



Unit 3:

Circular Economy

Generation Green Schools
Primary schools 2026



What is waste?

Let's think together!

Waste is anything we:

Throw Away

**Don't Use
Anymore**

Don't Need

Can you name different types of waste?

Types of Waste



How many of these did you get?

Waste	Example
Food waste:	Potato peelings, banana skins, orange peel, left over or out of date food
Paper and cardboard	Packaging, worksheets, newspapers
Plastic	Bags, bottles, packaging, straws, food wrappers
Metal	Aluminium cans, steel, and tin
Glass	Bottles, jars, windows
Electronics	Old phones, computers, televisions, batteries
Man-made Materials	Rubber, polyester etc. used for clothes and shoes

What Happens to Our Waste?

Some waste:

Goes into bins



Goes to recycling



Ends up in landfill



But not all choices are equal...

What Should We Do With Our Waste?



Some ways of dealing with waste are **better for the planet** than others.
From best to worst:

- **Don't create waste** if possible
- **Reuse** things again
- **Recycle** materials
- **Throw away** (last choice)

Big idea – how we use resources

Many things we use:

Come from the Earth

These are materials that rely on natural resources being extracted.

Tin/Aluminium for cans is mined from the earth.

Take a lot of energy to make

These items require significant energy during production.

Plastic bottles: producing new plastic from oil uses a lot of energy.

Get thrown away too quickly

These are items used for a very short time before disposal.

Single-use coffee cups: often used for minutes, then binned.

This can harm nature

What match the words to their definitions

Word	Definition
 Prevention	Getting something useful back from waste, like turning food scraps into energy or compost instead of throwing them away.
 Recycling	Stopping waste from being made in the first place. E.g. Only printing what you need or bringing a reusable bottle, so you don't buy plastic ones.
 Disposal	Using something again instead of throwing it away. Like using a jam jar as a pencil pot.
 Re-use	Throwing waste away when it can't be used again. This often means it goes to landfill or an incinerator.
 Recovery	Turning old materials into new things. Example: Melting old plastic bottles to make new ones.

Linear economy – what we're used to



In a linear economy:

1. We take materials from nature, quicker than earth can remake them
2. We make things
3. We use them
4. We throw them away

**This creates lots of waste and harm to the environment.
What can we do to prevent this?**

Waste quiz?

Sort these items:

RECYCLE

REUSE

REPAIR

Glass Jar

T-Shirt

Broken Toy

Shoes

Bicycle

Cereal Box

Gift Bag

Plastic Bottle

Old Newspaper

European Environment Agency



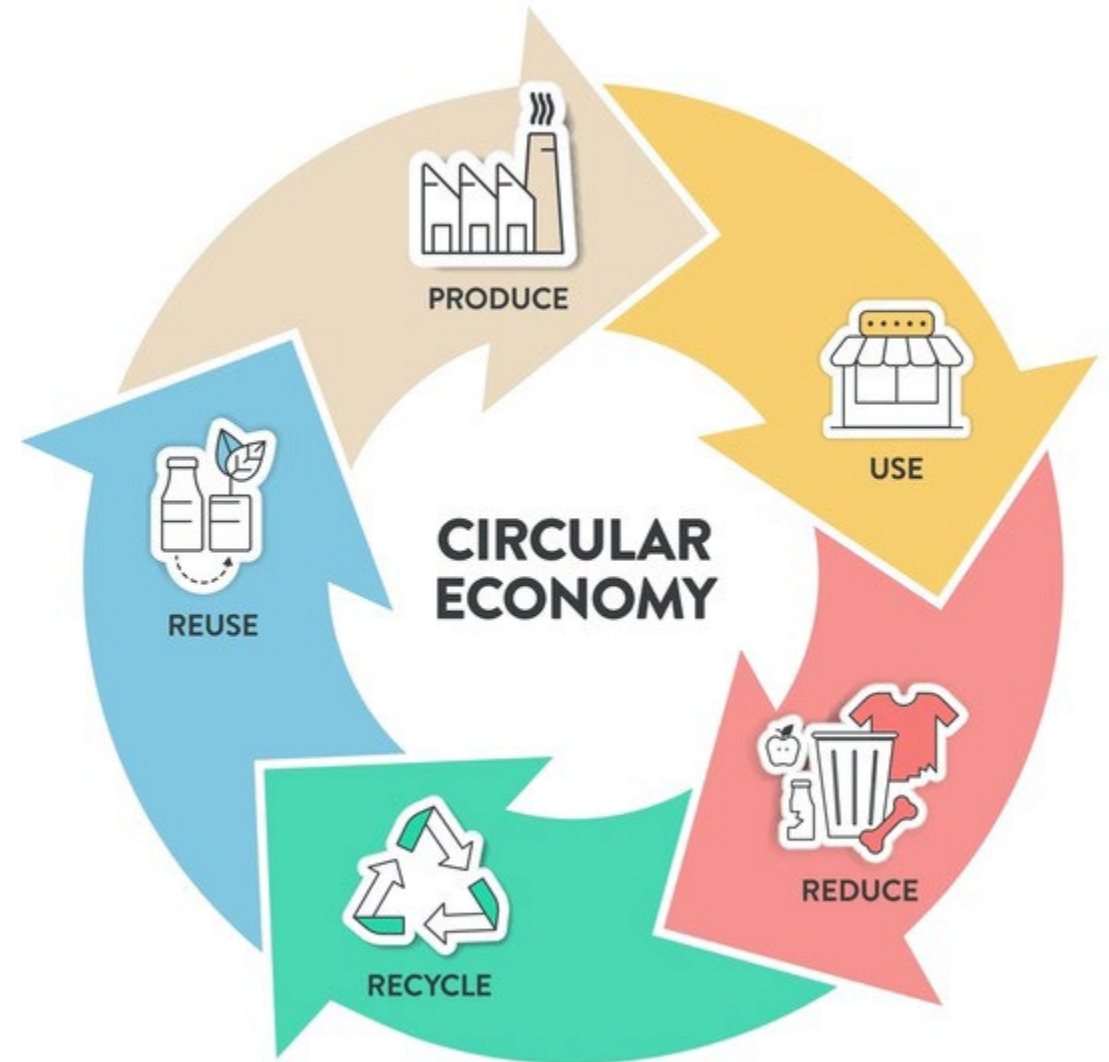
The circular economy

What is the circular economy?

In a **circular economy**:

- We use things for **longer**, we don't always need the latest phone
- We **fix** broken items, e.g. repair holes in clothing
- We **reuse** and **recycle**
- Less waste is created

Materials go around in a circle, not a straight line



Clothing Waste



Clothing Waste

Think about clothes in your home:

- We sometimes buy new clothes quickly
- Clothes are thrown away even if they can still be worn or used by others

This linear approach creates waste and pollution!



Making clothes more circular

How can we do this:

We can:

- Wear clothes for longer
- Pass clothes on to others
- Fix small holes or tears
- Donate clothes to a charity
- Recycle fabric when possible



Plastic



Plastic waste

Plastic is:

- Very useful
- Very strong
- **BUT** hard to break down in nature

Once plastic is made, it **stays on Earth for a long time**



How does the circular economy work?

A Plastic Bottle Story:

- **Linear Way**

Buy → drink → bin → landfill

- **Circular Way**

Buy → drink → recycle
→ made into something new

**All of the plastic ever
created still exists!**



**Food
waste**



Food waste in Northern Ireland

Food waste happens when:

- Food is cooked but not eaten
- Food goes out of date
- Too much food is bought

This happens in homes, shops, cafes and restaurants

Wasting food also wastes:

- Water
- Energy
- Farmers' hard work

What is the cost of wasted food in Northern Ireland each year?

How can we make food more circular?

How many ideas can you think of?

Some ideas...

- Plan meals
- Don't overbuy and let food go out of date
- Store food properly eg use your freezer
- Eating leftovers
- Using brown food waste bin
- Buy loose fruit and veg with no plastic packaging
- Composting at home



Quiz

Test your knowledge:

Composting food waste is part of the circular economy.

A linear economy means we keep reusing materials.

Fixing a bike instead of buying a new one helps the planet.

TRUE

FALSE

Circular economy jobs



Circular Economy Planner

Helps towns and cities design better systems, like improved recycling, bike repair hubs, sharing libraries, and zero-waste shops.

They design communities where waste is minimised.



Recycling Plant Worker

They work in recycling centres where materials such as paper, plastic, metal, and glass are sorted. They help make sure waste is separated correctly so it can be turned into something new.

They make sure recyclable items are saved from landfill and reused in new products, helping to protect the planet.



Sustainability Educator

They teach children, schools, and communities about recycling, reducing waste, and looking after the environment. They organise eco-projects, workshops, and outdoor learning activities.

They inspire people to make eco-friendly choices and help whole communities learn to care for the earth.

Circular economy jobs



Repair Technician

They fix broken items like toys, electronics, and small appliances so they can be used again instead of being thrown away.

By repairing objects instead of replacing them, they stop waste and help things last longer.



Materials Scientist

Studies different materials (plastic, metals, paper, fabrics) to find ways to reuse or recycle them better or replace them with eco-friendly alternatives.

They invent new planet-friendly materials, like biodegradable plastics.



Upcycling Artist or Maker

Turns old or unwanted items into brand-new creations, like furniture from pallets or jewellery from scrap metal.

They show how “waste” can become something useful and beautiful.



What Can You Do?

- Home
- School
- Clubs
- Hobbies

What ONE thing can you do to create less waste?



Unit 4:

Biodiversity

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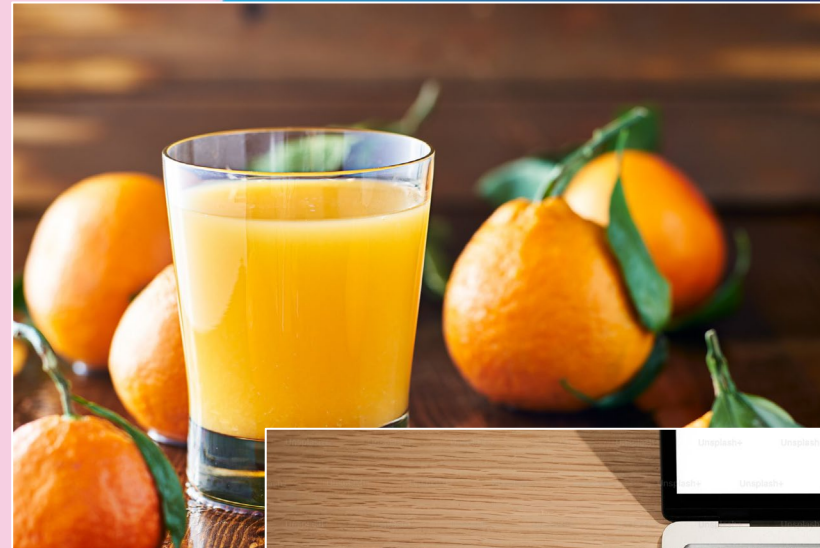


Nature is everywhere!

Hands up if you...

- drank water or juice this morning?
- have used a phone or computer today?
- ate chocolate this week?

What do ALL of these depend on?

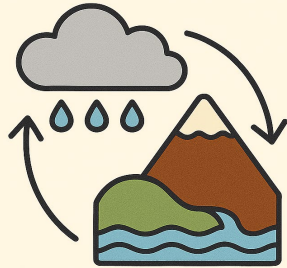


These things all depend on•

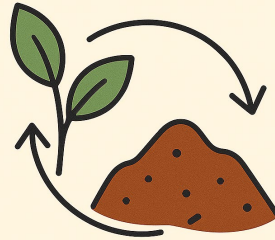
NATURE!



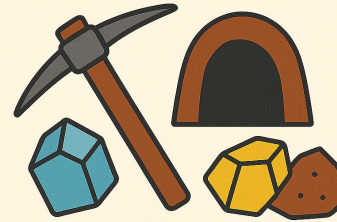
POLLINATION



**WATER
CYCLE**



**SOIL
CYCLE**



**MINING FOR
PRECIOUS
METALS**



**CLEARANCE
OF LAND**

What is another word for Nature?

**Another word for
nature is•**

== VARIETY ==
- PLANTS ANIMALS ==
HABITATS CHARACTERISTICS
CHARACTERISTICS = NATURE
VARIABILITY = UNIQUE = NUPE UNIUICS
BIODIVERSITY
FUNGI U = ENVIRONMENT =
HUMANS SPECIES
VARIABIL AREA DIFFERENT
DIGENETC DIVERSITY
CLIMATE =

What is Biodiversity?

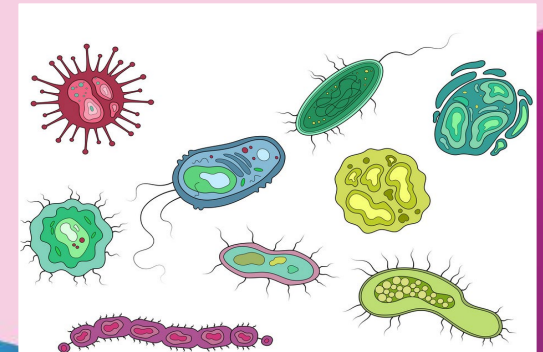


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Biodiversity means all the different living things on Earth

This includes:

- Plants
- Animals
- Insects
- Trees
- Fungi
- Tiny living things we can't see



Definitions



SPECIES

A type of plant, animal or another organism.



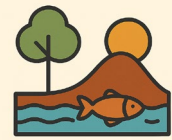
**INVASIVE
SPECIES**

A non-native species that negatively affects native biodiversity
e.g. Japanese Knotweed, Grey Squirrels



HABITAT

The natural home or environment of an animal or plant. A habitat meets all the environmental conditions an organism needs to survive.



ECOSYSTEM

A community of different species working together and with their physical environment.

Living things need each other

BIODIVERSITY

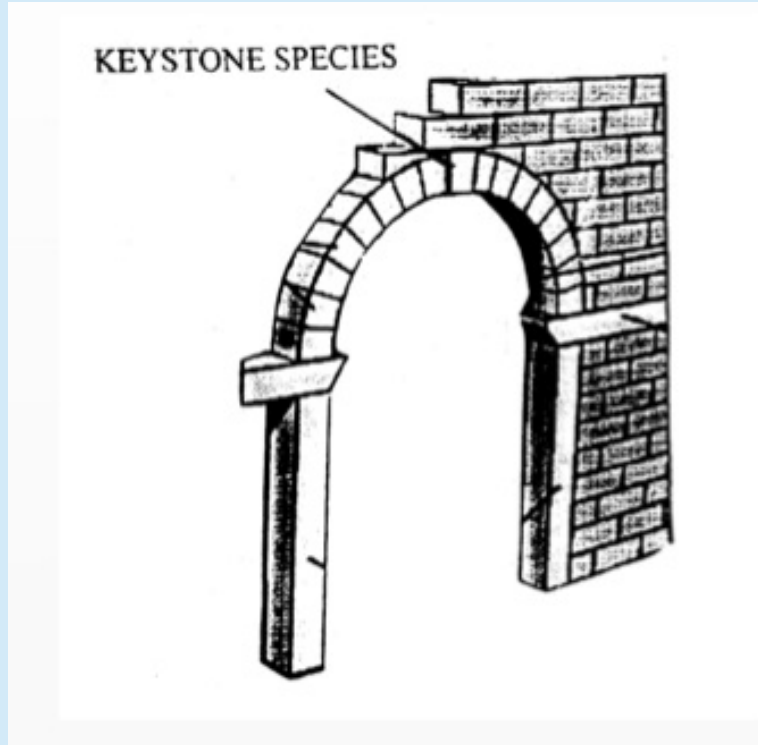
**Share food, water
and space**

**Keep nature
balanced**

**Depend on
each other**



Keystone species



- Like the stone in the centre of this arch:
- Some animals are extra important.
- They help keep nature in balance.
- These are called keystone species e.g. wolf



Grey wolf as a keystone species

- Lots of different animals, plants, habitats and organisms exist in any ecosystem
- What would happen if the keystone species was removed from the ecosystem?



Grey wolf removed as a keystone species

- Grey wolves are hunted to extinction
- Deer have no more predators, their numbers increase
- More deer means they are overgrazing plants and berries
- Less berries means there is less food for other animals
- Less plants mean that small mammals have nowhere to hide, so are at risk from predators
- If wolves return, nature becomes balanced again.



One species can affect many others!

Biodiversity ò what have we learned?

Match the word to the explanation:

Ecosystem	A type of plant, animal or another organism
Habitat	A non-native species that negatively affects native biodiversity.
Species	The natural home or environment of an organism.
Keystone Species	A community of different species interacting with each other and their environment.
Invasive Species	A species that plays a critical role in maintaining the structure of an ecosystem.

Why is Biodiversity Important?





This spider monkey is an unwitting climate activist.

Biodiversity helps...

When nature has lots of different living things, it becomes stronger and healthier. Here's how biodiversity helps:



Biodiversity helps with... keeping nature balanced

Different animals and plants all play a role, like pieces of a puzzle. If one piece is missing, the puzzle doesn't work as well.



Biodiversity helps with... growing our food

Bees, butterflies, and other insects help pollinate plants so fruits and vegetables can grow.



Biodiversity helps with... clean air and clean water

Trees and plants clean the air. Wetlands and forests help filter water so it's safe to drink.



Biodiversity helps with... controlling pests

eat the bugs that harm plants. Owls and foxes help keep rodent numbers under control.

Biodiversity helps•

Biodiversity helps with... making medicine -

Many medicines come from plants, trees, and tiny organisms found in nature.

 **Biodiversity helps with... making the world beautiful** - Forests, animals, flowers, and oceans make Earth colourful, and wonderful to explore.

 **Biodiversity helps to... protect against climate change** - When lots of species live together, nature can cope better with storms or new diseases.



We're Losing Our Biodiversity



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We are losing Biodiversity

Some plants and animals are disappearing because of:

- Pollution
- Too much building
- Cutting down habitats
- Climate change

DECLINING BIODIVERSITY



Why is Biodiversity Declining?



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Why is Biodiversity declining?

Main reasons include:

- Pollution - dirty air, water and land
- Too much building
- Taking too much from nature
- Cutting down habitats - homes for animals destroyed
- Climate change
- Invasive species that harm local wildlife

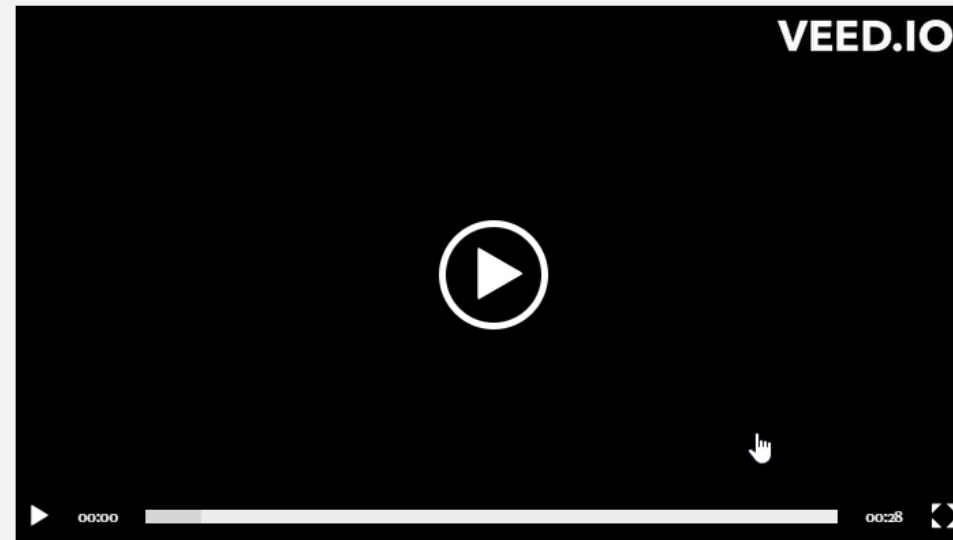


Tune into the changes between 1998 and the late 2010s:

United Kingdom

Ringshall, England.

Location Coordinates: 52.128640, 0.97894783



Hedgehogs: near-threatened with extinction

“For every 30 hedgehogs in the UK in 1950, there is only 1 left in 2020.”



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Invasive alien species





Pause **K**



0:00 / 1:53



Quiz time

Unscramble these
nature words:

LIVWEDIF
ABTHITA
TNRUEA
LANTP
TPOCEROT

Match the animal to their habitat:

Animal
Bee
Frog
Seal
Otter
Red squirrel

Habitat
Sea
Forest
River
Flower Meadow
Pond

How to Protect Biodiversity



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How to protect Biodiversity?



Plant trees and flowers



Protect habitats



Reduce waste



Talk about caring
for nature



Help local
wildlife

Biodiversity Careers



Zookeeper



Ecologist



Advisor



Researcher

Biodiversity Careers



Conservation Ranger/Nature Reserve Officers

Look after natural places like forests, peatlands, and nature reserves where endangered species live. Help protect wildlife and make sure habitats stay healthy. Work with visitors to teach them how to care for nature.



Ecologists

Study plants, animals, and how ecosystems work together. Help protect Northern Ireland's declining species and habitats. Advise on how land can be used without harming nature.



Pollinator Specialist/Wildlife Officers

Protect bees, butterflies, and insects that help plants produce food. Teach people how to plant wildflowers and support pollinators.

Biodiversity Careers

Marine Conservationists

Help protect oceans, coastlines, and marine wildlife in NI. Study seals, seabirds, and underwater habitats.

Habitat Restoration Worker

Restore damaged landscapes like forests and peatlands. Help create “more, bigger, better, and more connected” habitats for wildlife.

Species Protection Officer

Protect endangered animals such as the red squirrel. Manage invasive species like grey squirrels.

What are you going to do differently, to help biodiversity?

- One thing you can change
- One thing you can help protect
- One way you can care for nature

Every small action helps 

Thank you for learning how to:

Reduce waste
Protect nature
Care for our planet

You can make a
difference!

