![ESB logo] **Energy for generations**

How to become a Busy Climate ESBee

Your role in taking climate action

What's inside...

The concept of Sustainability

All life on earth depends on the environment. The natural resources that come from the environment include food, water, plants, and minerals. Sustainability is the idea that humans must interact with the environment in a way that ensures there will be enough resources left for future generations of all humans, animals and plants.

ENOUGH FOR ALL, FOREVER.

Ecosystem

An ecosystem is a community of organisms and their environment, including non-living things. Ecosystems can be as small as your garden, or as large as an ocean and all organisms have specific vital needs such as food, water and air in order to survive. Humans are part of the world's ecosystem.

Carbon Footprint

Your carbon footprint is the amount of carbon dioxide released into the air because of your own energy usage, such as transportation, electricity and food. Your choices make a difference – so turn off the lights and the TV when you leave the room to reduce your carbon footprint!

The Greenhouse Effect

This is a process which occurs when gases in Earth's atmosphere trap the sun's heat. This makes sure that Earth is a habitable place to live as it warms Earth's surface and the air above it.

Why have we written this document?

Climate change is affecting every person and every other species (both plants and animals) on this planet, climate change is occurring because of human activity. We are also the best placed to do something about it. We can all play a part and help convince those around us, friends and family, to act too.

Who are ESB and why do we care about Climate Change?

We are Ireland's national electricity utility, and an important part of Ireland's history since 1927. ESB has been heavily involved in Ireland's development through the introduction of electricity to homes, schools & businesses. We believe that clean renewable electricity is the best option we have, to help tackle climate change. We live and work in every community around Ireland, so this is a big deal for all of us. Watch out for our familiar yellow vans all around the country!

Activity 1

Grab your pencils & crayons and colour in this page

Resource Use and Circular Economy

What are resources?

Resources are things we use every day—like water, trees, metals, and fuel. We need them to make clothes, toys, food, and even electricity! There are two types of resources:

- **Renewable resources**: These can grow back or be replaced, like trees and wind energy.
- **Non-renewable resources**: These can run out, like oil, coal, and metals.

Why do we need to use them wisely?

If we waste resources, the Earth can run out of important things. Using too much means:

- **More pollution**
- **More rubbish**
- **Less for animals and plants**

That's why we need to reduce waste and reuse what we have.

What is a Circular Economy?

Imagine a circle that never ends! In a circular economy, instead of throwing things away, we:

Reduce what we use

Reuse items

Recycle materials into new products

Repair broken things

This helps keep resources in use for as long as possible.

Why is it better than a Linear Economy?

Linear Economy:

Take

Make

Use

Waste

Circular Economy:

Take

Make

Use

Reuse

Repair

Recycle

Back to Use

Circular economy means less rubbish, less pollution, and a healthier planet.

Activities and Fun

Activity 2: Circular Detective

Look around your home or classroom and find:

1. Something you can **reuse** (like a jar for pencils)
2. Something you can **repair** (like a broken toy)
3. Something you can **recycle** (like a plastic bottle)

Draw them in the boxes below and write one sentence about what you will do!

reuse

repair

recycle

What is Climate Change and how does it affect us?

What causes Climate Change

The Earth's climate is constantly changing between long periods of warmth, such as the period we are living in now, and long periods of cold, otherwise known as Ice-Ages. Human activities are currently interfering with this natural system. The Earth is getting warmer because people are releasing heat-trapping gases into the atmosphere, mainly by burning fossil fuels. These gases are called greenhouse gases. Human activity is releasing more greenhouse gases into the atmosphere than what would naturally occur. The Intergovernmental Panel on Climate Change (IPCC) reports that over 80% of global energy consumption still comes from fossil fuels such as coal, oil and gas.

Mark Phelan

The Greenhouse Effect

Effects of Climate Change

Climate Change caused by elevated levels of greenhouse gases in the atmosphere has led to rising air and ocean temperatures, more severe droughts, melting ice caps, rising sea levels, increased rainfall and greater flooding.

Many people, plants and animals are not able to cope with the changes that are happening so quickly. The main greenhouse gases are carbon dioxide, methane and nitrous oxide. Carbon dioxide (CO_2) is the greenhouse gas talked about the most as more of it is produced than any other greenhouse gas. However, methane and nitrous oxide are also very dangerous as they trap more heat in the atmosphere compared to the same amount of carbon dioxide.

Activity 3

E	S	R	N	C	**P**	**E**	**O**	**P**	**L**	**E**	P	A	U
Q	S	O	L	A	R	P	F	P	P	E	C	L	N
S	A	V	E	C	H	A	N	G	E	P	J	W	Y
G	U	R	I	L	A	P	I	A	S	T	I	C	S
R	R	S	U	I	N	O	B	R	A	C	C	P	G
E	E	F	T	M	M	W	T	A	B	A	B	O	W
E	C	O	N	A	L	E	S	S	D	C	U	L	T
N	Y	O	E	T	I	R	X	N	Z	M	Y	L	U
H	C	T	M	E	P	N	I	K	K	J	T	U	I
O	L	P	N	D	R	W	A	S	T	E	R	T	I
U	E	R	O	R	E	A	H	B	G	O	E	I	L
S	I	I	R	T	D	T	N	N	I	A	W	O	M
E	K	N	I	I	U	E	G	A	S	L	Q	N	S
H	I	T	V	B	C	R	E	U	S	E	I	O	C
F	I	G	N	W	E	A	T	H	E	R	G	T	V
L	V	F	E	L	E	C	T	R	I	C	I	T	Y
E	N	E	R	G	Y	I	U	F	B	M	V	Y	O

Sustainability Wordsearch

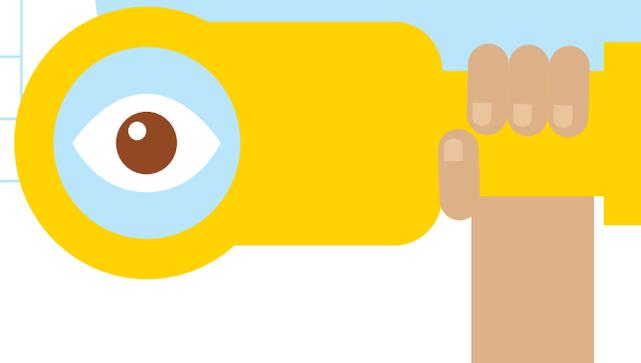|	
People	Pollution
Sustainability	Greenhouse
Water	Reduce
Climate	Reuse
Waste	Recycle
Electricity	Weather
Environment	Gas
Wind	Footprint
Plastics	Change
Power	Solar
Carbon	Energy

Human Rights

United Nations

Human Rights are central to sustainability because a safe, clean, healthy, and sustainable environment is essential for the full enjoyment of basic human rights such as life, health, food and water.

What are Human Rights

Human Rights are important rules to make sure everyone in the world is treated fairly and kindly. Here are some examples of human rights:

The Right to be Safe

The Right to be Healthy

The Right to be Equal

The Right to have a Family

Just like you have rules for your home or school these are the rules for the whole planet. These human rights are for every single person in the world, no matter who they are or where they live. They help make our world a kinder and better place where we all can live happily and safely.

History of Human Rights

On the 10th December 1948 the United Nations adopted the Universal Declaration of Human Rights. This document sets out the basic human rights for everyone in the world. Ireland is a member of the United Nations and all members of the United Nations are expected to respect these basic human rights.

Activity 4

Climate Change Activities

Complete these fun activities to get a better understanding of climate change. Take photos or draw your results.

What you need:

Water ✓
Thermometer x2 ✓
Glass jar ✓
Modelling clay or small toy animals ✓
Low sided container ✓

Global warming is a key component of climate change, and it is caused in part by an enhanced greenhouse effect. Climate change activities like this one show us just what that term means. Place two thermometers side-by-side in a sunny spot. Put one inside a covered glass jar and leave the other one outside. Observe the temperatures after about 20 minutes to see which is higher.

Create a polar bear from modelling clay

1. Fill a container with 3 centimetres of water and freeze the water.
2. Break ice and place a polar bear on ice pieces.
3. Put the container on the window ledge in the sunlight. When the ice starts to melt the polar bears have less room to stand on. This is what happens to the polar bears in the wild when the temperatures increase.
4. Place a thermometer in the water. What happens the temperature? As the ice melts the water warms and holds the heat of the Sun.

Learn more about some of the impacts of Climate Change and what you can do about it.
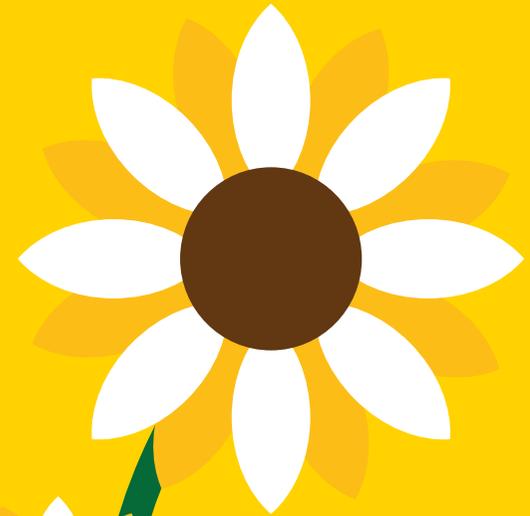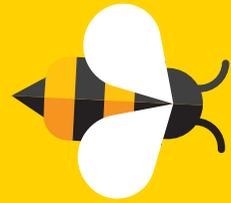
Thomas Walsh

Home

Travel

Food

Waste

Water

Nature

How can we become more sustainable at home?

What is it?

- Home is where we live and share with our communities. The home is our everyday lives. All topics in this workbook tie into the home. We travel from the home, waste, food and water is at home, nature is all around us at home.

- Most houses in Ireland are heated by gas or oil and have petrol or diesel cars. Electricity in our houses can either be created through fossil fuels or renewable energy such as wind, solar, and ocean energy.

How is it impacting / impacted by climate change?

- Humans burn fossil fuels to power cars and other machines, to generate electricity, and to keep buildings warm. Waste gases are released, including carbon dioxide.

- As the human population increases, more fuel is used, and more carbon dioxide is released. Many of us over consume items such as clothing, food, water and technology. This means we buy/use more than we need. Things we don't need can get wasted, go to landfill and create more greenhouse gases.

What can you do?

- Starting with Insulating our homes, this helps keep our houses warm in the winter and cooler in the summer. Turning off the lights when we don't need them saves electricity. Buy fewer products and make sure the products you buy minimise the impacts of climate change.

- Learn how to mend holes in clothes instead of buying new ones. Get a reusable water bottle instead of using plastic bottles. If you spend a lot of money at home to keep your house warm, talk to your parents / family about insulating your home to help keep the heat in and the cold out.

Activity 5

Story Time

If you have access to the book or a movie version of "The Lorax", read or watch it to explore how nature affects the home.

Activity 6

Lights-out Day

With a parent or guardian find your electricity meter at home and read the numbers off the dial or digital display and write it down. Take a reading at the same time the next day. How much did your home use in a day? Do you know what consumed the electricity? Talk about it at home.

Nature / Biodiversity

What is it?

Biodiversity
The meaning of 'Biodiversity' is easier to understand when we break the word down; "Bio" refers to life and 'living things' and "Diversity" means just that: range or variety. The word refers to the huge variety and variation of life that is all around us. The more diversity of living things we have, the better! The environment is stronger, healthier and more resilient when there are lots of different types of plants and animals living in it.

What can you do?

- If your garden is small or you don't have a garden, create window boxes to plant flowers.
- Pollinating insects help many of our foods grow. Plant a mix of native flowers that grow in different seasons to extend the pollen season.
- Avoid pesticides.
- Put a bird bath in your garden.
- Build a bug hotel.
- Cut your grass less often to allow wildflowers to grow.

Clarissa Nardone

Caitlin Boylan

How is it impacting /impacted by climate change?

Biodiversity gives us the air we breathe, provides us with food, medicine, fuel, materials, pollination & natural pest control, and also protects us from soil erosion & flooding.

Climate change is affecting the natural habitats of species and pushing them towards extinction.

When predators become extinct, it can lead to problematic population growth in certain prey species.

How to make a bug hotel:

HERITAGE IN SCHOOLS

An Chomhairle Oidhreachta
The Heritage Council

Kate Dowling

Activities
Nature Walks

Go to your nearest patch of grass and check what insects and other creatures you can find. Check what flowers are growing in your garden.

Try and identify what birds visit your garden.
See if you can find them here;
List of Ireland's Birds - BirdWatch Ireland.

List as many birds as you can from the list that you saw in your garden or local area.

_____   _____

_____   _____

_____   _____

_____   _____

_____   _____

_____   _____

What to look and listen out for...

Great Tit
"Teacher-Teacher-Teacher"

Chiffchaff
"Chiff-Chaff-Chiff-Chiff"

Magpie
"Ker-chock-Ker-chock"

Wood Pigeon
"Take two cows, Teddy"

Blue Tit
"Tsee-tsee-chu-chu-chu"

Food

What is it?

Food is the material that plants, animals and humans need to survive. Good food keeps us healthy, helps us grow and gives us energy for activities.

What can you do?

Buy locally sourced foods to decrease the carbon emissions of transporting from overseas. Only buy foods you will eat so that no food goes to waste.

The best foods to save the planet!

Lentils, tomatoes, tofu, broccoli, nuts, potatoes.

Food chain

A food chain is the order of which living things depend on each other for food.

## Worst foods for climate change!

Worst foods for climate change due to methane emissions or habitat destruction; beef production, palm oil, sugar, dairy products, farmed fish. Ruminating animals (cattle, sheep) burp methane! Natural habitats (such as rain forests) can be destroyed to grow a single crop, such as palm oil, soy or grain.

How is it impacting / impacted by climate change?

Less varieties of fruit and vegetables will be grown as the sunlight will be too strong in some areas to grow certain foods. Wildfires and deforestation can impact on the suitability of land to grow food and the variety of foods available.

Chocolate
Half of the world's chocolate production is sourced from West African countries where rising temperatures can cause crop failure.

Every year, a third of food produced is thrown away

Activity 8

Take a look at the food chain for beef and dairy products

Grain

Grass

Milk

Cheese

Water

Meat
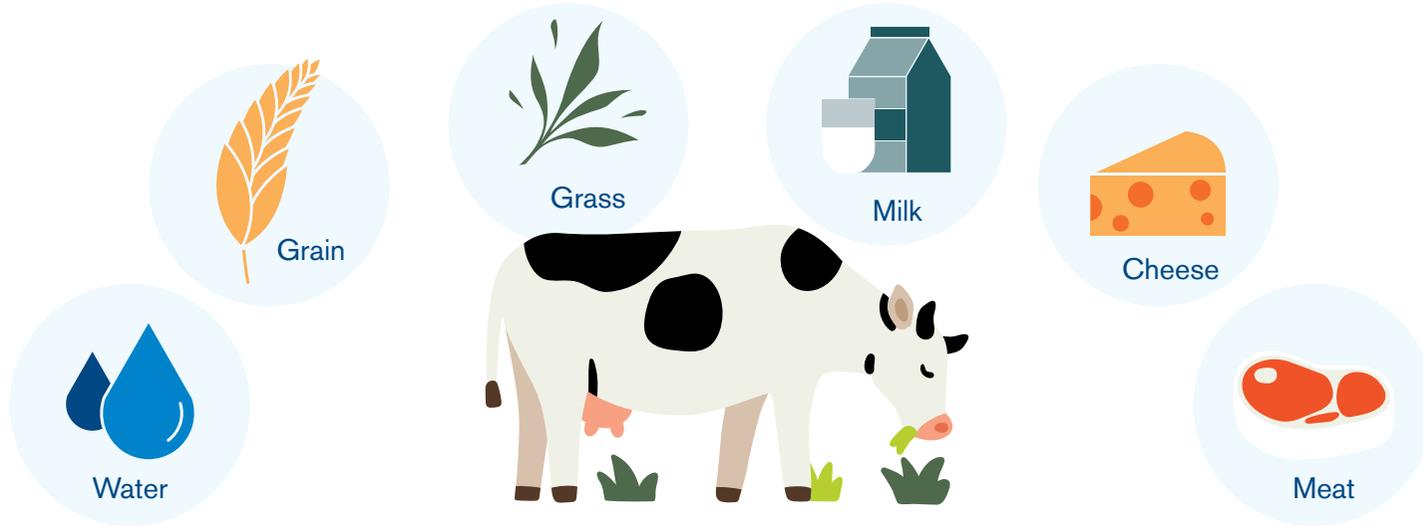
See if you can replicate this for a chicken
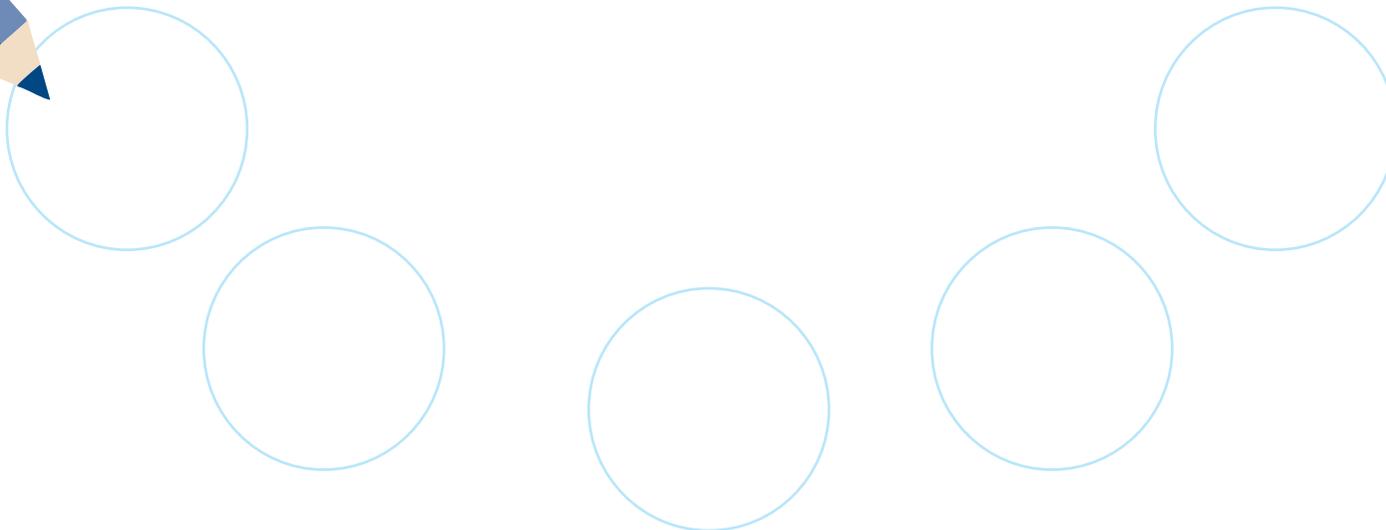
Travel

What is it?

Travel is the journey to get from one place to another. You travel to school and maybe abroad on your summer holidays. Some of your food must travel by plane, ship or truck to get to the shop you buy it in for it to end up in your lunch box. There are many forms of transport such as boat, plane, car, bike, bus and walking.
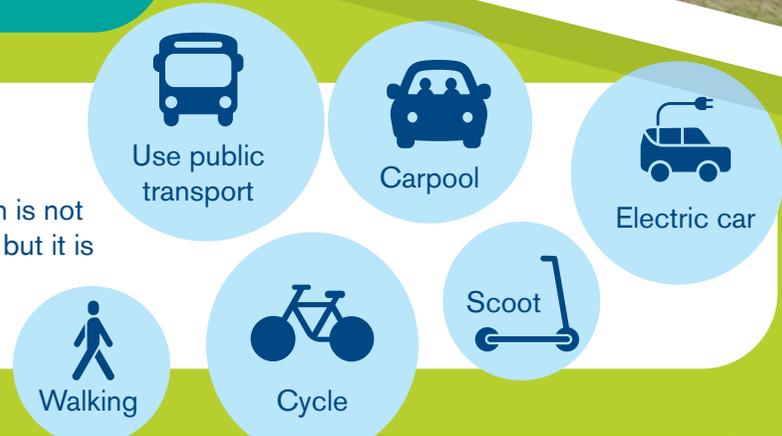
Electric cars

Electric cars are cars that can be plugged in and charged using electricity with no need to use petrol or diesel. They are cheaper to run and much better for the environment and air quality. The more electricity that comes from wind and solar (sun), the cleaner the electricity becomes.

What can you do?

Walking and cycling more often is not only better for the environment but it is also good for our health.

Use public transport

Carpool

Electric car

Walking

Cycle

Scoot

How is it impacting / impacted by climate change?

Most cars in Ireland are petrol or diesel. In 2024 heat accounted for 38% and transport made up 37% of Ireland's carbon dioxide emissions. Production of cars and other vehicles release greenhouse gases from the factory. Extracting fossil fuels to run our vehicles can damage local ecosystems as oil spills can happen when transporting oil by ship or through pipelines. These gases also make air quality worse to breathe.

How does car pollution effect the environment video

Activity 9

Record the distance your travel to school, your sports activity, shopping, visit your grandparents, friends etc for 1 week.

Enter the total kms for 1 week into the emissions converter Car CO_2 emissions calculator – Carbon offset car | myclimate to record your transport emissions. Ask parents or adults for help with this.

Day of the week	Walk	Cycle	Car	Bus	Train/tram
Monday	km	km	km	km	km
Tuesday	km	km	km	km	km
Wednesday	km	km	km	km	km
Thursday	km	km	km	km	km
Friday	km	km	km	km	km
Saturday	km	km	km	km	km
Sunday	km	km	km	km	km

Waste

What is it?

Waste is something we throw away or get rid of what we don't use. An example of waste could be plastic wrappers and out of date food.

How is it impacting / impacted by climate change?

Plastic waste produces greenhouse gases at every stage of its lifecycle. Waste management such as transportation and incineration are a huge contributor to the production of greenhouse gases.

What can you do?

Reduce reuse recycle repurpose

Reducing is the most important step in this process. Refuse to buy items you do not need. Buy items of better quality that will last longer so you do not need to replace it as often. Buy clothes and furniture from second-hand stores and give away / donate unwanted items instead of dumping them. Think of new uses for items you don't need any more (Repurpose). Ask people what present they want for Christmas instead of buying something they will not use. Buy items with less packaging that use cardboard instead of plastic.

Food waste video

FOOD WASTE EXPLAINED

Alternatives to Single-Use Products

Plastic bottles - **Reusable bottle**

Straws - **Metal, bamboo and paper straws**

Plastic Cling-film - **Lunchboxes**

Balloons – **Try some other activity to celebrate such as flying kites, planting a tree or decorating with paper or cloth bunting, flags or streamers.**

Plastic book covers - **Wrapping paper**

What can go in each bin?

Rubbish bin

Tissue, wrappers, old markers, crisp/popcorn packets, plastic cutlery (dirty), tinfoil (dirty), cling-film, plastic gloves, disposable face masks, straws, disposable cups, and empty frubes packets.

Recycling bin

Empty plastic bottles, scrap paper, clean yogurt pots, clean milk cartons, clean juice cartons, toilet roll core, card/cardboard, plastic cutlery (clean), drinks can, rigid plastic packaging, tins (e.g. tuna or beans tin), clean tinfoil.
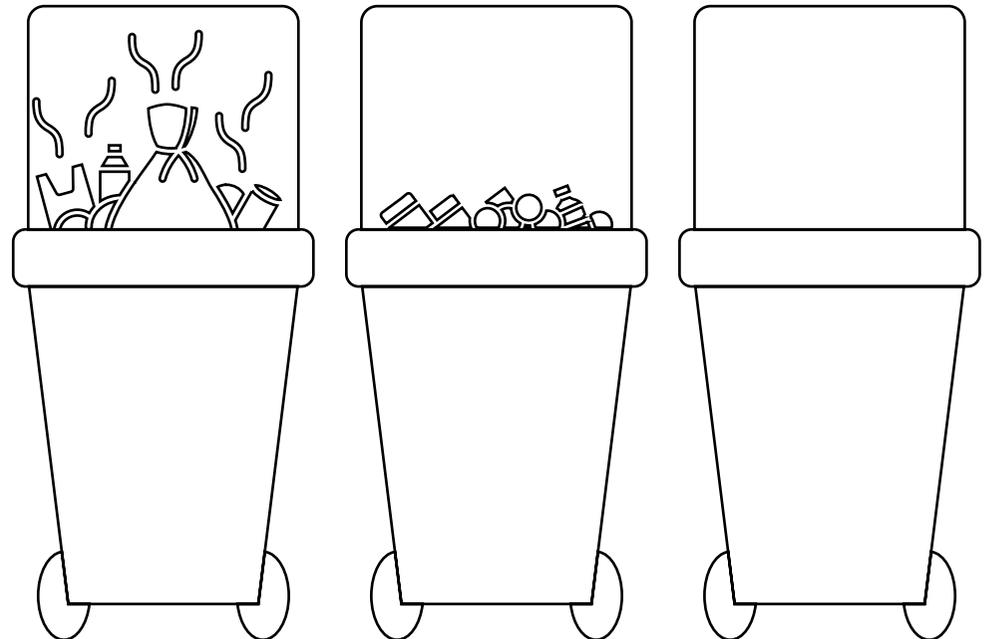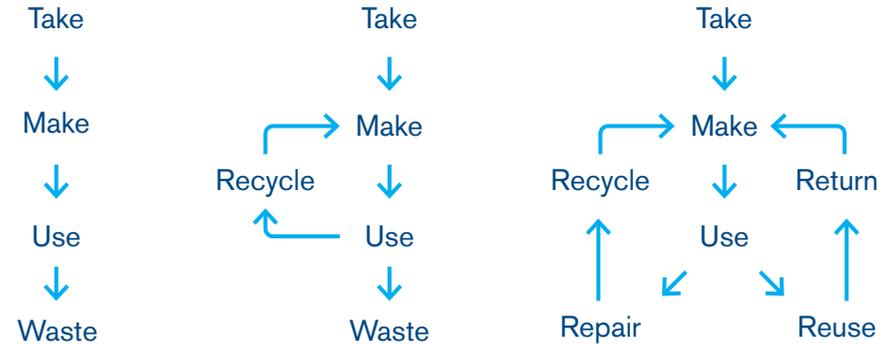
Compost

Apple core, banana skin, orange peel, other fruit/peel, pencil shavings, leftover lunch, egg shells, kitchen roll/tissue, teabags and coffee compostable cups.

Activity 10

Colour the bin you think is the best Green, the second best Yellow and the worst Red.

Take
↓
Make
↓
Use
↓
Waste

Take
↓
Make → Make
Recycle ↓
Use ← Use
↓
Waste

Take
↓
Make
Recycle → Make ← Return
↓
Use
Repair ↙ ↘ Reuse

Activity 11

Bin-Sorting Game

In the table below there are 3 columns labelled Rubbish, Recycling and Compost.
Record waste in your house for a week. Sort these items into each column you think they belong in.
At the end of the week come up with 3 ways in which you can reduce waste.

Rubbish	Recycling	Compost

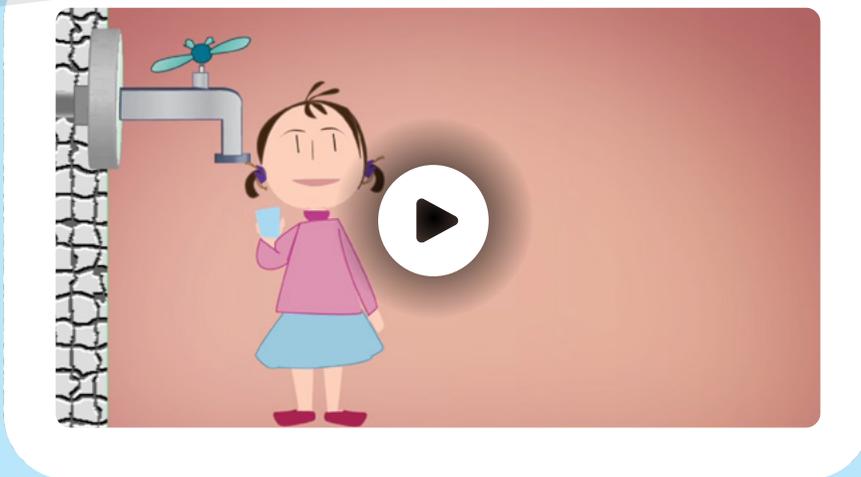### 3 ways to reduce waste in my house

1

2

3

Water

What is it?

Water makes up 50-75% of the human body. Only 2-3% of water on earth is fresh water, but not all of that is suitable for drinking. The rest is sea water.

How is it impacting / impacted by climate change?

Climate change will make heavy rain downpours more frequent. Due to the rising temperatures the sea levels will rise, and flooding will be more common. As the rain will become more unpredictable it will also cause drought. According to UNICEF by the year 2025 up to half of the world's human population will live in water-scarce areas.

What can you do?

- Always turn off taps so they don't drip and get dripping taps fixed.
- Turn off taps while brushing teeth
- Water plants and flowers at night when it is cooler.
- Put leftover ice from glasses into house plants containers.
- If you see a leak, tell an adult straight away.
- Take short showers instead of baths
- Collect rainwater to use for plants

The journey water takes to get to our taps

The Water Cycle

Activity 12

Draw the Water Cycle
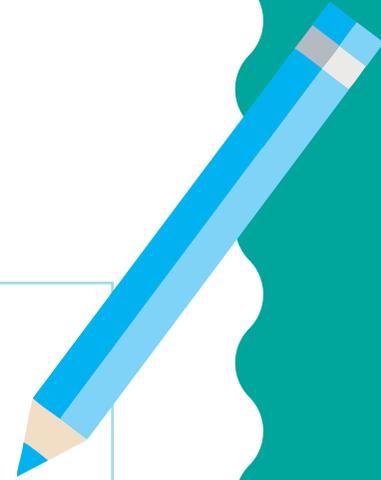
Activity 13

Learning check-in time. If you have paid really close attention,
You should be able to answer the questions below.

Good luck!

Who are ESB?

What is sustainability?

What is a Circular Economy?

What should we do instead of buying a new jumper if it rips?

What can you do to prevent food waste?

What is a food chain?

Name 3 things you can do to save water.

List 3 ways to get to school.

What positive things does biodiversity provide us with?

Explain the greenhouse effect.
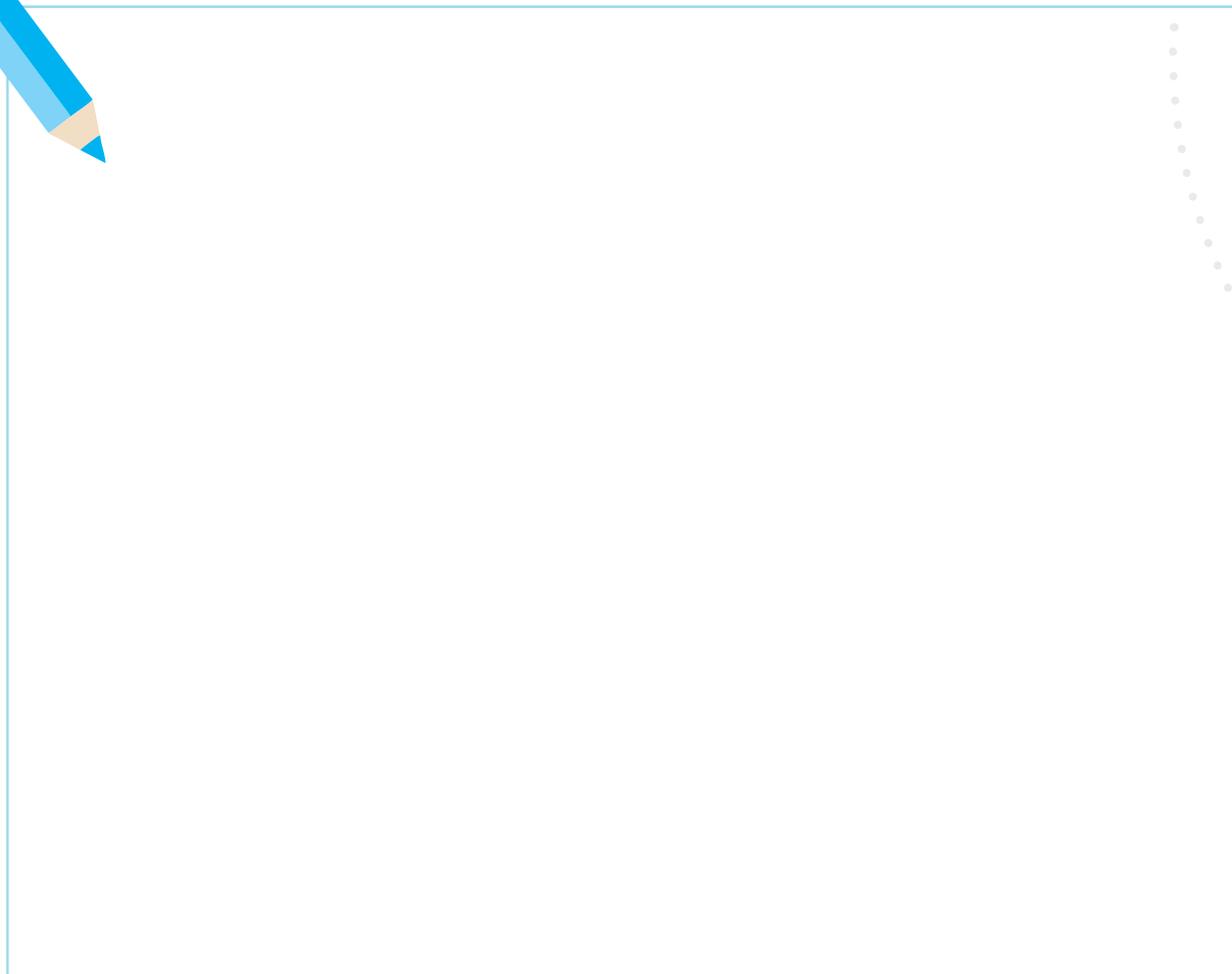
Name 2 forms of renewable energy?

Which is more important reduce, reuse, repurpose or recycle?

What percentage of the body is made up of water?

Activity 14

Design a new ESBee mascot on paper.
Be as creative as possible.

For more information on sustainability in ESB please check out our educational resources.
ESB Sustainability Resources (esb.ie)

ESB Energy for generations