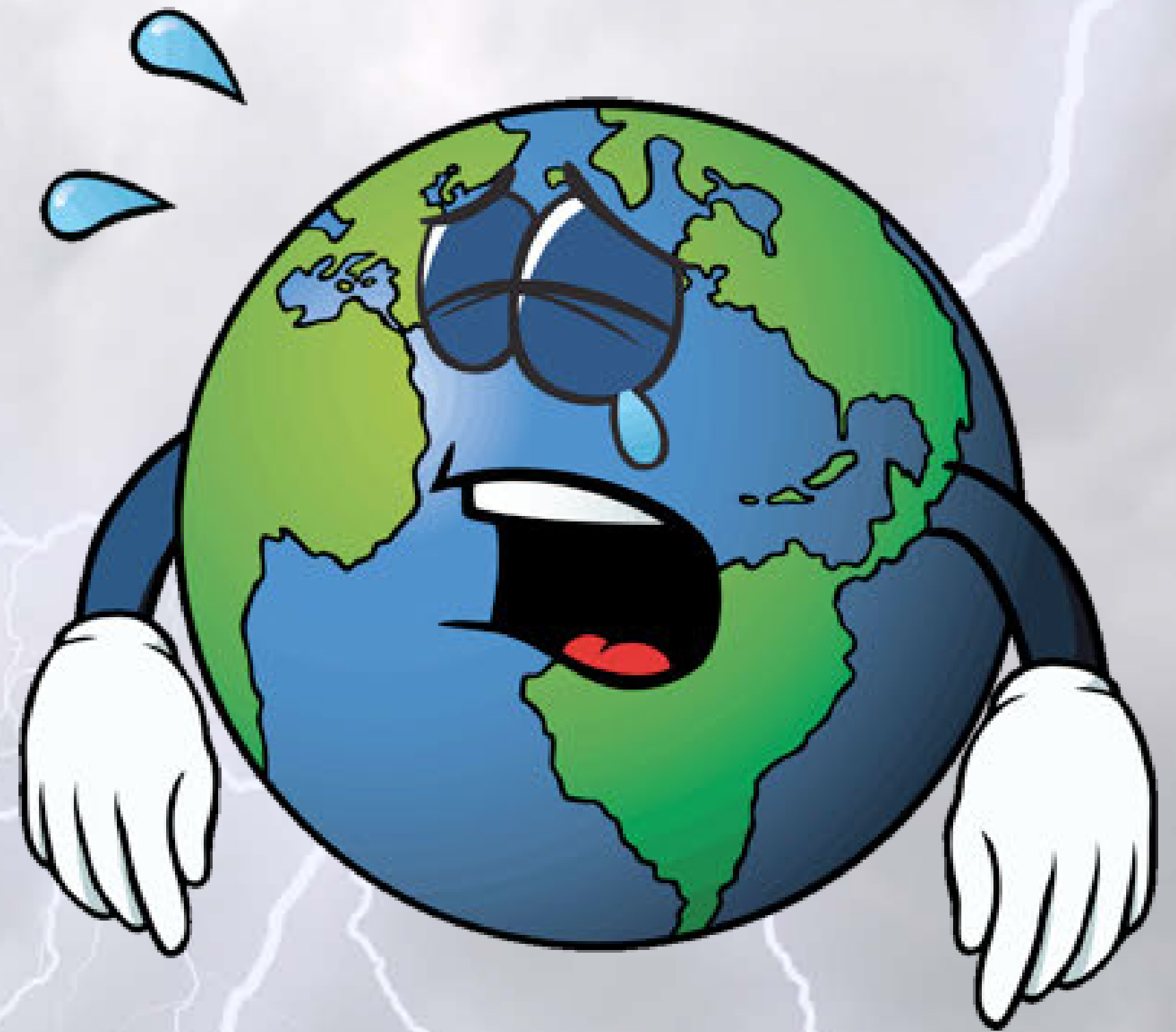
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If the climate continues to get warmer, some areas that are already hot and dry will become even hotter and drier, making it difficult to sustain life. This means many species of animals and plants will become extinct which may have devastating effects on nature's balance.

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What things do you think we personally can do to try and combat climate change?

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People who are concerned about climate change try to reduce their **carbon footprint**. This involves reducing the amount of carbon dioxide that is put into the atmosphere as a result of personal activities.



Even small actions can vastly reduce your carbon emissions across a year. Let's have a look at some of the ways you could reduce your carbon footprint...



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Reducing waste

One thing everyone can do is reduce the amount of waste they produce. Reusing and recycling not only helps reduce the amount of rubbish in landfills but it also means new things do not have to be made. Try to keep objects for as long as you can by mending them instead of throwing them away.



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Travel

Reducing the amount you use a car will reduce your carbon footprint. If it is only a short journey, walk or cycle instead of using a car. If you have to go on a longer journey, take a bus or train so that lots of people are using the same vehicle. If you have to take a plane, explore their carbon offsetting schemes.

If you have to drive to school, try to organise a carpool system. This means that you have fewer cars on the road.



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Keep cool!

Turning the thermostat down by just one degree saves 235kg of carbon dioxide emissions every year. Do you think your family would agree to turning your heat down by one notch? You can always wear a jumper! Not only will you reduce your carbon footprint but you will save money on your heating bill too.



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Turn it off

Sometimes when we turn electrical appliances off, we are only putting them on stand-by. This means they look like they are off but they are still using power. Making sure your electronic devices are off will greatly reduce your carbon footprint.



Turning lights off when you leave a room will also reduce the amount of electricity you use. The less electricity, the less your carbon footprint will be.

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Eat local

Eating food that is locally produced means that it does not have to be imported over long distances. This will reduce your carbon footprint because the food you eat would not have had to travel on planes, boats and lorries, all of which give off high emissions.

Eating less meat is also beneficial because animals produce a lot of methane. Choosing a vegetarian option will reduce your carbon footprint.



Shopping at your local farmers' market is a great way to find fresh, local produce

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Which of these
actions to reduce your
carbon footprint will you
try?

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