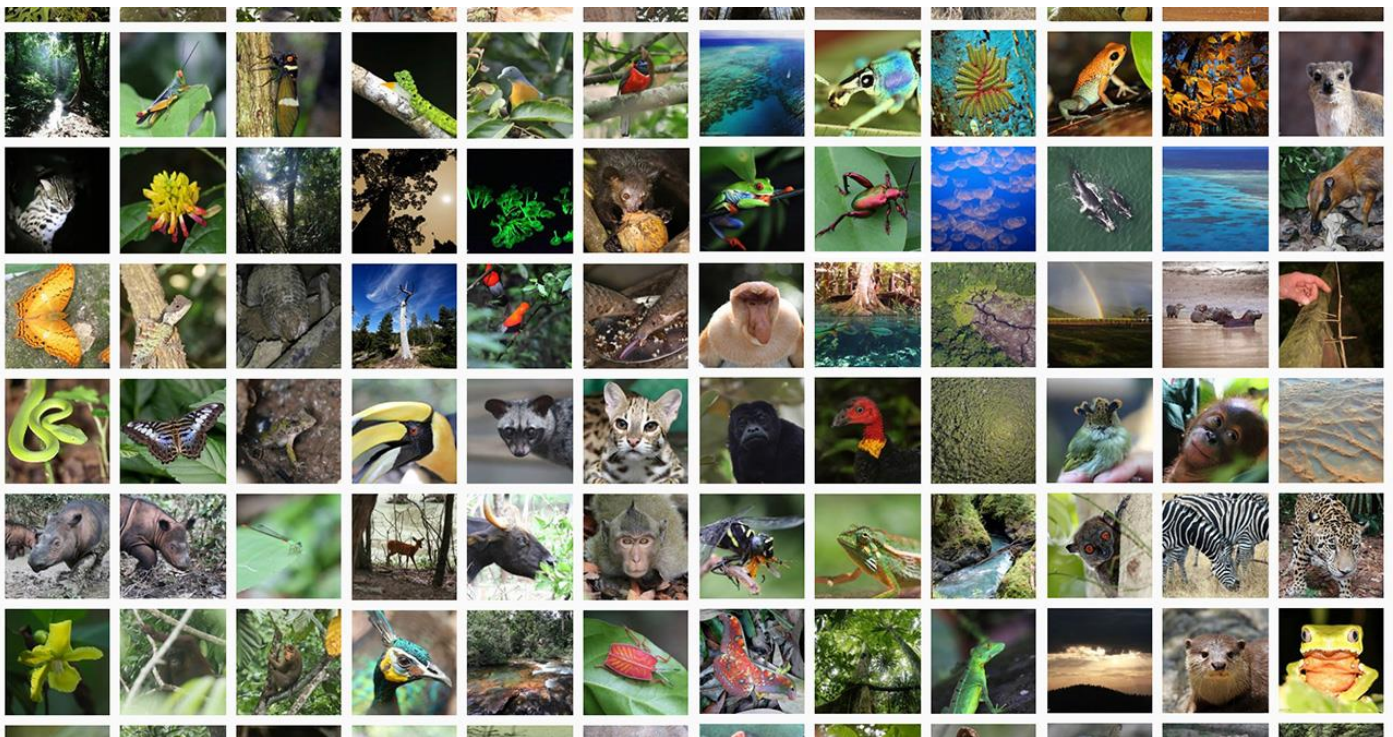


Year 4 Science

Biodiversity



Name _____

Class _____

Prior learning

Year 3: Air pollution

Spring 1: Living things and their habitats

Biodiversity

Core learning of this unitWhat is biodiversity?

- All life is linked, and each habitat has its own ecosystem. A small change to an ecosystem can have a huge impact.

Impact of climate change:

- Biodiversity loss happens when species become extinct. Extinction is when the last animal/plant of a species die out.
- Extinction can happen for many reasons eg the mass extinction of the dinosaurs; habitat loss and climate change.
- Conservationists work to stop animals from becoming extinct, by campaigning and by setting up nature reserves and breeding programmes.

Impact of habitat loss:

- Habitat destruction can be natural or caused by humans.
- When their habitats are destroyed, animals have less food and shelter and so their numbers decline.
- There are lots of things we can do about it, from making changes to our lifestyles to campaigning and putting pressure on political leaders.

Impact of invasive species:

- Other causes of biodiversity loss are the introduction of invasive species.
- Invasive species in the UK include grey squirrels, muntjac deer, Japanese knotweed and rhododendrons

Impact of hunting and overfishing:

- Loss of biodiversity is also caused by hunting and over-fishing.
- Hunting was originally for food but is now mostly a sport, though some traditional medicines also use products such as rhino horn.

Impact of pollution:

- Land, air and water pollution affect biodiversity.
- Soil pollution is caused by chemical pesticides and fertilizers.
- Organic farming uses sustainable methods

Balanced argument on the pros and cons of HS2

- Environmental debates are complex - we want to protect biodiversity but also need to build homes and generate electricity.
- Write a balanced argument for or against HS2.

Eco/PSHCE links

Identifying the threats to biodiversity, the impact loss of biodiversity has and what can be done to protect it.

Significant person

Vandana Shiva is an Indian activist who campaigns against the use of chemical pesticides in farming.

Vocabulary:

Environment: everything that is around us.

Biodiversity: the variety of life on Earth.

Eco-system: a community of living things, together with their habitat.

Habitat: the place where an animal or plant lives.

Extinction: when the last animal/plant of a species dies out.

Endangered species: an animal or plant at risk of becoming extinct.

Conservation: protecting habitats and endangered species.

Invasive species: a plant or animal not originally part of the eco-system in which it now lives.

Pesticides: chemicals sprayed on crops to kill small insects.

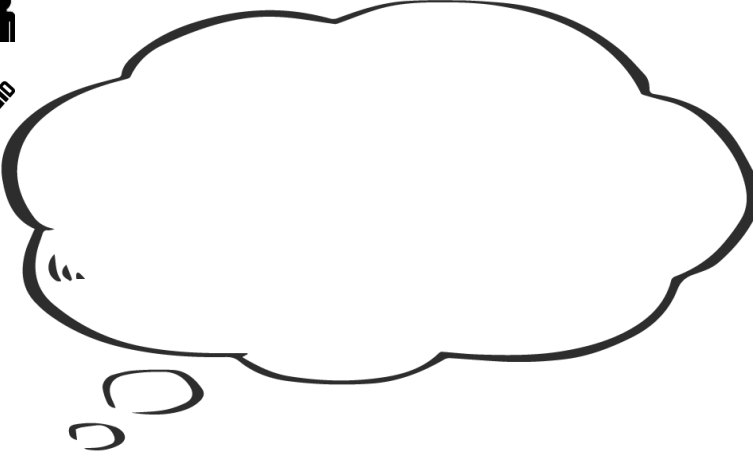
BIODIVERSITY: GLOSSARY

Environment	Everything that is around us.
Biodiversity	The variety of life on earth.
Ecosystem	A community of living things, together with their habitat.
Habitat	The place where an animal or plant lives. The habitat provides food and shelter for the life forms.
Extinct/extinction	When the last animal or plant of a species dies out.
Endangered species	An animal or plant at risk of becoming extinct.
Conservation	Protecting habitats and endangered species.
Invasive species	A plant or animal not originally part of the ecosystem in which it now lives. They are often introduced from abroad as pets or for farming, which then escaped and bred.
Displacement	Forcing animals to move away from their preferred habitat, or disappear completely.
Hunting	Capturing or killing animals for food or sport.
Over-fishing	Catching so many fish that not enough are left to breed.
Bycatch	Other unwanted animals caught along with the desired fish.
Game reserves	Large areas of land where hunting is illegal. They aim to protect wildlife from hunters.
Pollution	The introduction of harmful substances into the atmosphere.
Pesticides	Chemicals sprayed on crops to stop insects from eating them.
Organic farming	Farming without the use of pesticides and other chemicals.
HS2	Stands for 'High Speed 2'. A very fast rail link linking London, Birmingham, Manchester and Leeds.
Debate	An argument used to persuade the other person to your point of view, using evidence to back-up statements.

Lesson 1: I know that living things are connected to each other



What would happen if aliens stole all our bees?



Can you list different places where local wildlife lives?

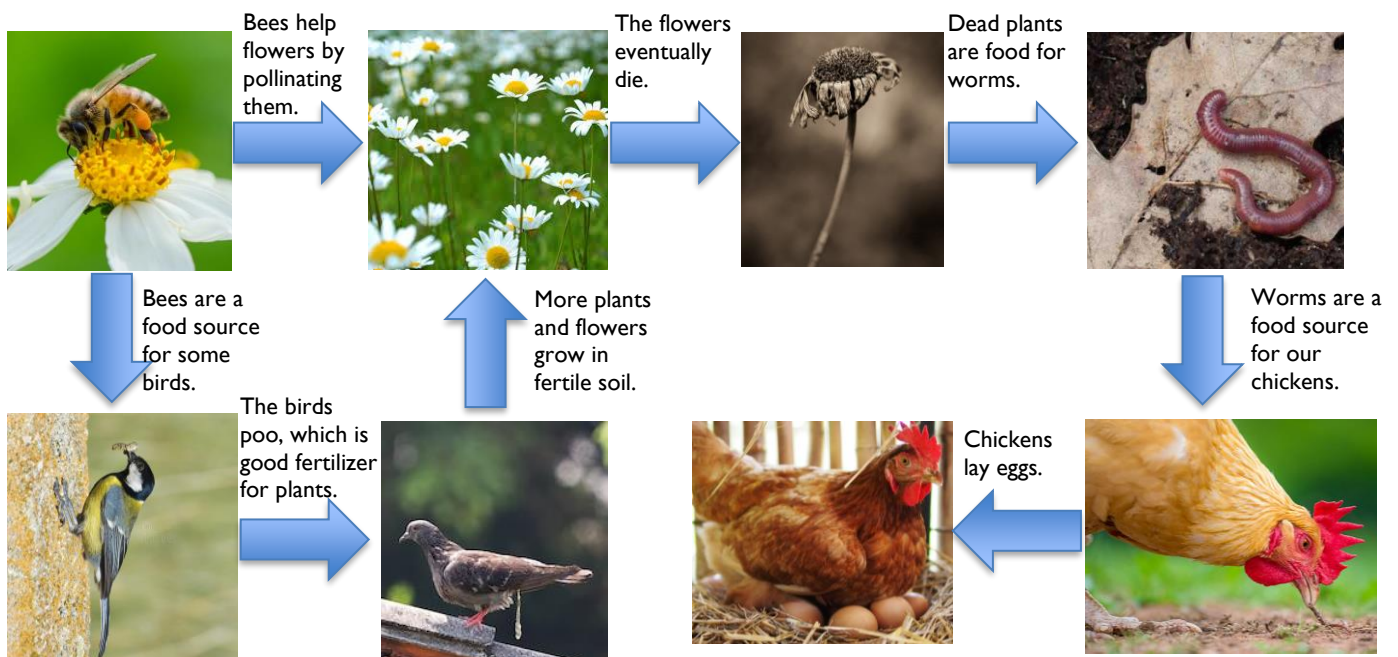


What is an ecosystem?

A community of animals, plants and other living things, together with their habitat, is called an **ecosystem**. For example, a pond ecosystem may consist of a pond **habitat**, inhabited by aquatic plants, microorganisms in the mud at the bottom, fish in the water and a heron on the bank.

If one part of an ecosystem is changed, this may affect other living things in the ecosystem. For example, if a disease suddenly wipes out the plants in a pond, it might affect the fish and heron because they have less food to eat.

The ecosystem of our school garden



Why is biodiversity so important?



Biodiversity, short for biological diversity, is the term we use for the variety of animals, plants, fungi, bacteria, and other connected life forms within any ecosystem.

Biodiversity is important because the more biodiversity there is, the stronger an ecosystem is because small changes will have less of an effect on it. For example, if there are hundreds of species of flower in an ecosystem, one of them going **extinct** won't affect the worms too much as they will have plenty of other species to eat.

All species are interconnected. They depend on one another. Forests provide homes for animals. Animals eat plants. The plants need healthy soil to grow. Fungi help decompose organisms to fertilise the soil. Bees and other insects carry pollen from one plant to another, which enables the plants to reproduce. With less biodiversity, these connections weaken and sometimes break, harming all the species in the ecosystem.

Biodiversity is important to people in many ways. Plants, for example, help humans by giving off oxygen. They also provide food, shade, materials, medicines, and fibre for clothing and paper. The roots of plants also help prevent flooding. Plants, fungi, and animals such as worms keep soil fertile and water clean. As biodiversity decreases, these systems break down.

Sometimes, removing just one small part of this complicated, fragile system can have a huge impact on all the other parts of the ecosystem.



For example, look at the diagram above. What could happen to our garden if we removed bees?



Draw a picture of what our garden looks like now, then one of what it might look like if bees suddenly disappeared. Label your drawings to show the differences.

With bees

Without bees



Let's watch this video for more information about how connected different species are, and how humans have had an impact on the **environment**. There is also a fun game to play on this website!

<https://www.bbc.co.uk/bitesize/topics/zp22pv4/articles/z2md82p>



For more information about how important insects are, let's watch another video!

<https://www.bbc.co.uk/newsround/47195749>