INVESTIGATING EARTH



Plants

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Contents

Investigating Earth	4
Plants	5
What are plants?	6
What are plants made from?	8
Different types of plants	10
Flowering plants	12
Cone-bearing plants	14
Ferns	15
Earth's plant cycle	16
Why are plants important?	18
Plants feed animals and humans	20
Plants feed animals and humans Plants put oxygen into the air	20 22
Plants feed animals and humans Plants put oxygen into the air Plants make the soil healthy	20 22 24
Plants feed animals and humans Plants put oxygen into the air Plants make the soil healthy Plants protect the soil	20 22 24 26
Plants feed animals and humans Plants put oxygen into the air Plants make the soil healthy Plants protect the soil Protecting plants	20 22 24 26 28
Plants feed animals and humans Plants put oxygen into the air Plants make the soil healthy Plants protect the soil Protecting plants Amazing plants	20 22 24 26 28 30
Plants feed animals and humans Plants put oxygen into the air Plants make the soil healthy Plants protect the soil Protecting plants Amazing plants Glossary	20 22 24 26 28 30 31

When a word is printed in **bold**, click on it to find its meaning.

Investigating Earth

We investigate Earth to find out what makes it work. Earth is made from natural features. Some of these natural features are living and some are non-living things.



Plants

Plants are a natural feature of Earth. They grow on land and in water. Most plants grow out of soil and almost all plants grow leaves.



Plants include trees, bushes, flowering plants and grasses.

4

What are plants?

Plants are living things that stand in one place. Plants make their own food from the materials around them.



Plants grow by making food from materials in the air and the soil.

Plants can have four main parts. Each part of a plant does a special job.

Many plants have four main parts that do different jobs.



6

What are plants made from?

Plants are made from two main materials, water and **carbon**. Plants get water from the soil. They get carbon by taking in **carbon dioxide gas** from the air.



Plants need air and water to grow.

Plants use energy from sunlight to turn water and carbon dioxide into food. This process is called **photosynthesis**.

Plants use energy from sunlight to mix carbon, water and nutrients to make food.



Different types of plants

There are three main types of plants on Earth.



These three different types of plants **reproduce** in different ways.



I Flowering plants reproduce from seeds made inside flowers.



3 Ferns reproduce from **spores**.



2 Cone-bearing plants reproduce from seeds made inside **cones**.

Flowering plants

All flowering plants produce seeds. The seeds grow inside the flowers. As the flower dies, the seeds fall to the ground. New plants grow from the seeds.



Seeds from an agapanthus flower fall as the flower dies.



Some flowering plants grow fruit to protect their seeds. The fruit grows inside a flower. As the flower dies the fruit ripens. The plant seeds are protected inside the fruit.



Cone-bearing plants

Cone-bearing plants grow woody fruit called **cones**, but do not grow flowers. Cones fall to the ground and open their scales to release the seeds inside. New plants grow from the seeds.



Ferns

Ferns have no flowers or fruit. Ferns make tiny **spores** that fall to the ground and grow into new ferns.

Millions of tiny spores grow in clusters on the undersides of fern leaves.



Earth's plant cycle

In Earth's plant cycle, new plants grow using material left by dead plants.

Plants use the same material over and over in Earth's plant cycle.

I A plant seed takes 2 The shoot reaches the soil's warmth, water and shoot surface and the plant grows nutrients from the soil. leaves. The plant makes food It grows roots and a from **carbon**, water and soil single leafy stem called nutrients. The food helps the a shoot. plant grow. **4** The dead plant falls onto 3 The fully grown plant the soil and **decomposes**. produces seeds that fall Decomposing plants put onto the soil. The plant then nutrients back into the soil. grows old, wilts and dies. Seeds get buried under the soil.

Why are plants important?

Plants grow almost everywhere on Earth. Plants work together with some of Earth's other natural features. This helps to keep Earth healthy.

Earth has six main natural features that work together to keep Earth healthy.



Plants help animals and humans. They also work with air and soil.



Plants feed animals and humans

Plants produce food that animals and humans need to eat. Humans eat many different types of plants, such as fruits and vegetables. Most animals eat one or two types of plants.



Grazing animals, such as cows, need to eat grasses to survive.

Some animals and humans eat meat. Plants are also important to meat eaters. This is because most meat comes from animals that once ate plants.



People eat meat and eggs from chickens. Chickens eat plant foods, such as wheat and corn.

Plants put oxygen into the air

Plants take in **carbon dioxide** and give off **oxygen**. Most of the oxygen in the air comes from plants. Animals and humans must breathe in oxygen from the air to survive.



All animals need to breathe oxygen.

Some human activities put carbon dioxide into the air. Too much carbon dioxide in the air is causing problems. Plants help remove carbon dioxide by turning it into oxygen.



Plants make the soil healthy

Plants help make the soil healthy by putting **nutrients** into the soil when they die. Dead plants fall onto the soil and **decompose**.



Healthy soil contains nutrients that were in plants when they were alive. Worms, beetles and other soil animals eat decomposed plants, break them up and turn them into nutrients. Soil animals spread nutrients, air and water through the soil as they burrow around.



Plants provide food for worms and other burrowing animals, which helps keep the soil healthy.

Plants protect the soil

Plants protect soil from **erosion** by water and wind. Soil is loose material that is easily washed away by running water. Plants hold soil in place with their roots.



Plants near running water help hold the soil in place with their roots.

Dry soil is light and easily blown away by wind. Plants drop **leaf litter**, which stops sunlight from drying soil. This keeps soil moist and stops it from blowing away.



leaf litter

Leaf litter from plants covers and protects soil from the sun.

Protecting plants

Plants are important to humans and animals and need to be protected. Every day humans cut down large areas of natural forest to make products such as paper.



When trees are cut down, animals that live in them lose their homes.

We can help protect trees by using less paper. When we use less paper, fewer trees are cut down to make new paper. We can also recycle and reuse paper.

Reusing and recycling paper helps to protect trees.



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Amazing plants

One of the world's biggest plants is the giant Victoria waterlily. It grows in the Amazon River basin in South America.



The leaves of these giant waterlilies can grow to 3 metres across and hold a person.

Glossary

carbon	substance found in nature and in all living things
carbon dioxide	a type of gas in the air that plants take in
chlorophyll	green substance in plant leaves that takes in sunlight
cones	dry woody fruit of cone-bearing plants, such as pine and fir trees
decomposes	breaks down naturally
erosion	breaking up and wearing away of Earth's surface by natural forces such as water or weather
gas	light, floating substance, such as oxygen or carbon dioxide
leaf litter	dead leaves dropped by plants
nutrients	substances in soil that plants use to make food
oxygen	a type of gas in the air that animals and humans breathe in
photosynthesis	process by which plants use sunlight to make food
reproduce	make new plants
shoot	first small stem grown by a plant seed
spores	tiny parts of plants from which new plants grow

Index

a

air 6, 8, 9, 18–19, 22–23, 25 animals 19, 20–21, 22, 25, 28

С

carbon 8-9, 17 carbon dioxide 8-9, 19, 22-23 cones 10-11, 14

d decomposes 16,24

е

erosion 19, 26-27

f

ferns 10–11, 15 flowers 5, 7, 10–15 food 6–7, 9, 17, 19, 20–21, 25 fruit 13–14, 15, 20

g

grasses 5, 20

h

humans 19, 20-21, 22-23, 28

leaf litter 27

n

natural features 4–5, 18 nutrients 7, 9, 16–17, 24–25

0

oxygen 19, 22-23

р

photosynthesis 9

r

recycling 29 reusing 29

S

seeds 7, 11–14, 16–17 soil 5, 6, 8–9, 16–17, 18–19, 24–25, 26–27 spores 11, 15 sunlight 9, 27

V

Victoria waterlily 30

W

water 5, 7, 8–9, 16–17, 18, 25, 26 wind 26–27