

Science - Autumn Term 1

Materials

What words would you use to describe glass?

Answer

Name a material that can stretch.

Answer

Which material would be best for building a shed? Why?

Answer

Which material would be best for protection you from the rain? Why?

Answer

Name a material that can twist.

Answer

Why is a chocolate teapot a bad idea?

Answer

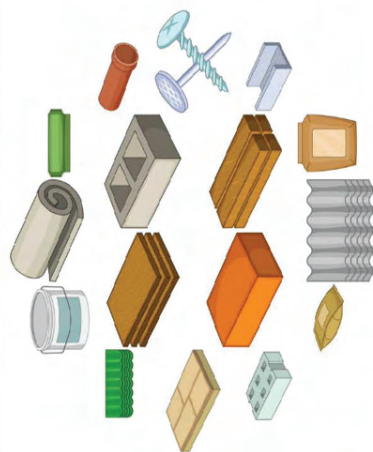


Use of EVERYDAY MATERIALS

Year 2



What you should already know...



- Materials are the substances that things are made from.
- We use lots of different materials every day, e.g. metal, plastic, wood, and glass.
- Different materials have certain properties, e.g. glass is see-through, metal is strong and often shiny, etc.
- Some materials are used to make many things.

Properties of Materials

Material	Image	Properties	What could it be used for?
Metal		-Metals are often strong, shiny, hard and long-lasting. -Metals can be hammered into different shapes.	-Metals can be made into things like pots and pans. -Metals can be stretched into wires and rods.
Glass		-Glass can be strong, but thin glass shatters. -Glass is transparent and waterproof. It can be made into different shapes.	-Glass is most often used to make windows and glasses. -It is also used in making mirrors, table-tops and windscreens.
Wood		-Wood is hard and strong; -Wood is long-lasting and is a natural product. -Wood is flammable.	-Wood is often used to build furniture, like benches and desks. -Wood can be used to build houses and cabins.
Plastic		-Plastics can be tough or flexible and can be made into any shape. Plastics can be dyed different colours and can be made transparent.	-Plastics can be used to make packaging, bottles and toys. -Plastics can be moulded into plates, knives and forks.
Rubber		-Rubber is extremely tough, but also very flexible. -Rubber is elastic and also waterproof. Rubber doesn't tear easily.	-Not including food and drinks, water is still used in many, many products. For example, it is used in making paints, toothpastes, shampoos and cement.
Brick		-Bricks are very hard and strong. They are difficult to break. Bricks are thick and store heat well.	-Bricks are normally attached together with mortar and are used to make buildings. -They are also used for paving.
Paper		-Paper is often thin and can be made into lots of different shapes. Paper can be torn. It goes soggy when wet.	-Paper is normally used for writing. Paper is used in diaries, notebooks and for printing on. Paper is used for posters/displays.
Cardboard		-Cardboard is often thin but is firmer and tougher than paper. Cardboard is more difficult to tear. It goes soggy when wet.	-Cardboard is often turned into boxes and is then used for packaging items. It can be used for protection, e.g. protecting floors when painting.

Properties of Materials Vocabulary

Hard	Squashy	Smooth	Absorbent	Bumpy	Bouncy	Dull	Flexible	Flammable	Translucent	Waterproof	Firm	Soft
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An object that attracts other objects

Magnet

If an object is stretchy it can extend in length.

Stretch

An object described as stiff will not move or change shape easily

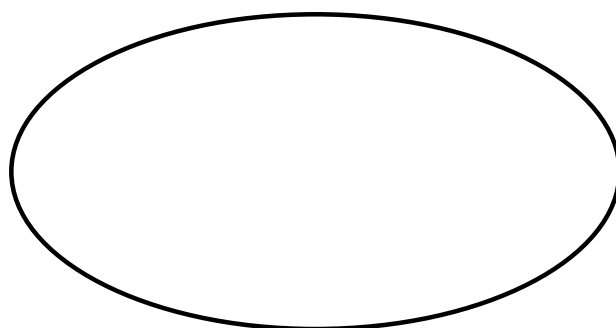
Stiff

When an object is described as bendy it can be curved from its original shape but will then return to that form.

Bend

National curriculum	Materials
Year 1	distinguish between an object and the material from which it is made
Year 1	identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock
Year 1	describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene
Year 1	describe the simple physical properties of a variety of everyday materials
Year 2	identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses
Year 2	find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching

Mind Map



Before starting the topic, add what you already know.

What is this picture telling me?



What words would you use to describe glass?

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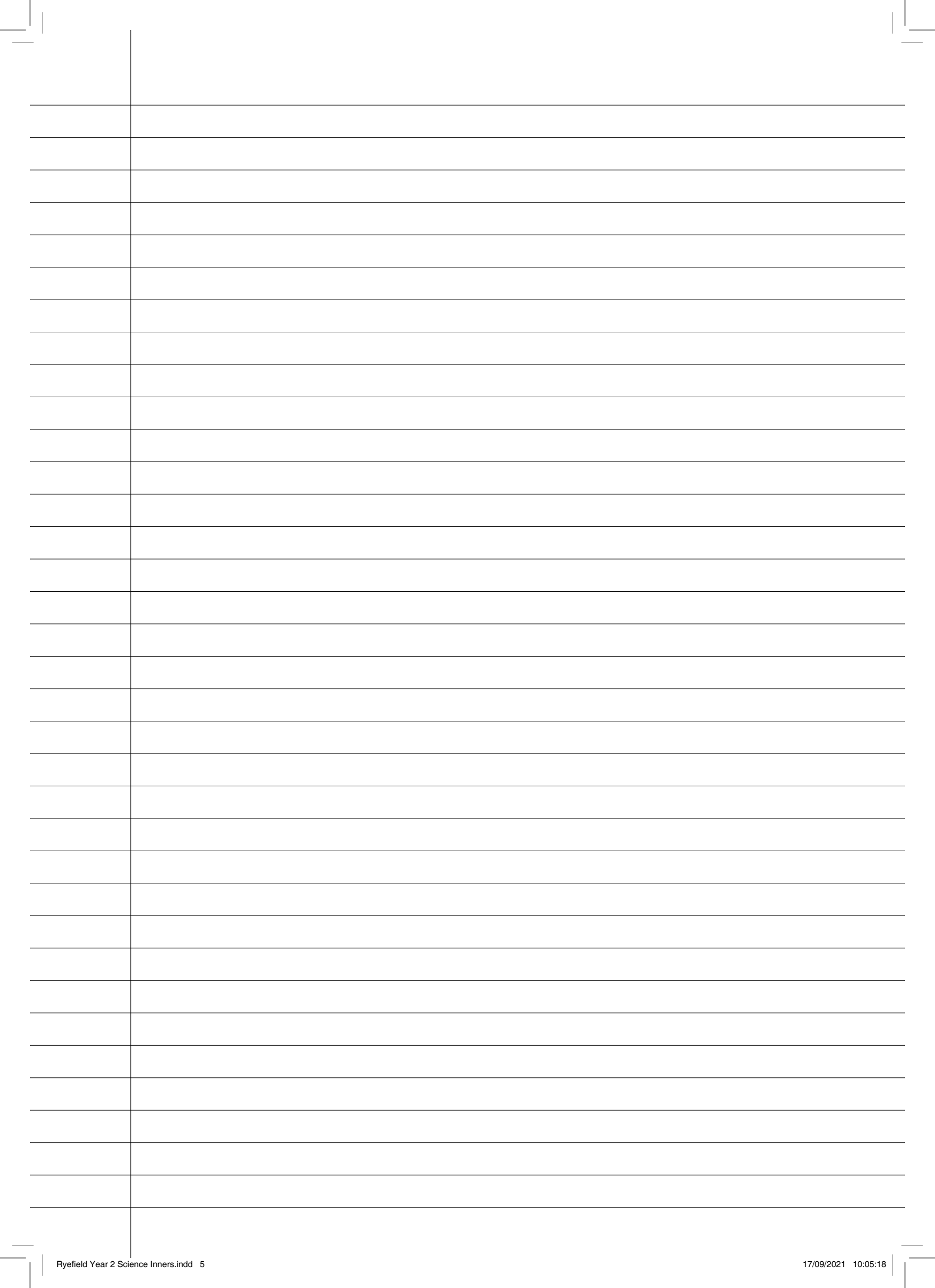
Answer

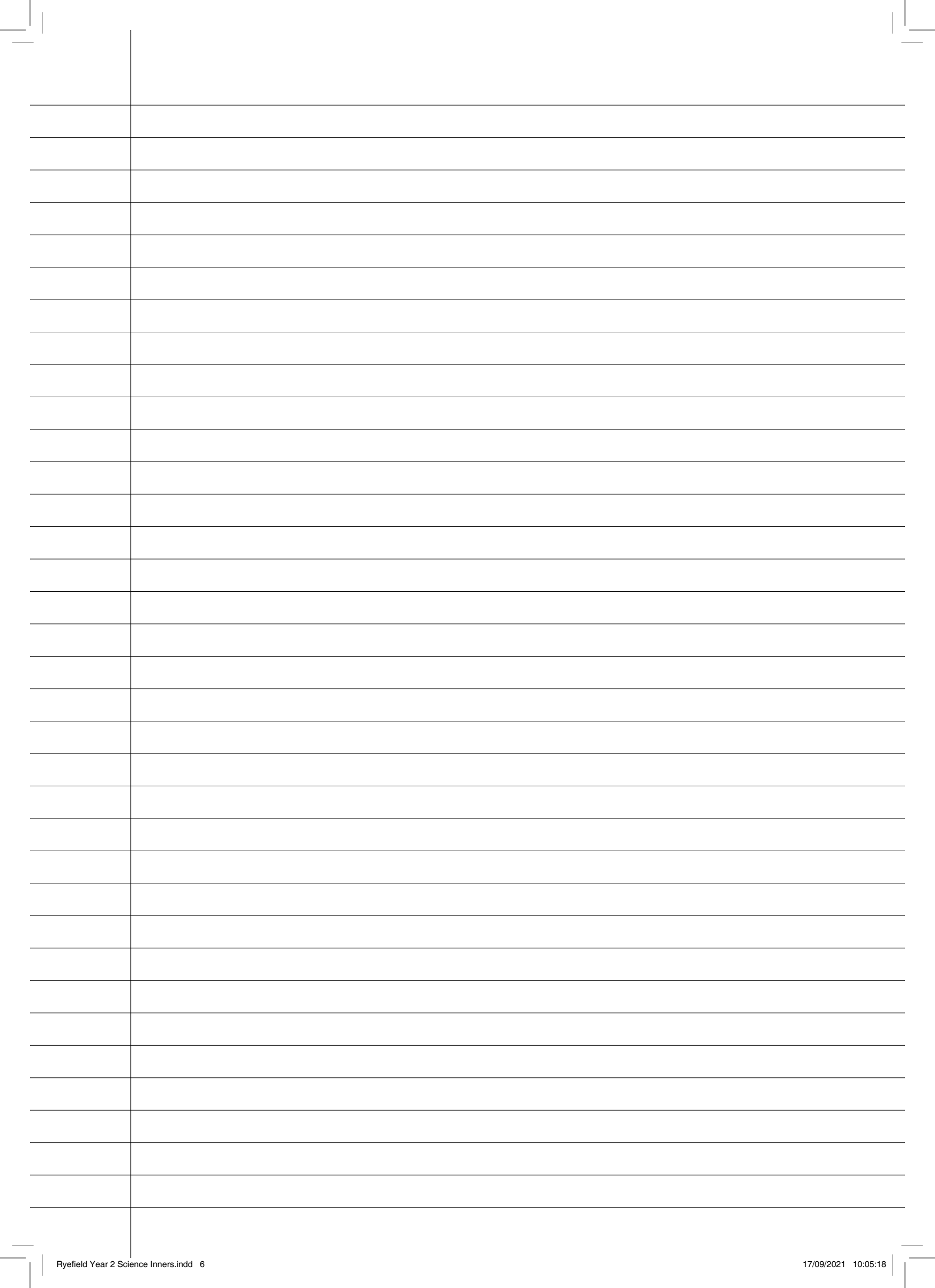
Name a material that can twist.

Answer

Why is a chocolate teapot a bad idea?

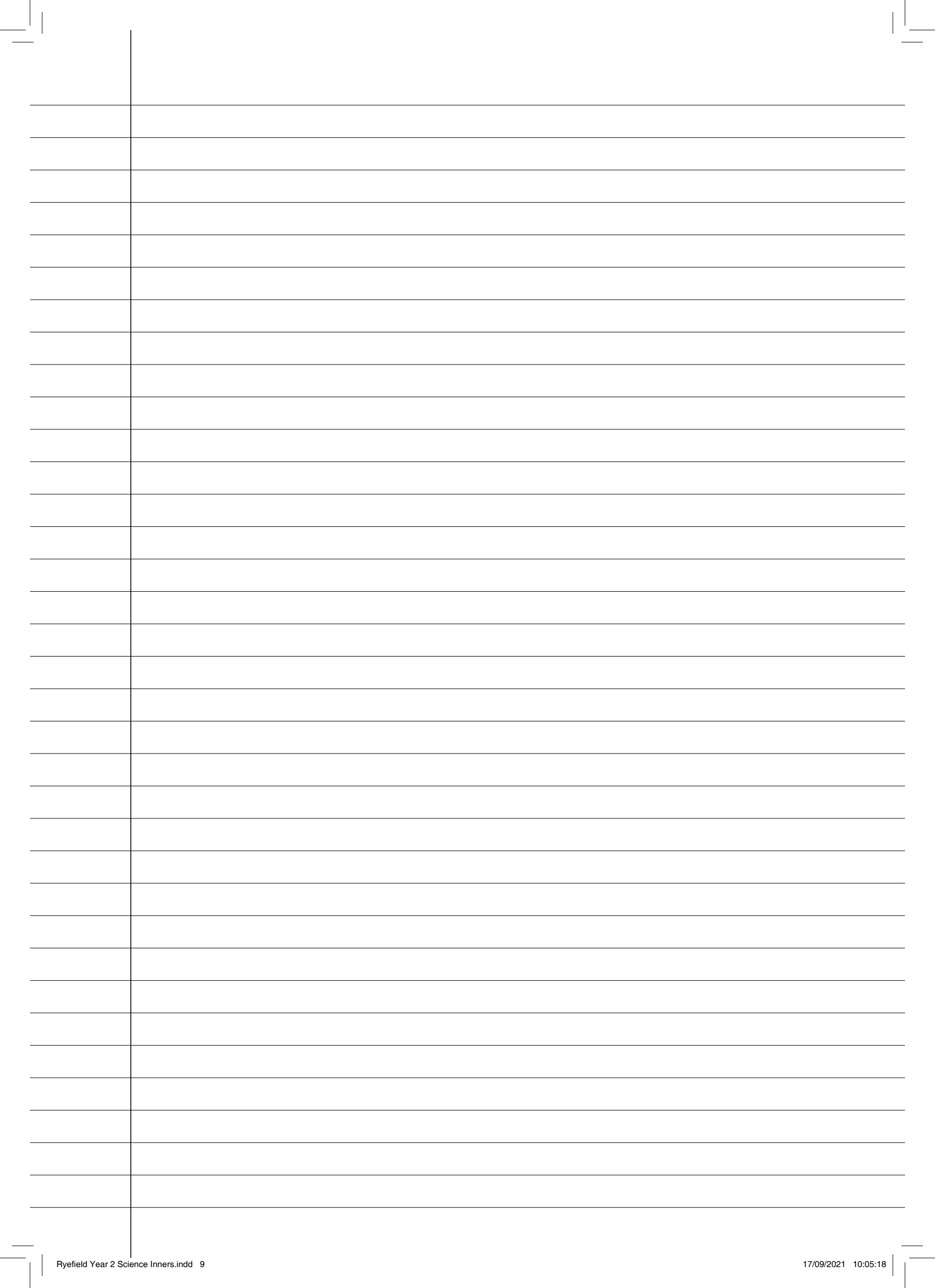
Answer

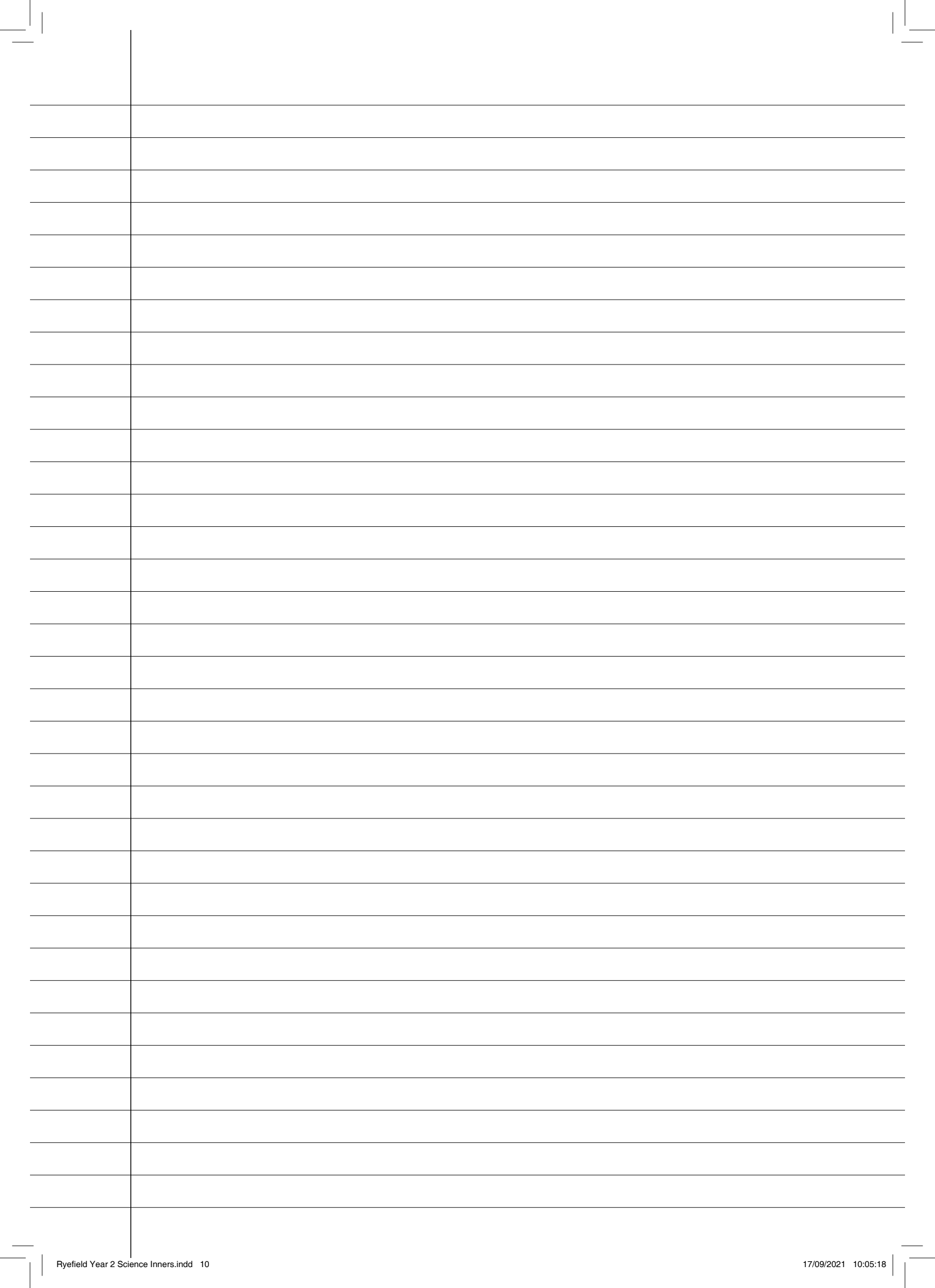






Show what you know. Recall two things on the topic.	Connect - can you link this to one more thing that you know.
1.	
2.	







Show what you know. Recall two things on the topic.	Connect - can you link this to one more thing that you know.
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Science

Autumn Term 2



Habitats

Year 2 - Living things and their habitats quiz

1)



What is this called?

2)

1. Each of these pictures shows something that is either **alive**, **used to be alive** or something that has **never lived**. Draw lines to join them to the correct box.



alive

used to be alive

never lived

3)

3. Match each animal to the most suitable habitat.



forest



underground



river



ocean



rainforest

4)

6. Put these **minibeasts** into the **microhabitat** you would be **most likely** to find them. Draw a line between them.



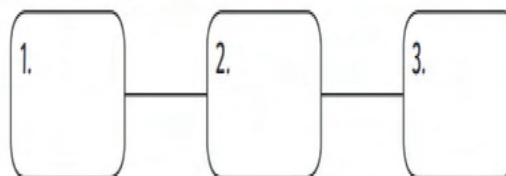
5)

Each of these statements describes something that is either **alive** or **not alive**. Write either **alive** or **not alive** next to each statement:

- It does not need food. _____
- It can have babies (reproduce). _____
- It can grow and move. _____

6)

Complete this food chain.



A



LIVING THINGS and their habitats

Y2



KNOWLEDGE ORGANISER

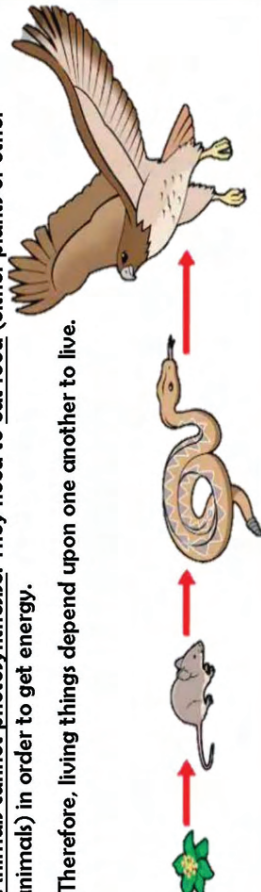
Overview



- All around us, there are some things that are alive, some things that are dead, and some things that have never been alive.
 - All living things have certain characteristics that help to keep them alive and healthy.
 - Living things live in habitats that suit them, and which provide for their basic needs.
 - Living things depend on other living things in order to survive.

Food Chains

- Every living thing needs food in order to create energy. This process is called nutrition.
- Plants achieve nutrition by photosynthesising, using water, carbon dioxide and light.
- Animals cannot photosynthesise. They need to eat food (either plants or other animals) in order to get energy.
- Therefore, living things depend upon one another to live.

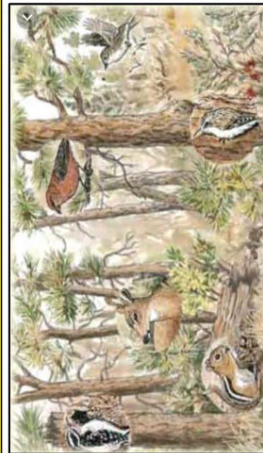


Characteristics of Living Things

M-R-S G-R-E-N

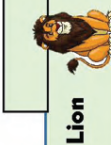
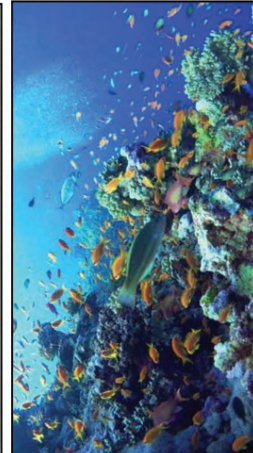
You can remember the seven features of living things by using the acronym MRS GREN.

M	Movement	Animals move in many different ways. Plants grow and turn towards light.
R	Respiration	Plants and animals use oxygen in the air to turn food into energy.
S	Sensitivity	Living things can detect changes in their surroundings.
G	Growth	Living things get bigger and grow.
R	Reproduction	Animals have young. Plants create seeds from which new plants grow.
E	Excretion	Living things get rid of things that they make but don't need.
N	Nutrition	Living things need food/nutrients for energy.



Habitats

- A habitat is a home environment for plants, animals, and other living things.
- Examples of habitats include:
 - Desert; Rainforest;
 - Woodland; Ocean;
 - Meadow; Seashore.
- Micro-habitats are small, specific home environments, e.g. individual trees, a pond, under a rock, or a pile of logs.
- Habitats contain features that make them suitable to the things that live there, e.g., food, shelter, or temperature.
- Habitats can change over the year & over time, so some animals migrate.



Alive

Oak Tree



Fallen Leaves

Dead



Bone



Phone

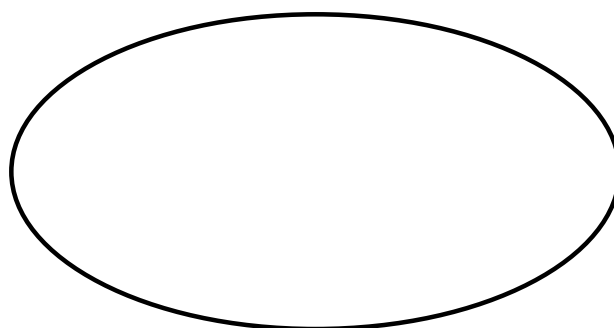


Never Been Alive

Lamp Post

National curriculum	Living things: habitats
Year 2	explore and compare the difference between things that are living, dead, and things that have never been alive
Year 2	identify that most living things live in habitats to which they are suited and describe how different habitats provide the basic needs of different kinds of animals and plants, and how they depend on each other
Year 2	identify and name a variety of plants and animals in their habitats, including micro-habitats
Year 2	describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food

Mind Map



Before starting the topic, add what you already know.

What is this picture telling me?



Year 2 - Living things and their habitats quiz

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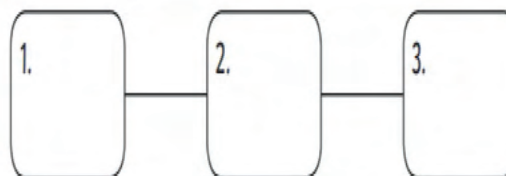
5)

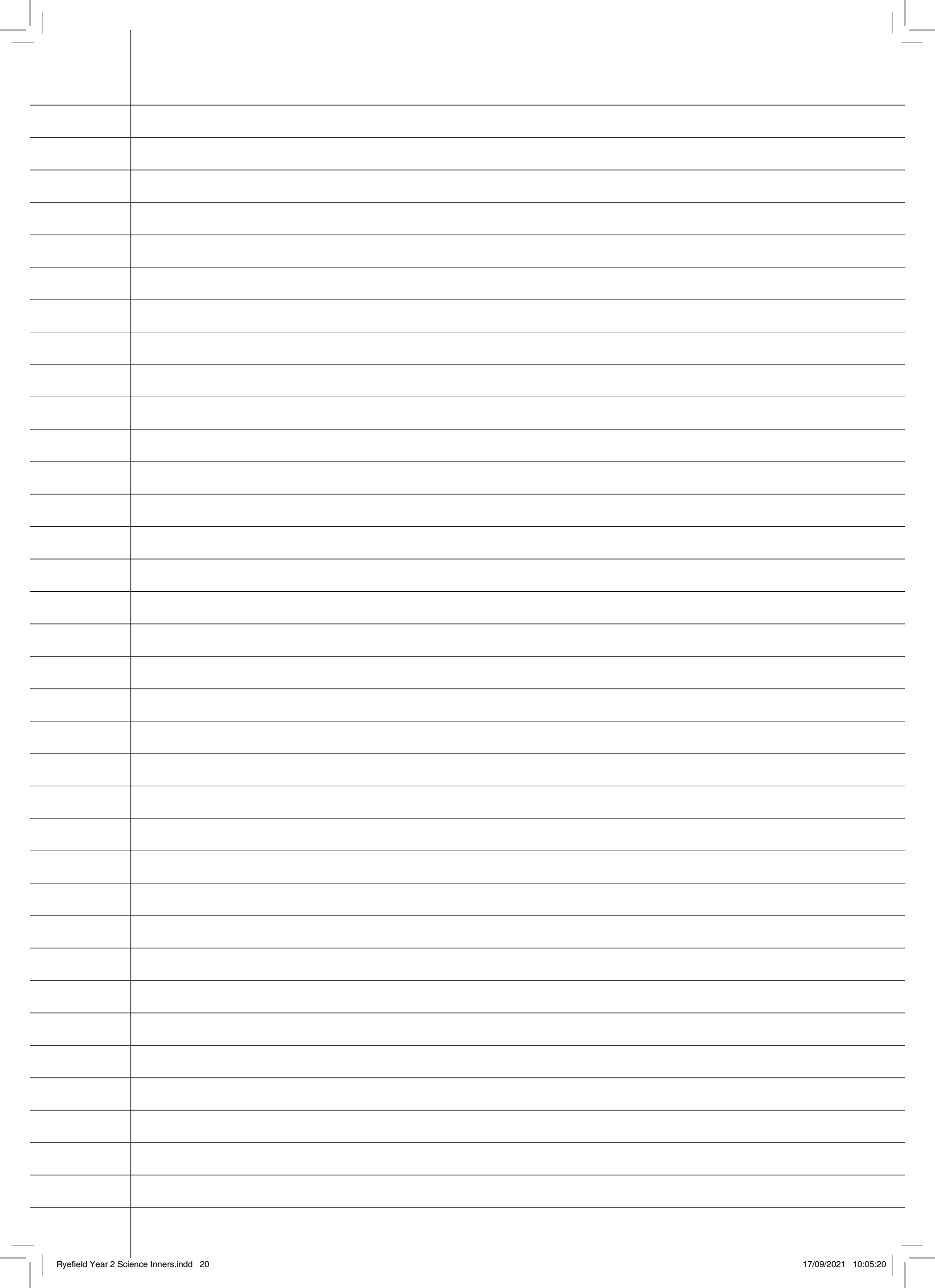
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6)

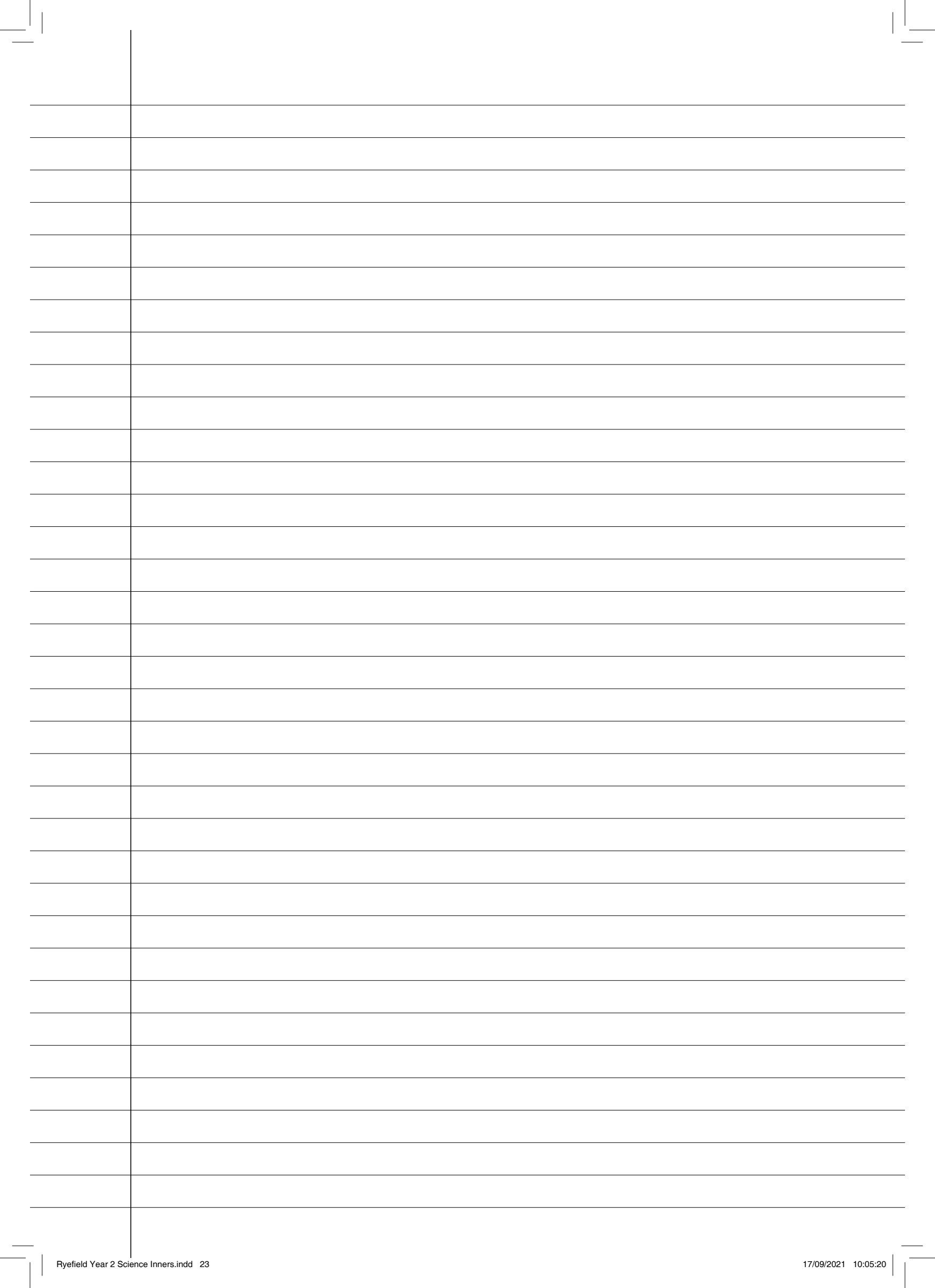
Complete this food chain.

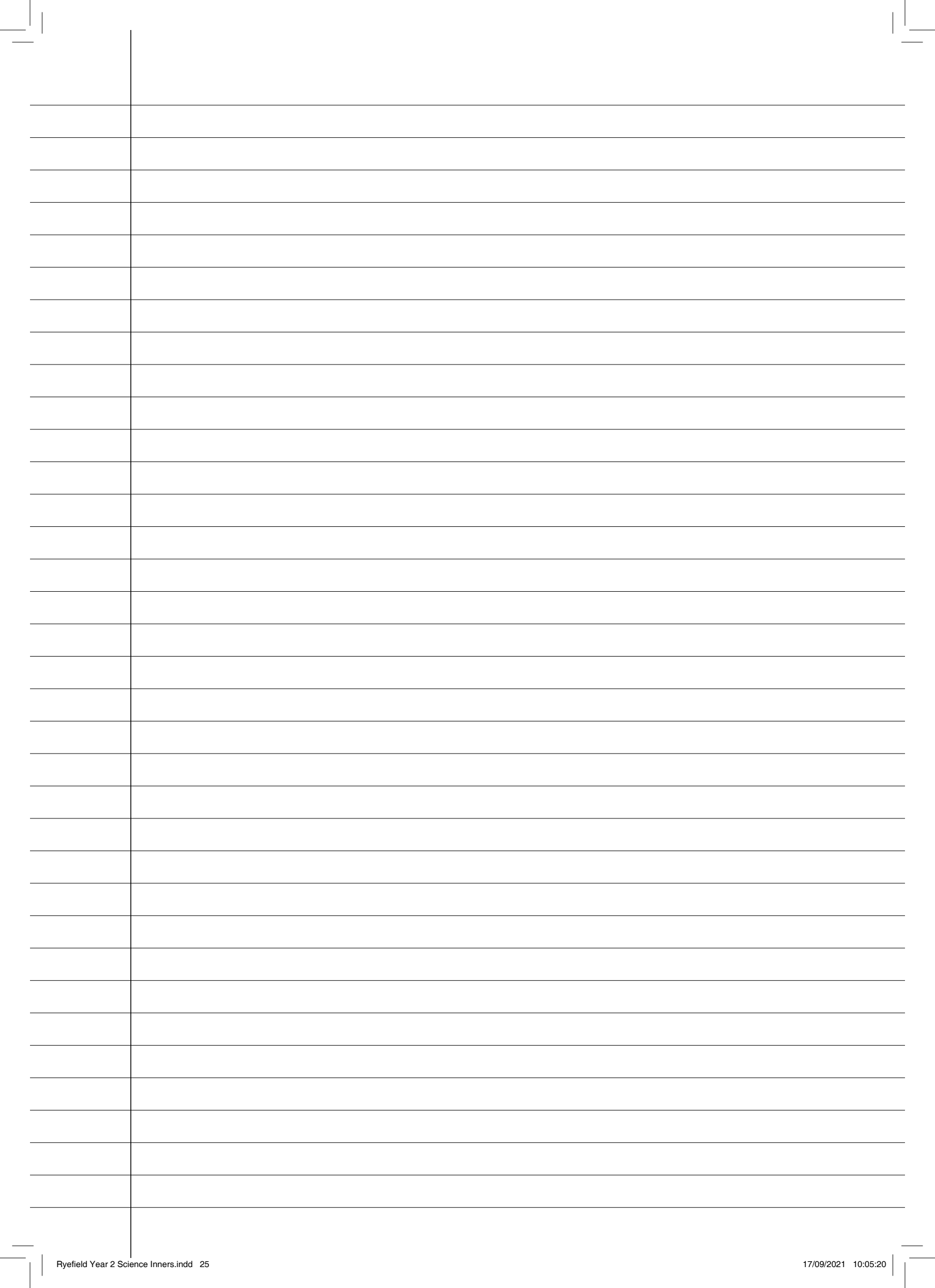







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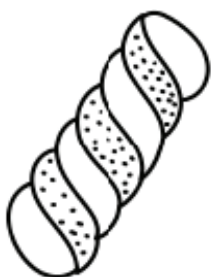






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Science Spring Term 1



Materials, including forces.

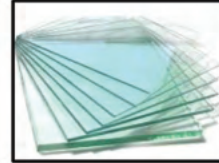
Year 2 - Uses of everyday materials quiz

1)



What material is this made from?

2)



How would you describe glass?

3)



What is this called?

What does it do?

4) Name a material that can stretch

Name a material you can squash

Name a material you can twist

5) Which material would be best for:

Building a shed? _____

Protecting you from the rain _____

Boiling water _____

6) Can you bend a ruler?

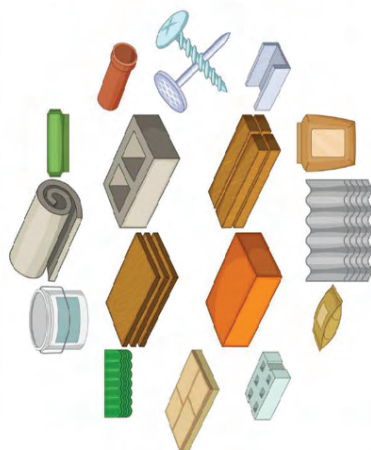
Yes _____

No _____

Use of EVERYDAY MATERIALS

Year 2

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- Different materials have certain properties, e.g. glass is see-through, metal is strong and often shiny, etc.
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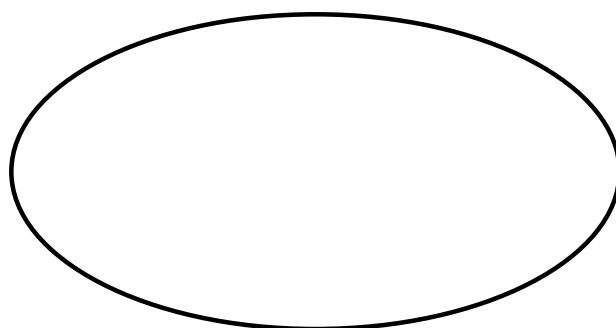
Magnet	An object that attracts other objects
Stretch	If an object is stretchy it can extend in length.
Stiff	An object described as stiff will not move or change shape easily
Bend	When an object is described as bendy it can be curved from its original shape but will then return to that form.

Properties of Materials Vocabulary

Hard Squashy Smooth Absorbent Bumpy Bouncy Dull Flexible Flammable Translucent Waterproof Firm Soft

National curriculum	Materials
Year 1	distinguish between an object and the material from which it is made
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Mind Map



Before starting the topic, add what you already know.

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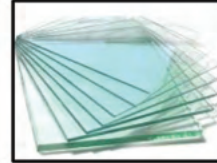
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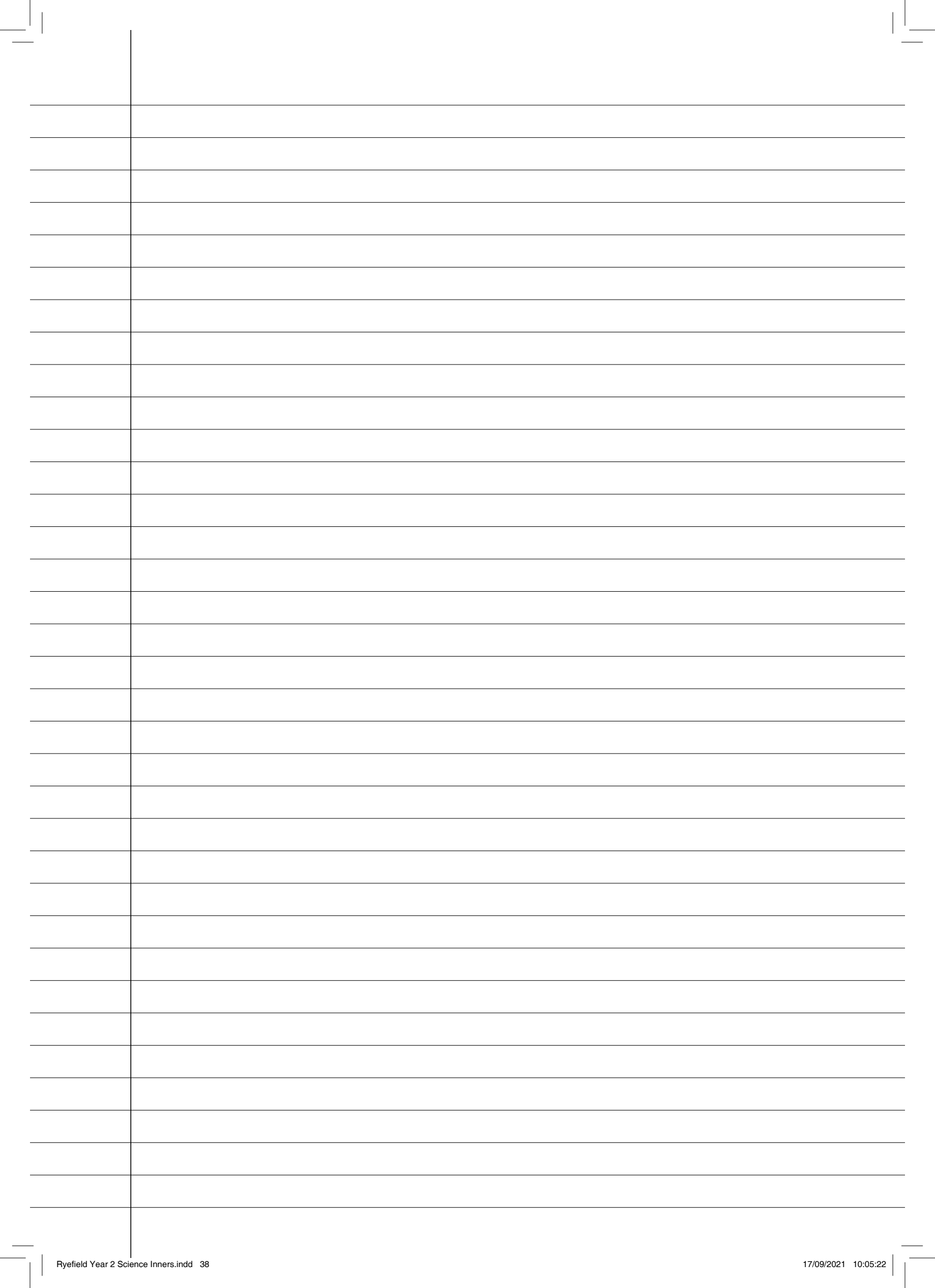
6) Can you bend a ruler?

Yes _____

No _____



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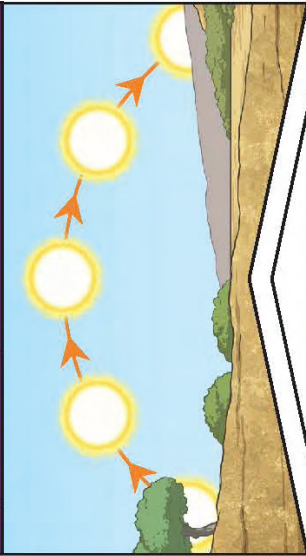
Science - Spring Term 2

Space

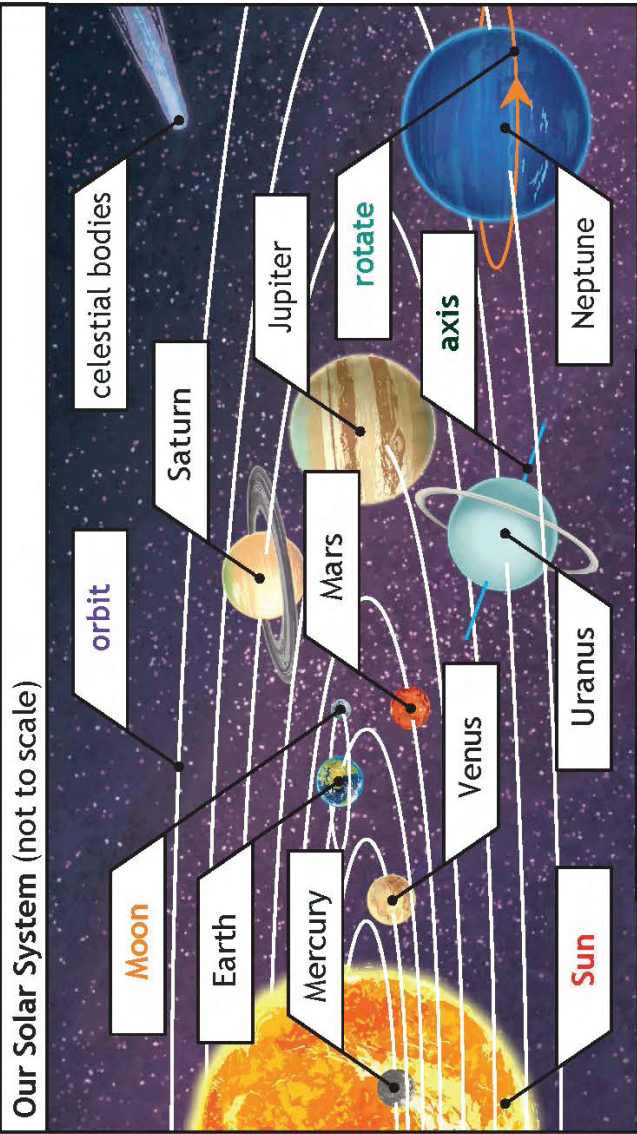
1) Is it easy to become an astronaut?	Answer
2) Which of these is the biggest planet?	a. Earth <input type="checkbox"/> b. Jupiter <input type="checkbox"/> c. Mars <input type="checkbox"/>
3) Which one of these is the brightest planet?	a. Mercury <input type="checkbox"/> b. Uranus <input type="checkbox"/> c. Venus <input type="checkbox"/>
4) How many planets are in our solar system?	Answer
5) What is space?	a. Space is everything in the universe beyond the top of the Earth's atmosphere. b. Space is everything inside the Earth's atmosphere.
6) How long does it take Earth to orbit the sun once?	a. 24 days b. 265 days c. 365¼ days

Key Vocabulary	
Sun	A huge star that Earth and the other planets in our solar system orbit around.
star	A giant ball of gas held together by its own gravity.
moon	A natural satellite which orbits Earth or other planets .
planet	A large object, round or nearly round, that orbits a star .
sphere	A round 3D shape in the shape of a ball.
astronomer	Someone who studies or is an expert in astronomy (space science).
rotate	To spin. E.g. Earth rotates on its own axis .

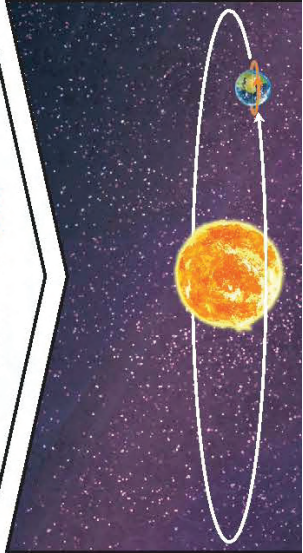
Key Knowledge



It appears to us that the **Sun** moves across the sky during the day but the **Sun** does not move at all. It seems to us that the **Sun** moves because of the movements of Earth.

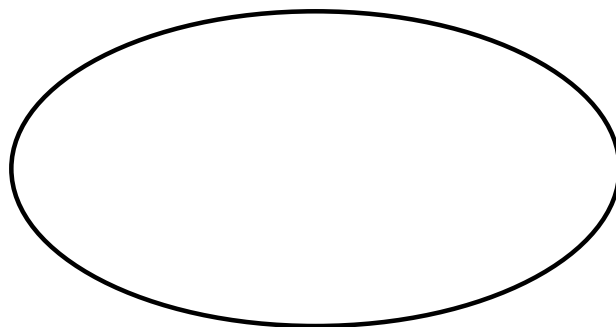


Earth **rotates** (spins) on its **axis**. It does a full **rotation** once in every 24 hours. At the same time that Earth is **rotating**, it is also **orbiting** (revolving) around the **Sun**. It takes a little more than 365 days to **orbit** the **Sun**. Daytime occurs when the side of Earth is facing towards the **Sun**. Night occurs when the side of Earth is facing away from the **Sun**.



Introduction to the topic	Space
Year 2	introduce the children to the concept of day and night and the rotation of the Earth on its axis
Year 2	describe what space is
Year 2	know the names and the order of the planets in relation to the Sun
Year 2	describe what a star is and recognise constellations in the night sky

Mind Map

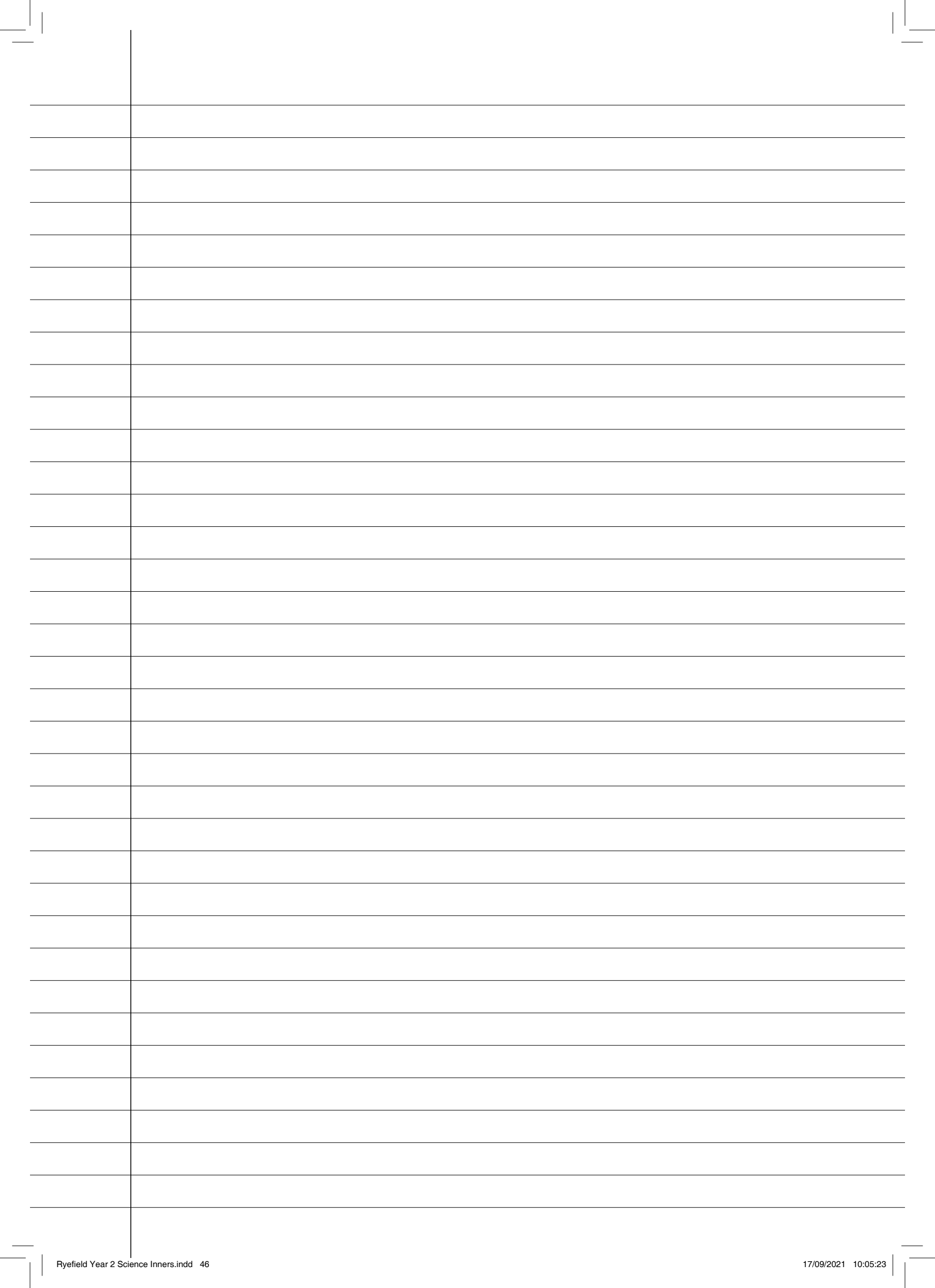


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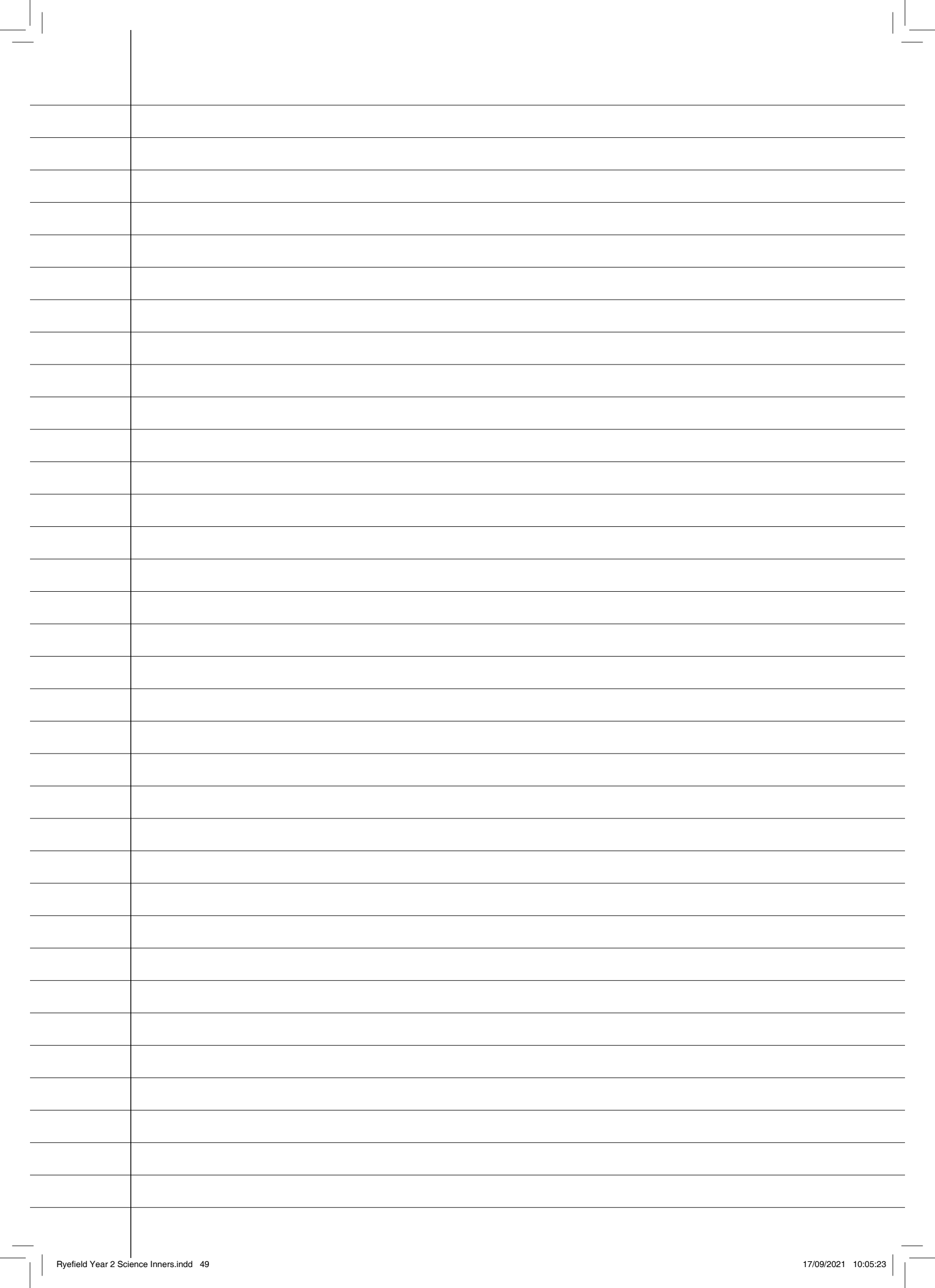
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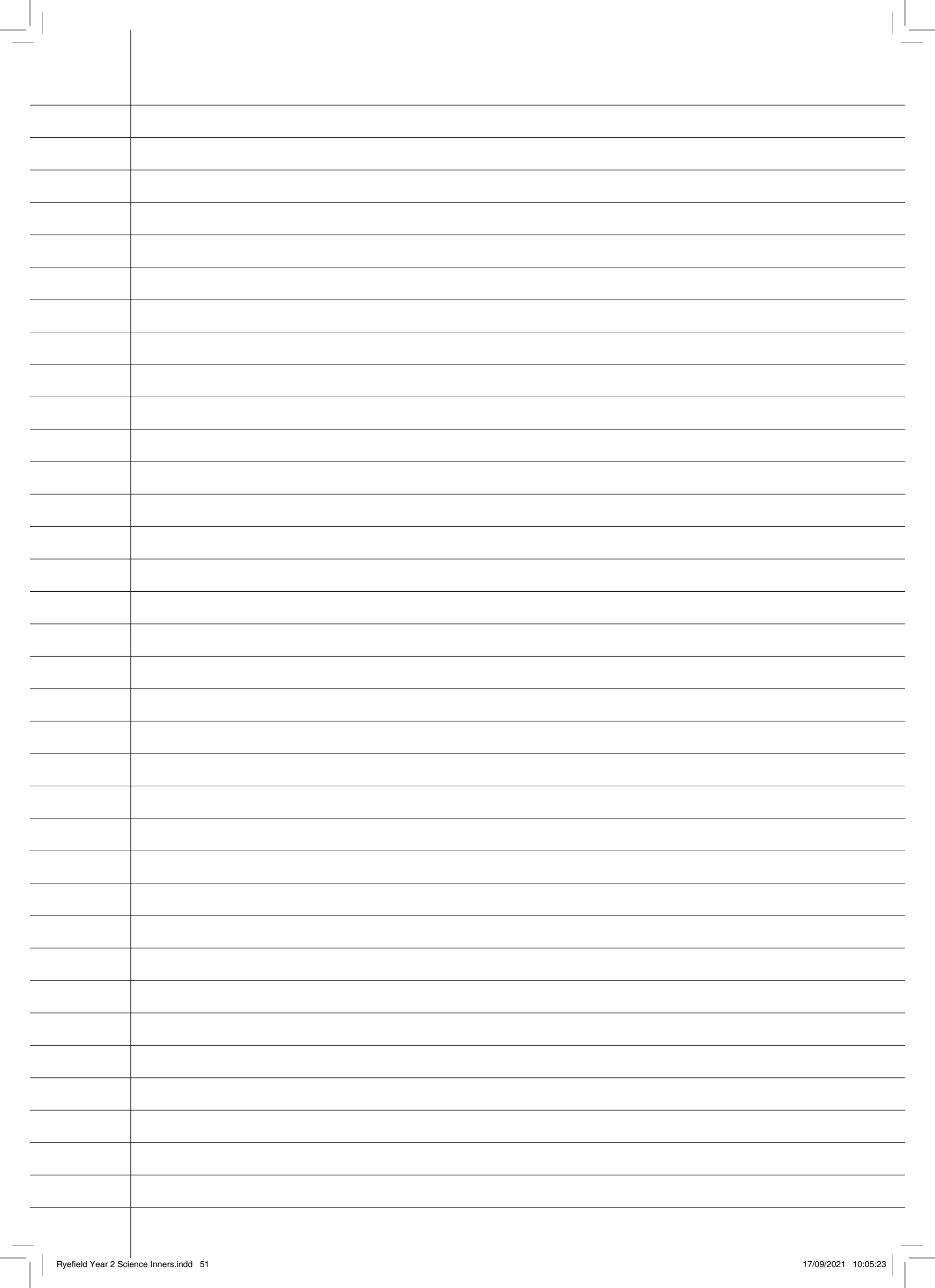


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Ryefield Year 2 Science Inners.indd 48







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1.	
2.	

Science

Summer Term 1



Plants

Year 2 - Ready, Steady, Grow

1) What do seeds need to grow into healthy plants?

1) _____

2) _____

3) _____

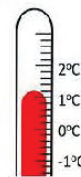
2) What might this be?



3) What is happening here?



4) What does temperature mean?

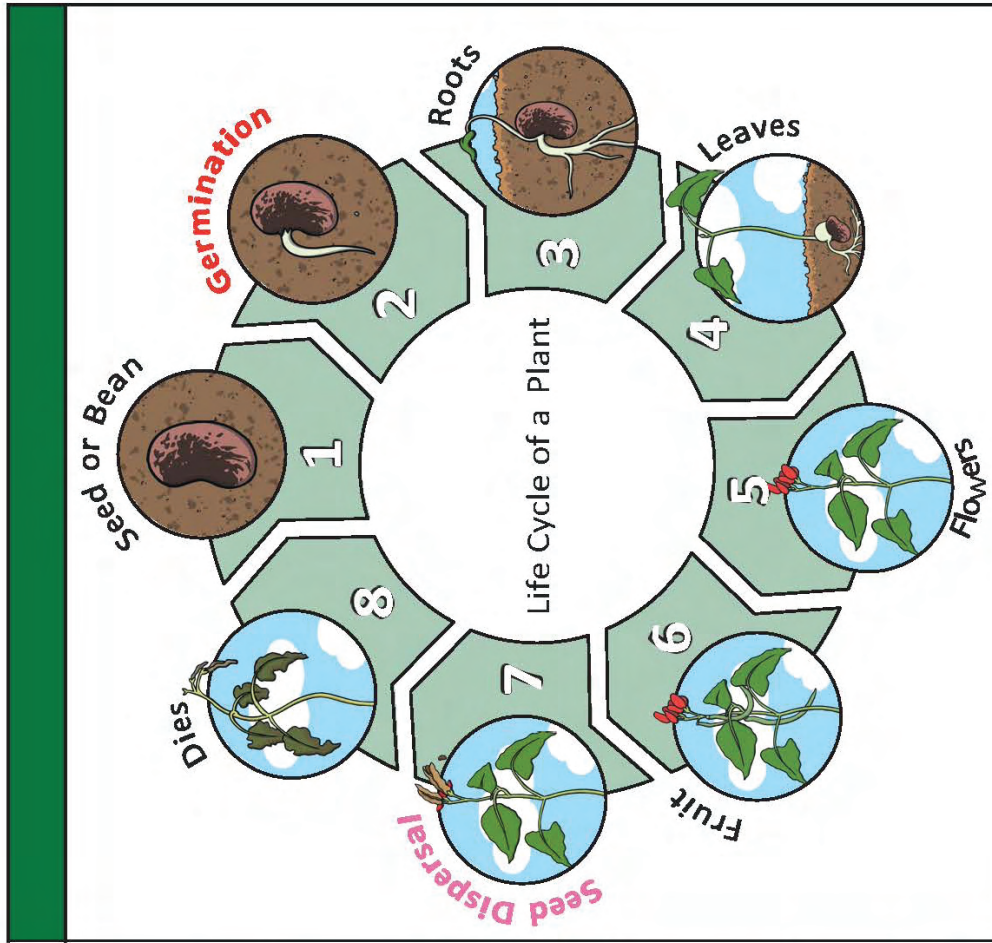
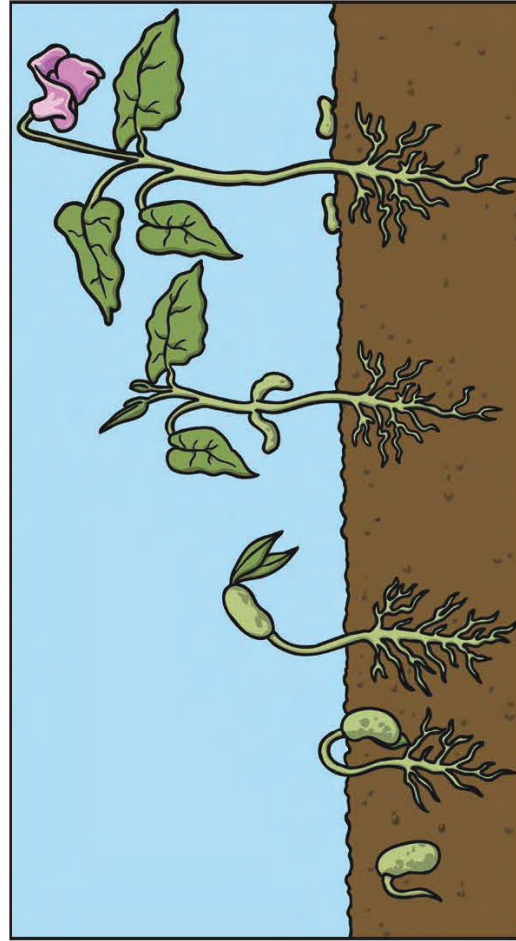


5) Can you name any seeds humans may eat?

6) What is seed dispersal?

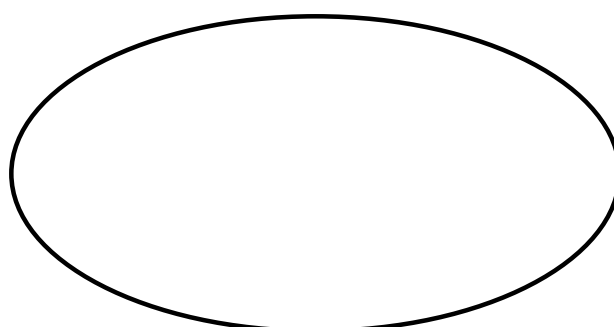
Key Vocabulary

germination	When the conditions are right, the seed soaks up water and swells, and the tiny new plant bursts out of its shell. This is called germination .
sprout	When a plant sprouts , it grows new shoots .
shoot	A shoot grows upwards from the seed or plant to find sunlight .
seed dispersal	Seed dispersal is when the seeds move away from the parent plant. They can be moved by the wind or animals.



National curriculum	Plants: how does it grow?
Year 1	identify and name a variety of common wild and garden plants, including deciduous and evergreen trees
Year 1	identify and describe the basic structure of a variety of common flowering plants, including trees
Year 2	observe and describe how seeds and bulbs grow into mature plants
Year 2	find out and describe how plants need water, light and a suitable temperature to grow and stay healthy

Mind Map



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What is this picture telling me?



Year 2 - Ready, Steady, Grow

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1) _____

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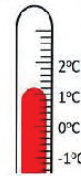
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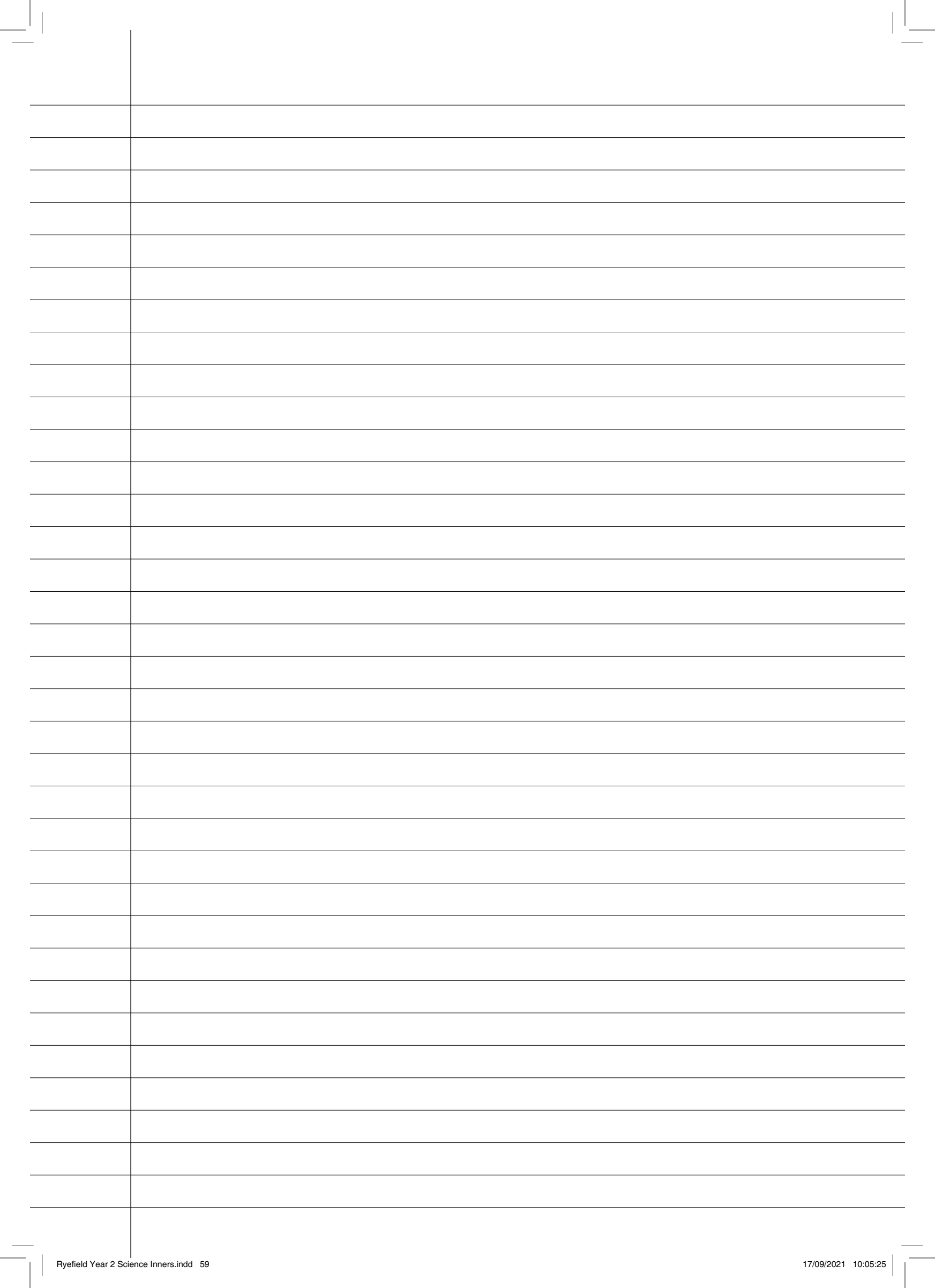


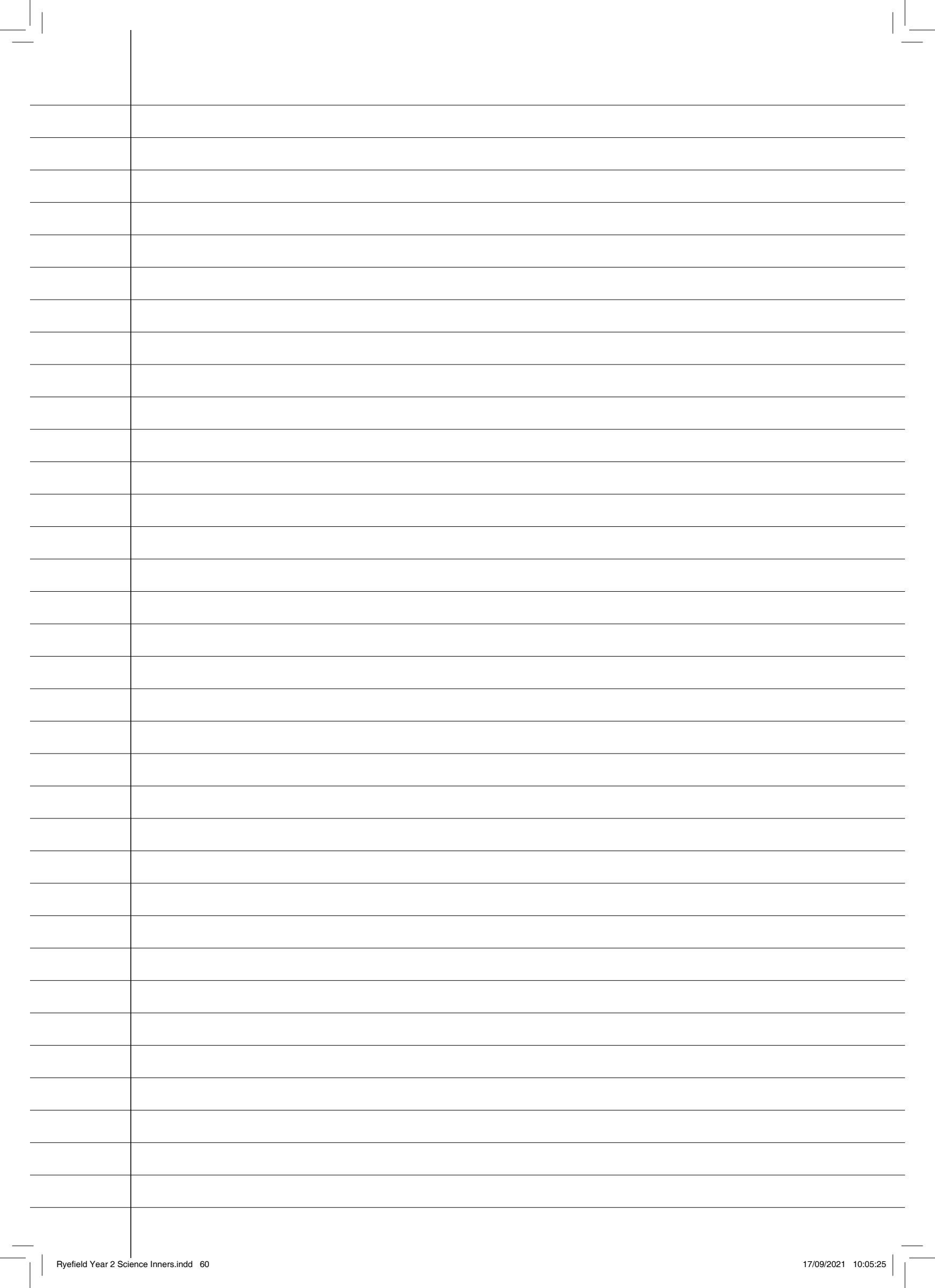
4) What does temperature mean?

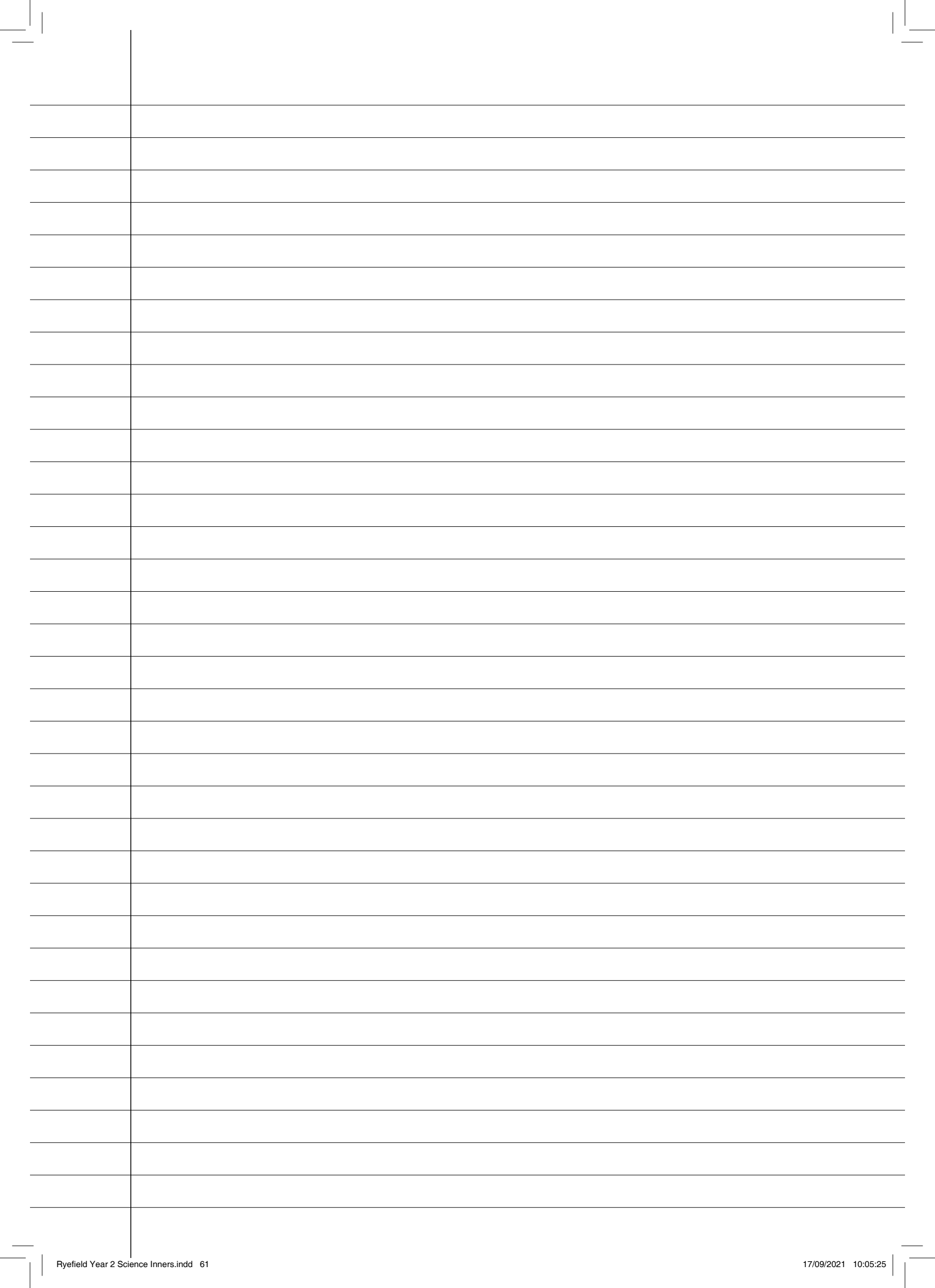


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6) What is seed dispersal?

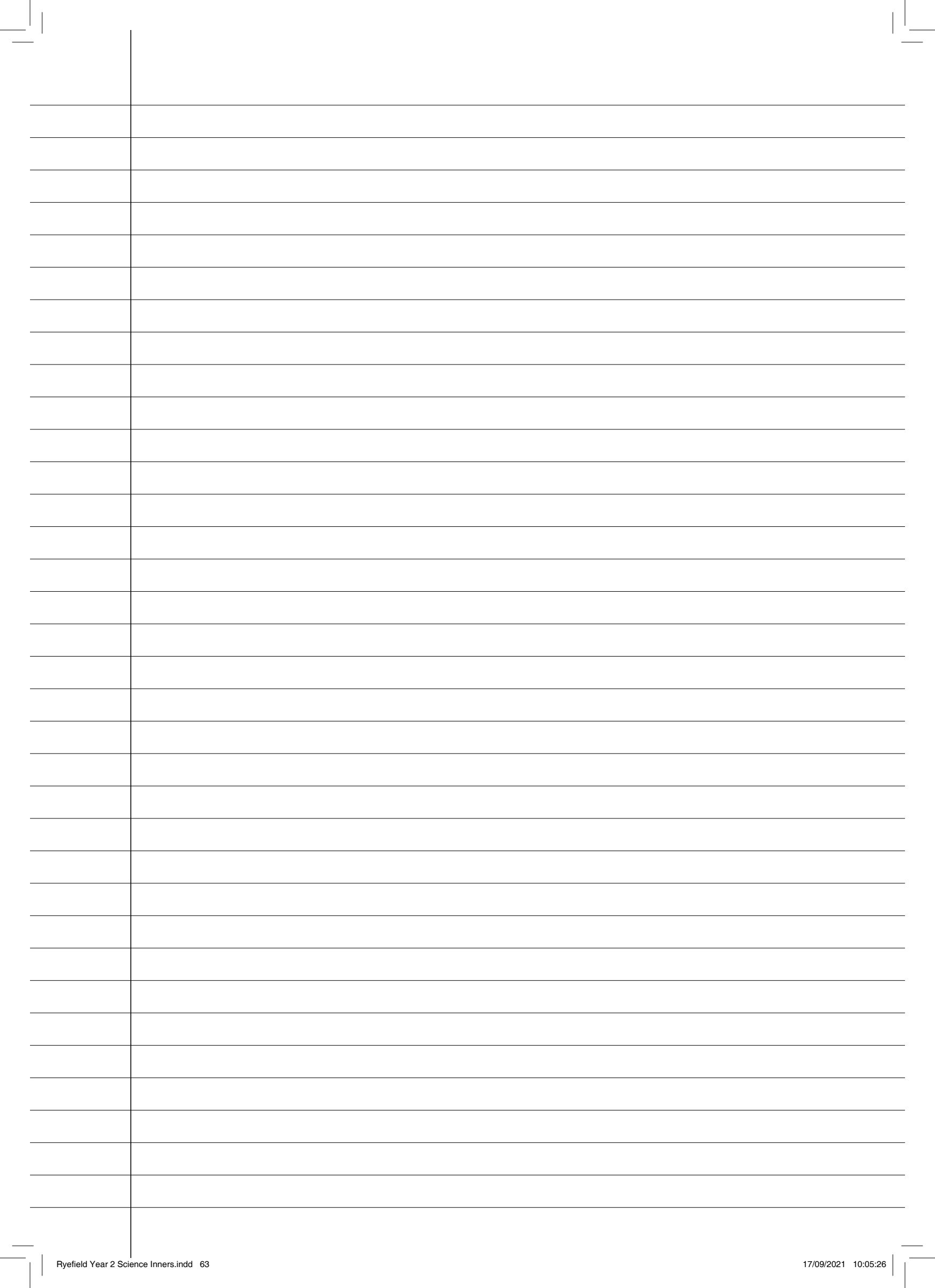


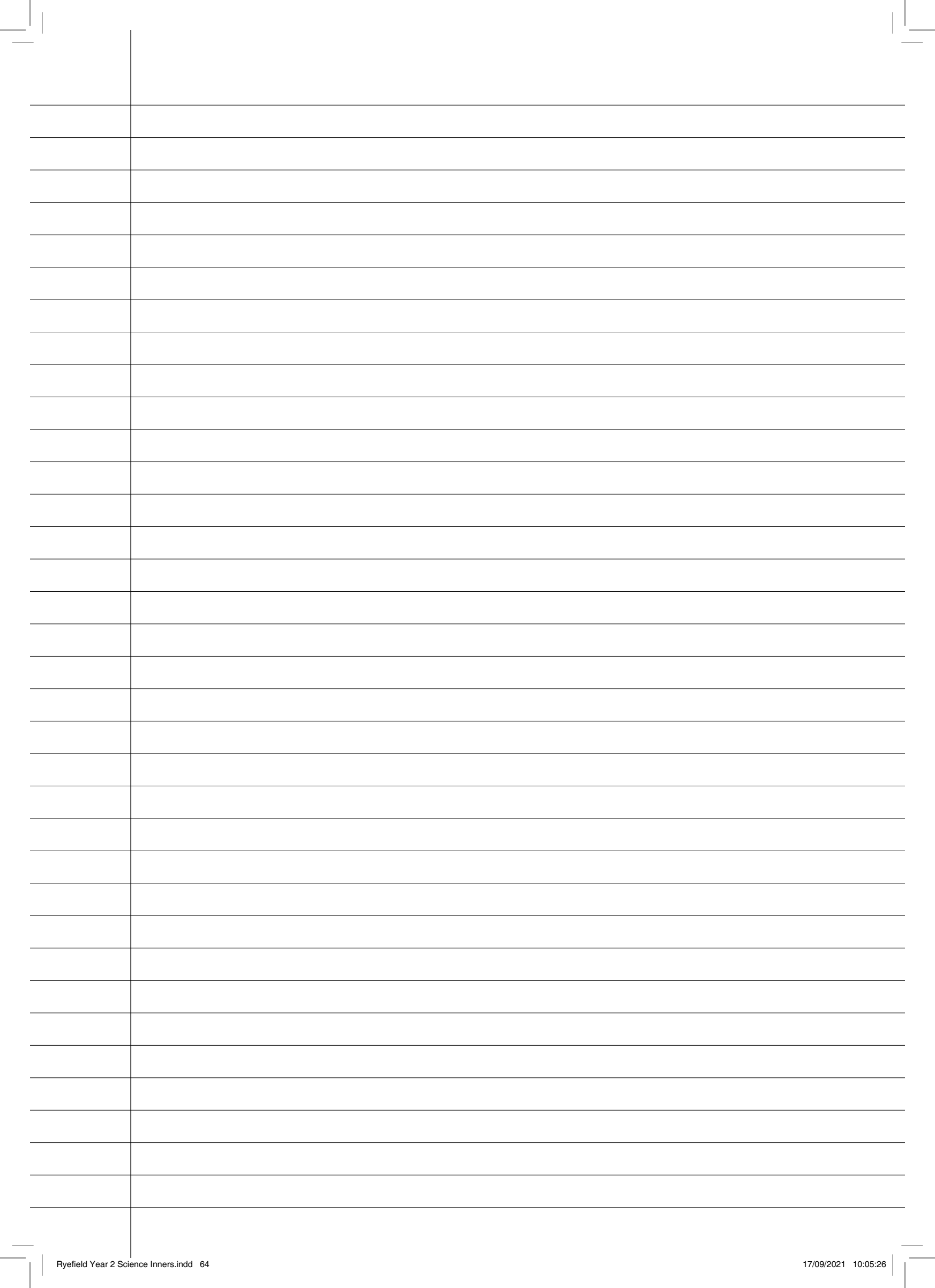


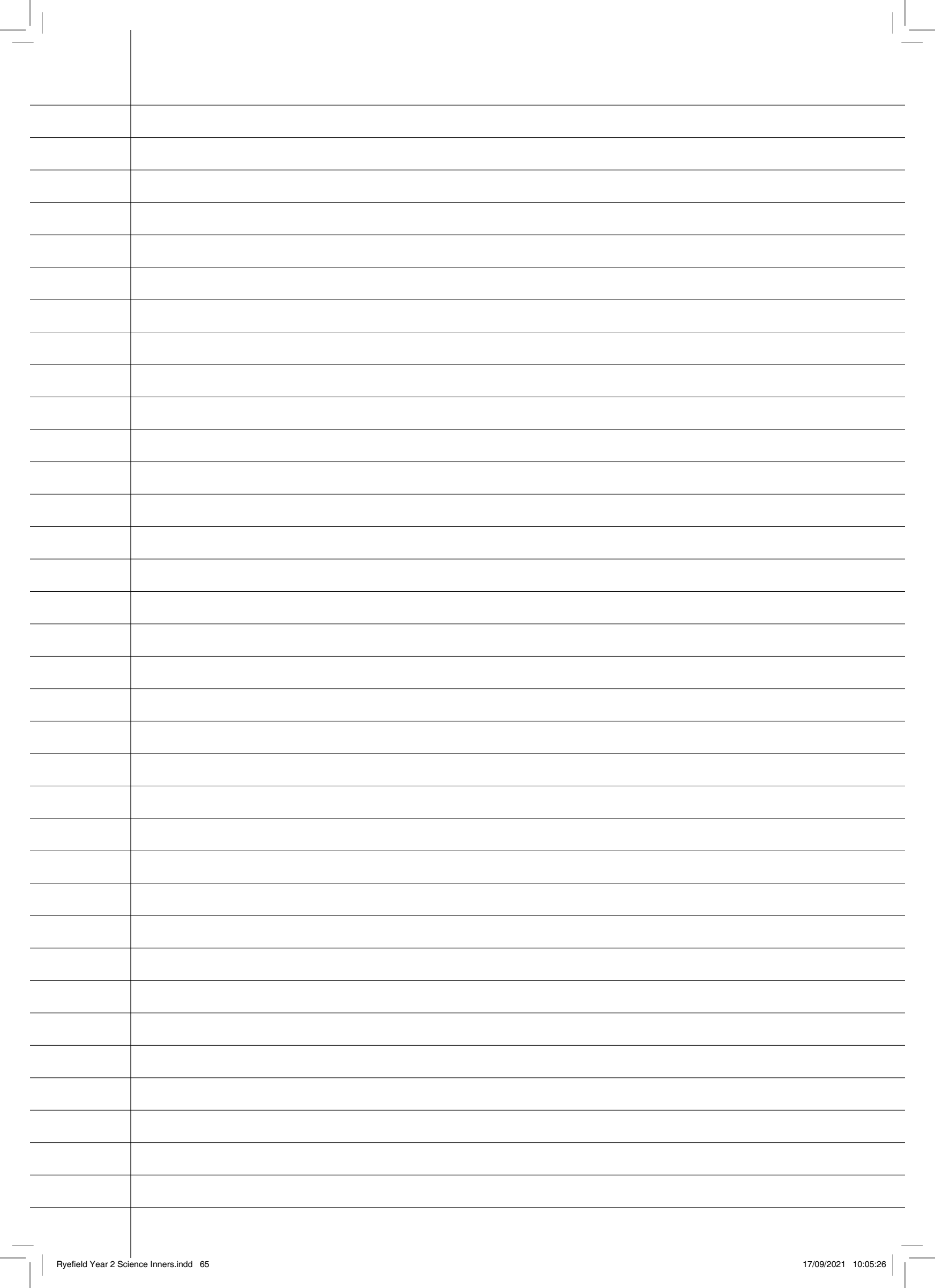




Show what you know. Recall two things on the topic.	Connect - can you link this to one more thing that you know.
1.	
2.	







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Science

Summer Term 2



Animals

Year 2 - Mammals

1) Can you list any mammals? (Draw one)



2) Which of these is an herbivore and why?



3) Which continent is this?

4) Name one of each of the following.

Reptile = _____

Amphibian = _____

Bird = _____

Fish = _____

5) What is the name of this line?



6) Can you name an Omnivore?

Key Vocabulary	
adult	A fully grown animal or plant.
develop	To grow and become stronger.
life cycle	The changes living things go through to become an adult.
offspring	The child of an animal.
reproduce	When living things make a new living thing of the same kind.
young	Offspring that has not reached adulthood.
live young	Offspring that has not hatched from an egg.
mammal	An animal that has a backbone, grows hair or fur, breathes air and feeds its young milk.
herbivore	An animal that eats plants.
carnivore	An animal that eats meat.
omnivore	An animal that eats plants and meat.

All living things **reproduce** and have **offspring**.

Some animals give birth to **live young**. Their offspring normally look like them when they are born.

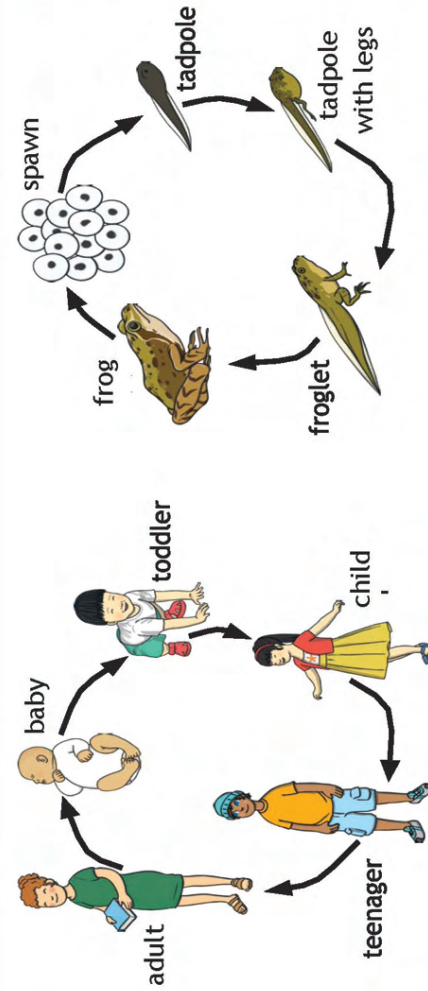


Some animals lay eggs which hatch into live young. This **young** then develops into an **adult**.

When these eggs hatch, some animals look like their adult, e.g. birds and reptiles.



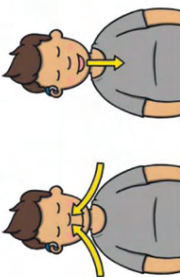
Other animals have offspring which do not look like them, e.g. fish and amphibians.




All young animals change at different

Key Vocabulary	
dehydrate	To lose water (dry out).
diet	The food and water that an animal needs.
disease	Illness or sickness.
energy	The power needed to carry out a task.
exercise	A physical activity to keep your body fit.
germs	Bugs that cause disease and illness.
heart rate	The number of times a heart beats in one minute.
hygiene	How clean something is (to stay healthy and stop disease and illness spreading).
nutrition	Food needed to live.
pulse	The beating of the heart that can be felt in your neck and wrist.


To look at all the planning resources linked to the Animals Including Humans unit, [click here](#).



air



water

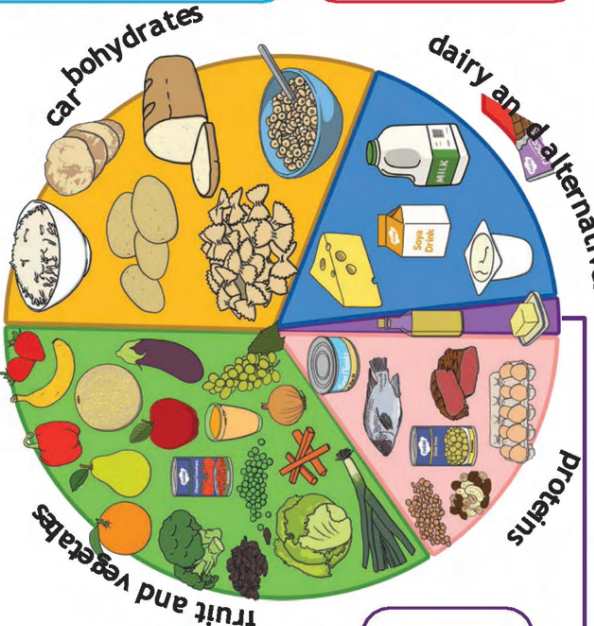


food

To stay alive, all animals have 3 basic needs:

Eatwell Guide

To grow into a healthy adult, we must eat the right types of food in the right amount and **exercise**.



fruit and vegetables

carbohydrates

dairy and alternatives

proteins


oils and spreads
Choose unsaturated oils and use in small amounts.

Water, lower fat milk, sugar-free drinks including tea and coffee all count.

6-8 a day

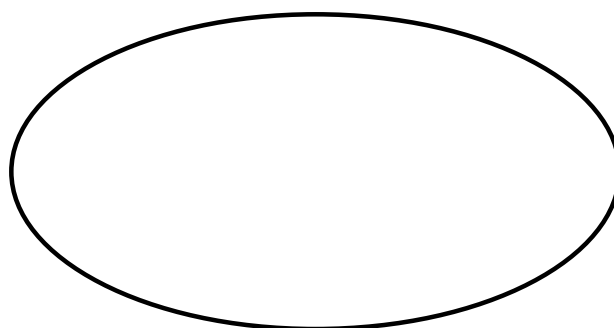
Eat less often and in small amounts.

To stop illness and infections spreading, we must be hygienic and keep ourselves clean.



National curriculum	Animals including humans
Year 1	identify and name a variety of common animals including fish, am-phibians, reptiles, birds and mammals
Year 1	identify and name a variety of common animals that are carnivores, herbivores and omnivores
Year 1	identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense
Year 1	describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)
Year 2	notice that animals, including humans, have offspring which grow into adults
Year 2	find out about and describe the basic needs of animals, including humans, for survival (water, food and air)
Year 2	describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene

Mind Map



Before starting the topic, add what you already know.

What is this picture telling me?



Year 2 - Mammals

1) Can you list any mammals? (Draw one)



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4) Name one of each of the following.

Reptile = _____

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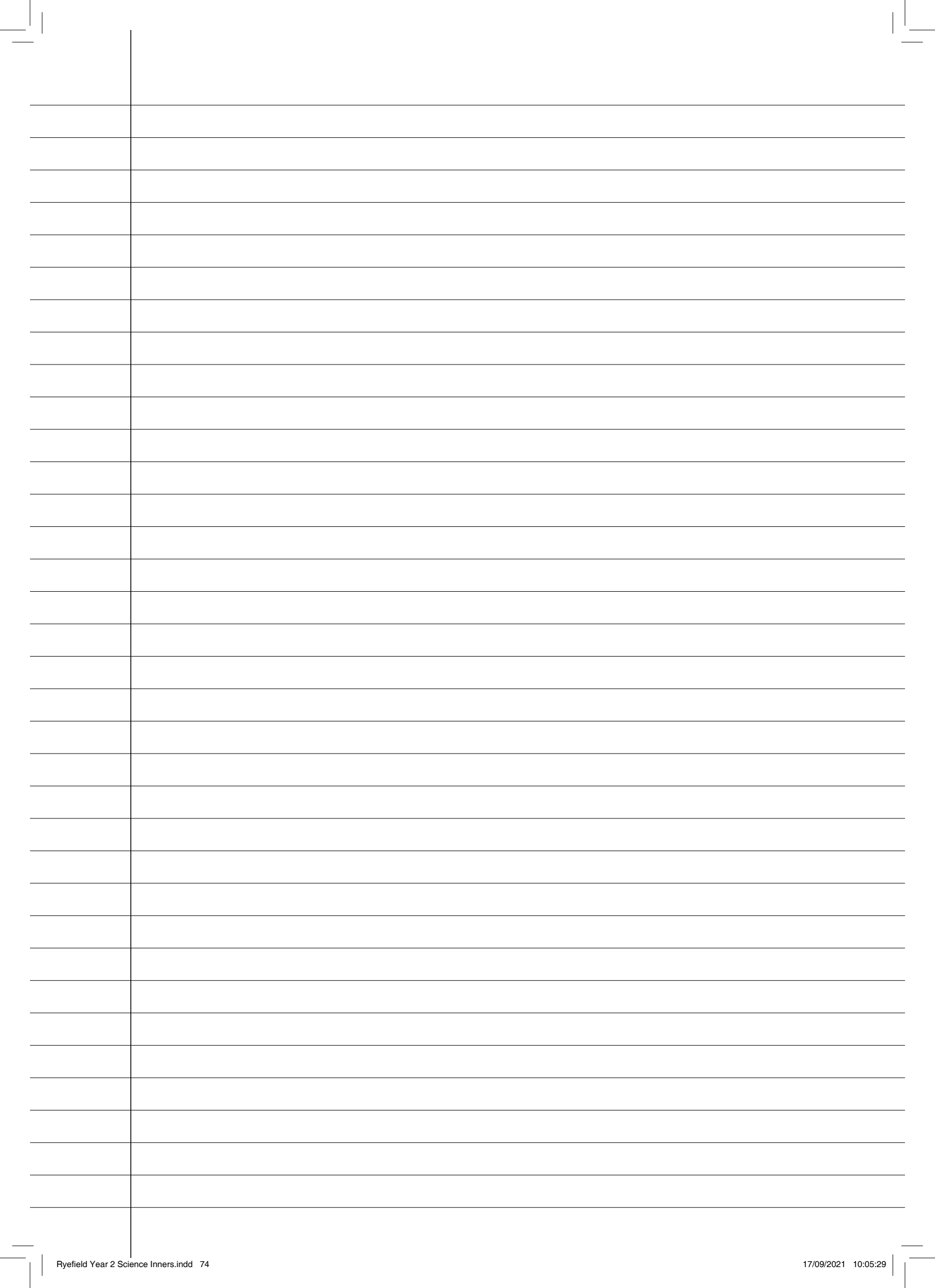
Bird = _____

Fish = _____

5) What is the name of this line?



6) Can you name an Omnivore?



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