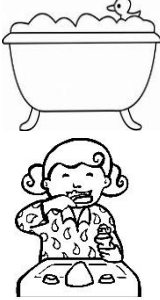



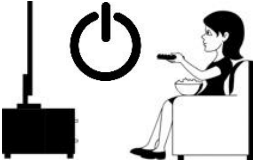

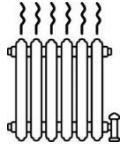






Teachers Notes (2)

Ways we harm creation and contribute to climate change

Climate Change Bingo

Action	Notes
<ul style="list-style-type: none"> Wasting water 	<p>Did you know that a soak in the bathtub uses 75 litres of water, but a quick shower needs just 30 litres.</p> <p>Leaving the tap running while you brush your teeth wastes water. Saving water also saves electricity because water is pumped to your home and heated using electricity.</p>
<ul style="list-style-type: none"> Buying bottled water 	<p>Most people who buy bottled water have access to clean drinking water virtually for free from a tap in their home. Scientists estimate the energy required to produce bottled water, including the energy required to manufacture plastic, fabricate the plastic into bottles, process the water, fill and seal the bottles, transport the bottles, and chill the bottles for use is roughly 2,000 times the energy required to produce tap water.</p> <p><small>(Gleick, P.H. and Cooley, H.S. "Energy implications of bottled water." <i>Environmental Research Letters</i> 4 (2009) 014009 (6pp).)</small></p> <p>Did you know that around 1 in 9 people across the world don't have access to clean water. That's a total of 780 million people who can't meet this most basic need.</p> <p>In 2017, the 'edible water bottle' was invented. It is a water pod made from seaweed extract, it can even be eaten after use! More than 30,000 of these new water pods were used in the 2019 London Marathon.</p>
<ul style="list-style-type: none"> Using the car too much 	<p>Transport accounts for almost a third of our carbon footprints. If everyone in Scotland drove just five miles less each week, over the course of a year that would be equivalent to taking 70,000 cars off the road.</p>
<ul style="list-style-type: none"> Over consumption of meat 	<p>Livestock accounts for about 15% of manmade greenhouse gas emissions. Producing beef, lamb and dairy products are especially bad for the environment because they use a lot of animal feed and they produce methane gas (<i>you might not think that a cow fart could produce much methane gas, but there are 1.5 billion cows in the meat and dairy industry and that's a lot of greenhouse gas!</i>). Also, it takes up a lot of land and water that could be used to produce different types of food for people more efficiently.</p>

<ul style="list-style-type: none"> Leaving electronics on stand by 	<p>Leaving your games console, TV etc on stand-by wastes electricity. In fact, some games consoles, use almost as much energy when in standby as they do when in full use. <i>(npower 2016)</i></p>
<ul style="list-style-type: none"> Not turning off lights 	<p>Most of us will have electric lights in our homes. The energy we use in our homes through heating and electricity accounts for almost a third of our carbon footprints. Using energy saving bulbs can make a difference. They not only use less energy, they also last longer producing less waste.</p>
<ul style="list-style-type: none"> Leaving heating on in the house 	<p>The energy we use in our homes through heating and electricity accounts for almost a third of our carbon footprints. Did you know that 1.2 billion people in the world don't have access to electricity at all.</p>
<ul style="list-style-type: none"> Buying clothes you don't wear Buying fast fashion or single wear clothes 	<p>Millions of people work in the fashion industry around the world. From workers in farms growing cotton and producing silk, to the factories that sew and make our clothes. But often the people who make our clothes are not treated or paid fairly.</p> <p>A 2016 survey of 219 fashion brands around the world found that only 12% of companies could show they were paying garment workers at the legal limit. By not paying people fairly, fashion companies are keeping workers trapped in extreme poverty around the world.</p> <p>As well as the human cost of fashion production there is an environmental cost too. It takes a huge amount of water and energy to make every single item of clothing. Did you know that it takes 2,720 litres of water to produce one t-shirt – that's how much a person would normally drink over a 3 year period!</p> <p><i>(https://www.fashionrevolution.org/about/get-involved/educator/education/)</i></p>
<ul style="list-style-type: none"> Wasting food 	<p>Food makes up about a fifth of the average Scot's carbon footprint. The food system uses energy to harvest, store, process, package and transport the food that ends up on our plates. This system is very wasteful. Around the world, we already grow more than enough to eat for everyone, but a lot of people still go hungry.</p> <p>Around 7 million tonnes of food is thrown away by households in the UK every year, and most of it could have been eaten. Most of that food</p>

	waste ends up in landfill sites where it rots and releases methane (a greenhouse gas) which contributes to global warming. If we all stopped wasting food that could be eaten, the benefit to the planet would be the equivalent of taking 1 in 4 cars off the road.
<ul style="list-style-type: none"> Dishwashers 	Most dishwashers today do use less water than hand washing dishes. However, they require energy in homes (electricity or gas) to run them. But, if we run the dishwasher only when fully loaded, don't rinse plates under the running tap first, and choose an eco-setting or lower temperature this wastes much less water and energy.
<ul style="list-style-type: none"> Flying 	Flying from Glasgow to London has a carbon footprint four times higher than taking the train. The same journey by large four wheel drive is nine times worse than the train if there's just one person in the car.

Other ways we harm creation and contribute to climate change

Action	Notes
<ul style="list-style-type: none"> Not taking steps to reduce our carbon footprint 	Our carbon footprint is shorthand for the impact our daily lives have on the environment. Almost everything we do has a carbon footprint – but some things are more responsible for our carbon emissions than others. Carbon emissions contribute to climate change.
<ul style="list-style-type: none"> Deforestation 	Forests absorb huge amounts of carbon dioxide – a greenhouse gas – from the air, and release oxygen back into it. The Amazon rainforest is so large and efficient at doing this that it is often called 'the lungs of the Earth'. But, many rainforests are being cut down to make wood, palm oil and to clear the way for farmland, roads, oil mines, and dams.
<ul style="list-style-type: none"> Burning fossil fuels for energy 	Over the past 150 years, industrialised countries have been burning large amounts of fossil fuels such as oil and gas. When we use/burn these fuels carbon dioxide (CO ₂ – a greenhouse gas) is released into the atmosphere. This process creates an invisible 'blanket' around the Earth, trapping heat from the sun and warming the Earth. With more and more CO ₂ in the atmosphere this 'blanket' has thickened and more heat is being trapped inside and causing global warming - this is known as the "Greenhouse Effect".

	<p>The Earth has warmed by an average of 1°C in the last century, and although that might not sound like much, it means big things for everyone who calls the Earth home.</p>
<ul style="list-style-type: none"> • Over using plastics / single use plastic • Not recycling plastic • Polluting the oceans and land with plastics 	<p>Plastic is really useful and we use it every day. But what happens after we throw it away is causing a big problem for our planet. It's thought more than five trillion pieces of plastic are in the world's oceans and it can take years for it to break down because most plastic isn't biodegradable. It doesn't rot, like paper or food, so instead it can hang around in the environment for hundreds of years.</p> <p>Each year, 400 million tonnes of plastic is produced and 40% of that is single-use - plastic we'll only use once before its binned – plastic bottles, plastic bags etc.</p> <p>Birds, fish and shellfish can mistake plastic for food and it can harm them. Each year 100,000 animals in the sea are killed by plastic. In fact, one in three fish caught in the English Channel is also estimated to contain plastic.</p> <p>A recent study has shown that plastic pollution is so widespread in the environment that humans may be ingesting five grams of plastic a week. That's the equivalent of you eating one credit card each week.</p> <p>Did you know that one big food producer, Northern Foods changed the design of its Goodfella's pizza box, and reduced the total weight of plastic packaging by 4,000 tonnes a year.</p> <p>In 2015, Oxford became the first city in the UK to ban food sellers from using non-recyclable food containers.</p>