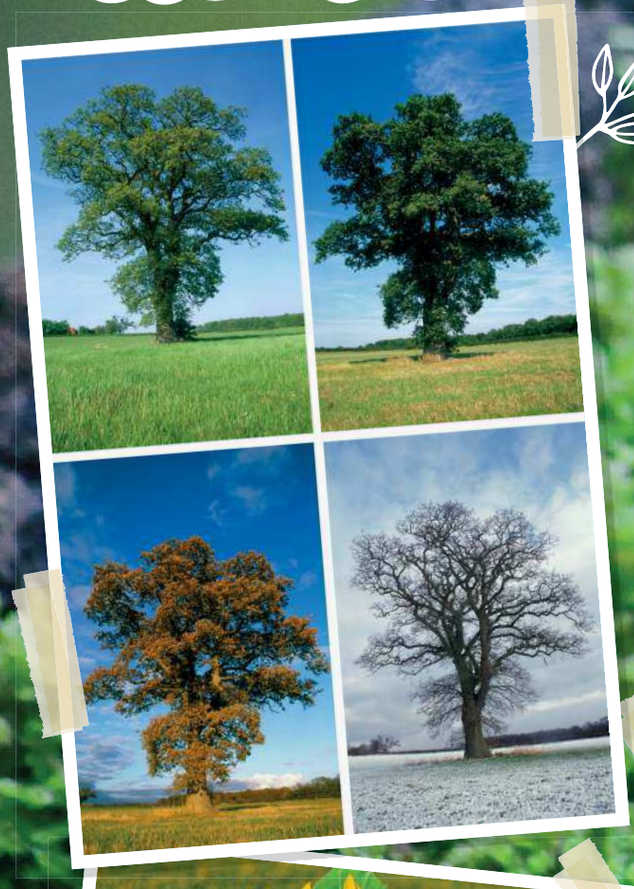
CAMBRIDGE

Cambridge University Press
978-8-490-36997-5 — Primary Natural Science Level 3 Pupil's Book
Paperback 9788490369975
Excerpt
More Information

4 HOW DO PLANTS GET THEIR FOOD?

Look and see...



Can you identify the seasons by looking at these trees?

How many of these plants can you name?

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-8-490-36997-5 — Primary Natural Science Level 3 Pupil's Book
Paperback 9788490369975
Excerpt
More Information

Which of these plants does not need a lot of water to survive?

Song
Parts of a plant

DOCUMENTARY
The plant kingdom

Investigate

In this unit, you will investigate the plants in your neighbourhood and make a field journal. To do this, you will:

- take photos or draw pictures of plants in your local area and identify their parts.
- classify these plants as flowering or non-flowering.
- describe the reproduction of flowering plants.
- gather all the information together in your field journal.

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-8-490-36997-5 — Primary Natural Science Level 3 Pupil's Book
Paperback 9788490369975
Excerpt
More Information

CAN YOU MAKE CELERY TASTE SWEET?

Plants are the largest group of living things on Earth. They can grow almost anywhere, for example in hot deserts or in dark forests. Plants can be tall, like trees, or tiny, like mosses. Most plants have **three parts**: roots, a stem and leaves.

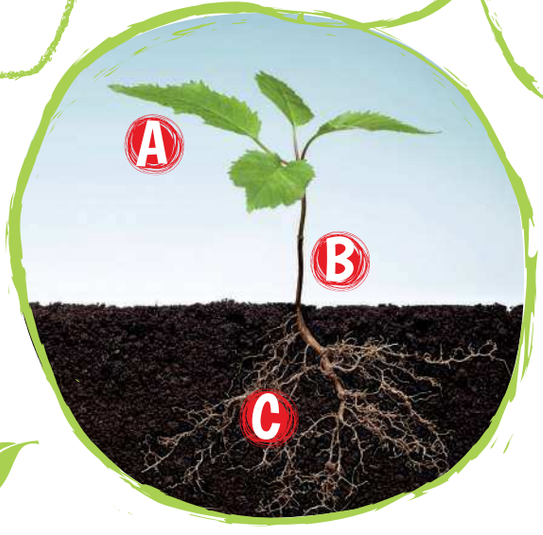
By the end of this lesson, you will know how to change the taste of celery from bitter to sweet!

A The **leaves** are where the plant makes its food, with the help of sunlight.

B The **stem** gives the plant support. Water and minerals are transported through the stem to the rest of the plant.

C The **roots** hold the plant in the ground. They also absorb the water and minerals that the plant needs.

Do you know what this process is called?



Try this ...

Check out this easy experiment! Eat a small piece of celery. Do you like its bitter taste? Put a celery stem in a glass of water mixed with sugar. Wait for a few hours and taste the celery again. Explain what has happened.

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE

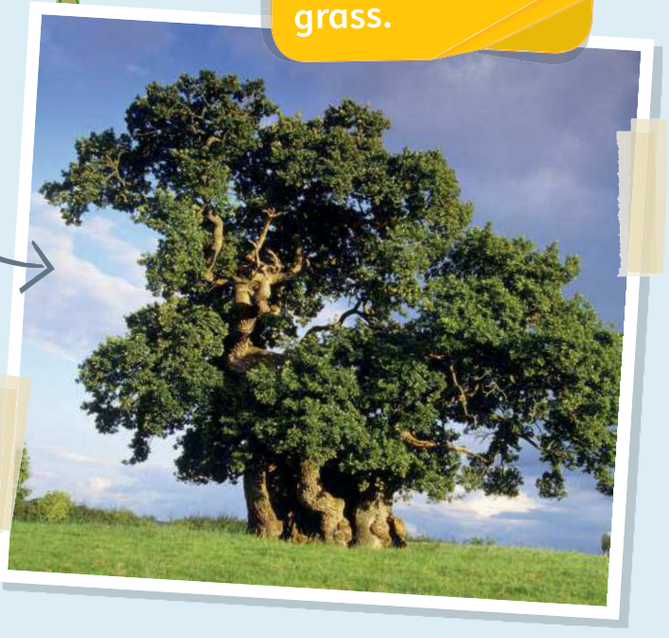
Cambridge University Press
978-8-490-36997-5 — Primary Natural Science Level 3 Pupil's Book
Paperback 9788490369975
Excerpt
More Information

HOW DO YOU KNOW HOW OLD A TREE IS?

By the end of this lesson, you will understand the differences between trees, bushes and grass.

We **classify** plants in different ways. One way we classify them is by their **stems**.

Trees are the tallest plants. They have high branches and a hard, thick stem called a trunk.



Did you know that you can find out how old a tree is by counting the rings inside its trunk? They have one ring for each year of their life.

Bushes are shorter than trees. They have low branches. Many bushes have more than one hard stem.

Grasses are also known as herbaceous plants.

Grasses usually have a short, thin stem. The stems are usually flexible and bend in the wind!

Investigate STAGE 1

- Find plants in your local area. Take photos of them. You can also draw pictures of them.
- Label the parts of the plants.
- In pairs, classify your plants as trees, bushes or grasses.

This plant is a …

You can see its …

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-8-490-36997-5 — Primary Natural Science Level 3 Pupil's Book
Paperback 9788490369975
Excerpt
More Information

HOW DO PLANTS REPRODUCE?

By the end of this lesson, you will know how some plants reproduce without seeds.

We can also classify plants by how they reproduce. There are two groups: **flowering plants** and **non-flowering plants**.

FLOWERING PLANTS

Angiosperms

- Produce **flowers** and **fruit**.
- **Seeds** develop inside the fruit.
- Examples include apple trees and roses.

Use the internet to find more examples of angiosperms and gymnosperms.

Focus on the correct pronunciation of *angiosperm* and *gymnosperm*. How many syllables does each word have?

Gymnosperms

- Do not produce fruit.
- Seeds develop inside **cones**.
- Most gymnosperms are evergreen trees.

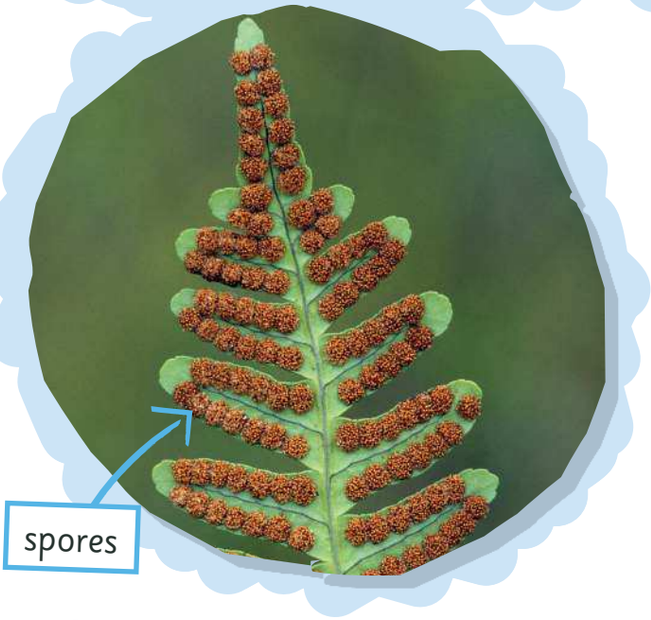
© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-8-490-36997-5 — Primary Natural Science Level 3 Pupil's Book
Paperback 9788490369975
Excerpt
More Information

NON-FLOWERING PLANTS

- Do not reproduce with seeds.
- Reproduce with **spores**.
- Plants release[1] spores into the air.
- Examples include **mosses** and **ferns**.



Did you know that you can grow a plant without using seeds or spores? Cut the top off a carrot and place it on a plate with a little water. Observe what happens.

Spores are very small but very resistant. After a forest fire, ferns and mosses are the first plants to grow again.

Look back

Which of the plants on pages 42–43 are non-flowering?

Find the cone hidden in the unit.

Investigate STAGE 2

This is a flowering plant. It is an angiosperm because …

- **Look at the images of your plants from Stage 1.**
- **In groups, classify them as flowering or non-flowering. Include extra interesting information.**

* *If you are not sure how to classify your plants, use the internet to help you.*

[1] **to release:** to allow something to move freely and independently

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-8-490-36997-5 — Primary Natural Science Level 3 Pupil's Book
Paperback 9788490369975
Excerpt
More Information

WHY ARE PETALS SUCH BEAUTIFUL COLOURS?

By the end of this lesson, you will know the role petals play in the reproduction of flowering plants.

Did you know that the **reproductive organs** of a flowering plant are inside its **flowers**? These reproductive organs make seeds that later grow into new plants.

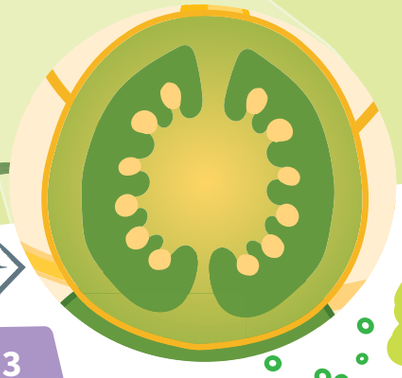
Petals come in lots of different colours, which attract insects.

The **stamens** produce pollen. Insects carry the pollen to other flowers.

The **carpel** is where the seeds grow. It has two parts: the **stigma** and the **ovary**.

Sepals are small leaves. They protect the flower before it opens.

When pollen lands on the stigma of a plant, it travels to the ovary. The ovary grows into a fruit. The seeds develop inside the fruit.



Pollen is also transported by the wind.

Investigate STAGE 3

- Look for an example of an angiosperm in your neighbourhood. Bring a sample into school.
- Dissect and examine it using a magnifying glass.
- Separate the different parts. Use transparent sticky tape to stick the reproductive organs onto small pieces of paper and label them.

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-8-490-36997-5 — Primary Natural Science Level 3 Pupil's Book
Paperback 9788490369975
Excerpt
More Information

TIME TO WAKE UP!

Hands on...

Before you start

Germination is when a seed begins to grow into a plant. A seed will only grow into a plant if the conditions are correct.

Materials

four small cups, four seeds (beans, lentils, chickpeas, etc.), soil, stickers, water

Method

1 Put a seed into each cup. Put soil into three of the four cups.

2 Label the cups: *no water*, *no light*, *no soil* and *control*.

3 Place the *no light* cup in a cupboard. Place the other cups in a sunny part of the room.

4 Add a little water to each cup, except the one marked *no water,* every day.

5 Check the results after a week.

Conclusions

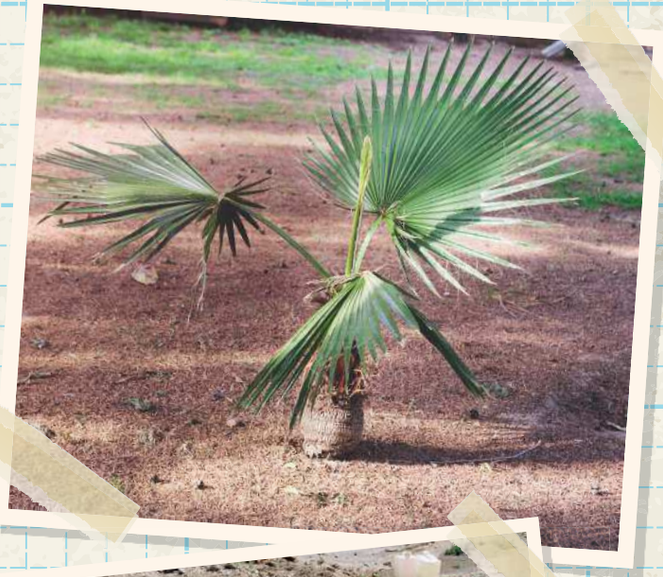
Which beans have germinated?

Which have grown the best?
Did any seeds die?

What do seeds need to germinate?

This experiment shows us that seeds need ...

Archaeologists in Israel found some seeds when they were excavating ancient ruins. They planted the seeds and a few weeks later, a plant began to grow. The plant was a palm tree and the seeds were about 2,000 years old.

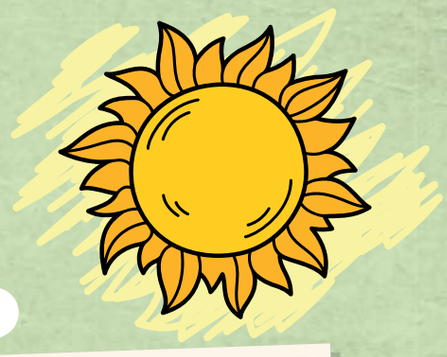


© in this web service Cambridge University Press www.cambridge.org

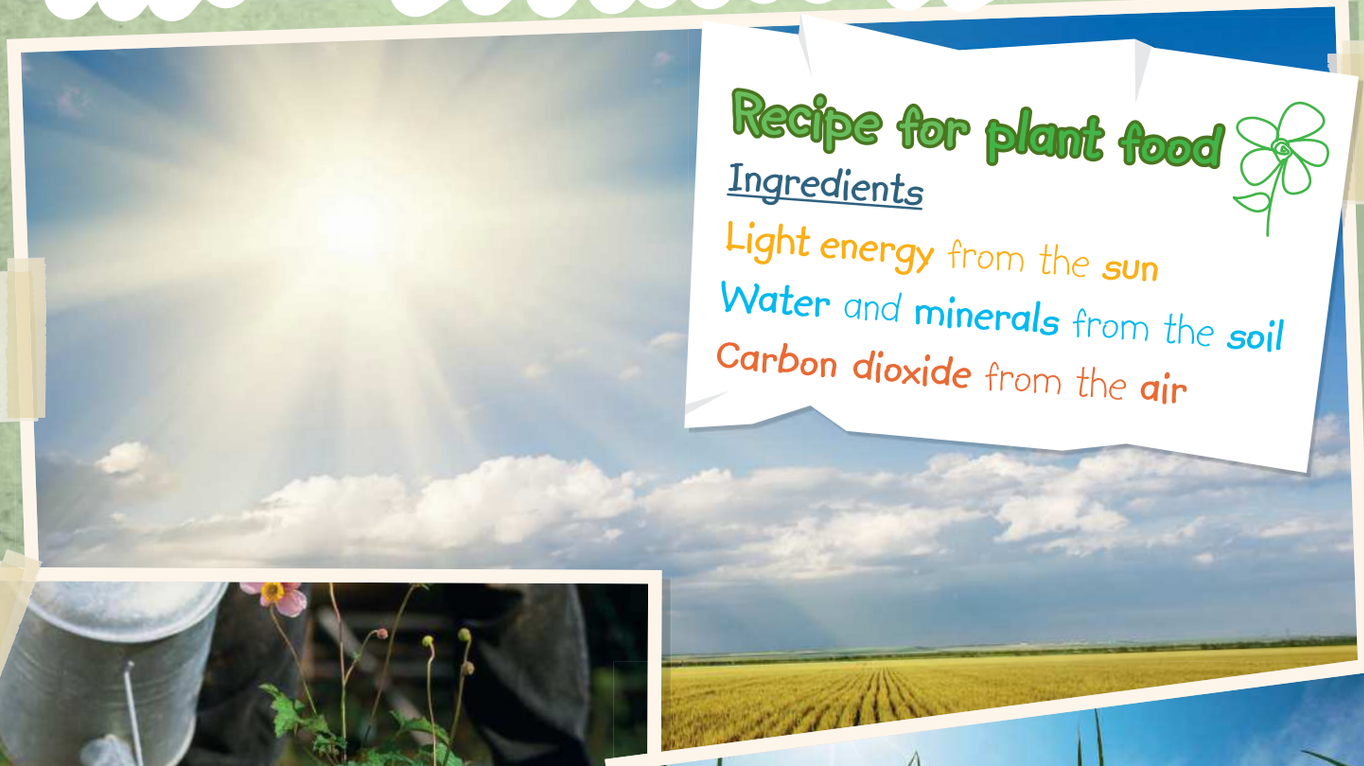
CAMBRIDGE

Cambridge University Press
978-8-490-36997-5 — Primary Natural Science Level 3 Pupil's Book
Paperback 9788490369975
Excerpt
More Information

WHAT IS PHOTOSYNTHESIS?



How do plants get the **food** they need to grow? Animals eat plants and other animals. But what do plants eat?



Recipe for plant food

Ingredients

Light energy from the sun

Water and minerals from the soil

Carbon dioxide from the air

Plants make their own food. This process is called **photosynthesis**.

For photosynthesis to take place, plants need: **water**, **minerals**, **light energy** from the sun, and **carbon dioxide**.

Where do plants get the things they need to make their food? Which parts of a plant help to get these things? Look at the recipe on this page to help you.

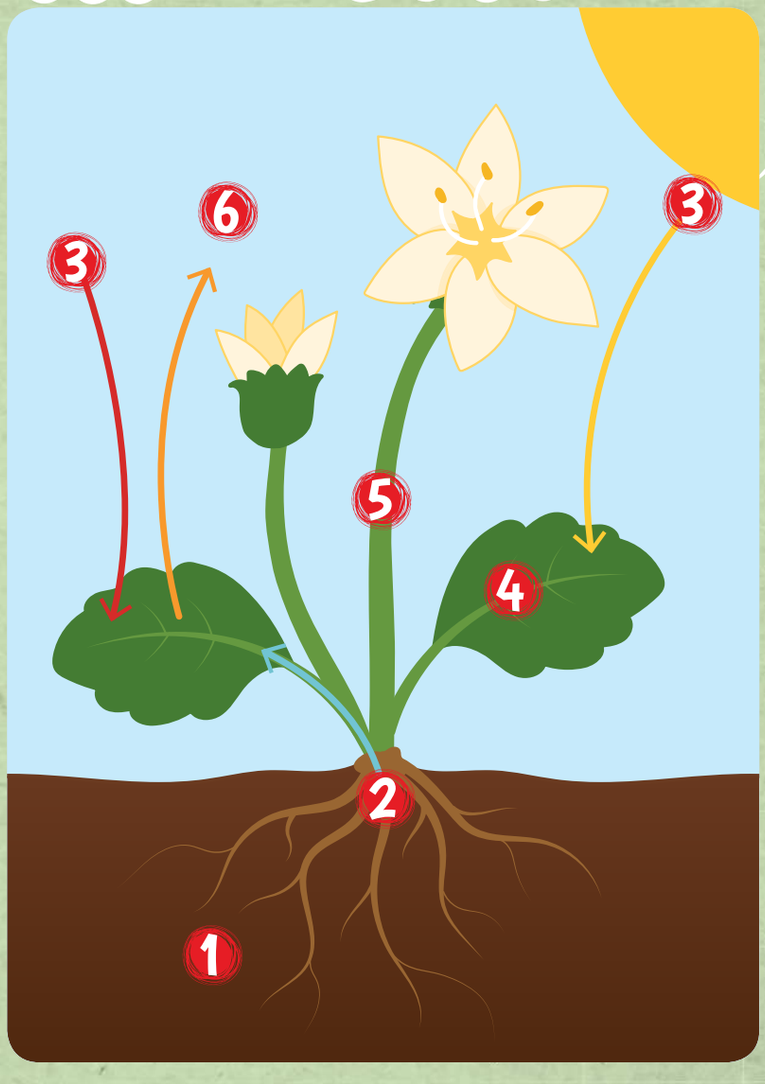
© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-8-490-36997-5 — Primary Natural Science Level 3 Pupil's Book
Paperback 9788490369975
Excerpt
More Information

By the end of this lesson, you will know what ingredients a plant needs to make its food.

Let's look at how photosynthesis works.



1 Water and minerals are absorbed from the soil by the roots.

2 They are then transported through the stem to the leaves.

3 The plant takes in[1] light energy from the sun and carbon dioxide through the leaves.

4 The light energy helps the water, minerals and carbon dioxide react to make the food.

5 The food is then transported to all parts of the plant.

6 Photosynthesis also produces oxygen. The plant releases the oxygen into the air.

Why is the oxygen produced by plants important for the planet?

Investigate STAGE 4

- Bring in an angiosperm from your neighbourhood. Try to include the roots.
- Examine the leaves, stem and roots with a magnifying glass.
- In your notebook, write a paragraph explaining how these parts help the plant make its own food.

Photosynthesis is made up of two words. Photo means light and synthesis means to put together.

[1] **to take in something:** to absorb something

© in this web service Cambridge University Press www.cambridge.org

CAMBRIDGE

Cambridge University Press
978-8-490-36997-5 — Primary Natural Science Level 3 Pupil's Book
Paperback 9788490369975
Excerpt
More Information

Language skills

1 **Rewrite the questions in your notebook and answer them.**

Is a rose prettier than a cactus? Yes, it is.

a Is a rose **pretty** than a cactus?
b Is a tree **short** than a bush?
c Are grasses **thin** than trees?
d Are trees **tall** than daisies?
e Are grasses **strong** than trees?

Remember the rules
short – shorter
big – bigger
pretty – prettier

2 **What is it made of? Look at the photos and write sentences in your notebook.**

It is made of …

a 

b 

3 **Read the conversation and choose the best answer.**

1 **Sarah:** Oh no! My plant is dying!
Chris: .....
2 **Sarah:** I don't understand. It's been next to the window and had plenty of light.
Chris: .....
3 **Sarah:** Of course. It's had plenty of air too.
Chris: .....
4 **Sarah:** I did forget! I'm so silly.
Chris: .....

a Did you leave the window open?
b I'll buy you another one! But don't forget to water it.
c That's a pity.
d That's strange. Maybe you forgot to water it.
e Great!

© in this web service Cambridge University Press www.cambridge.org

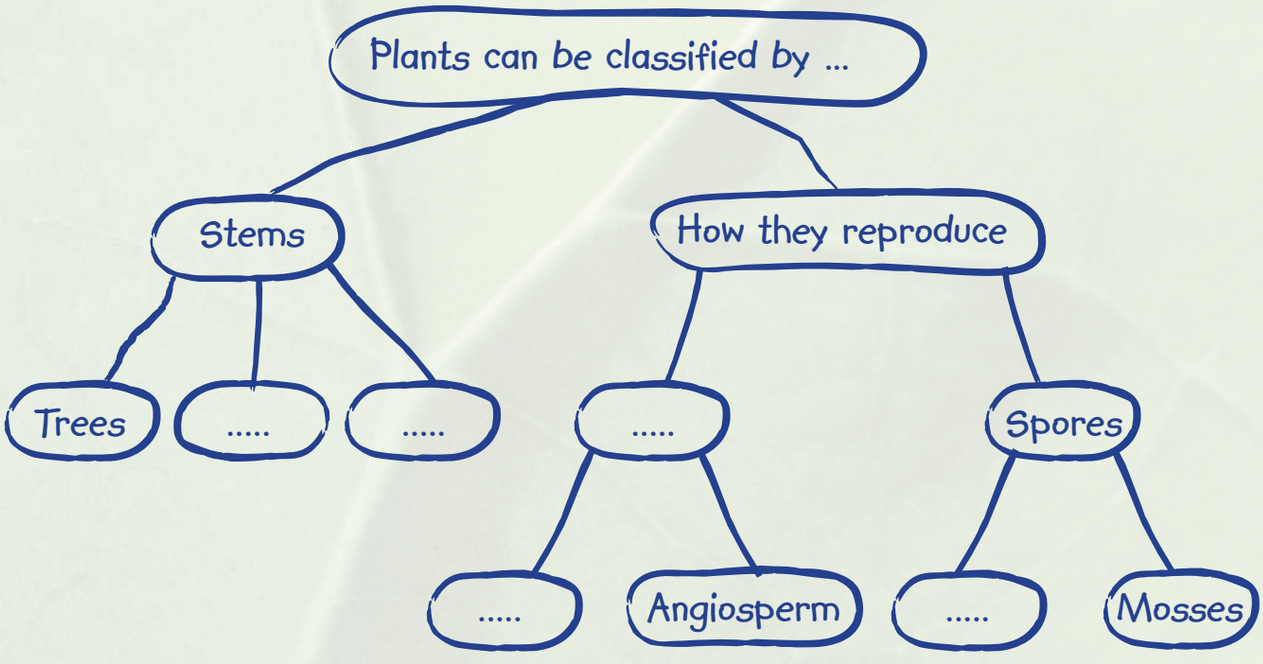
CAMBRIDGE

Cambridge University Press
978-8-490-36997-5 — Primary Natural Science Level 3 Pupil's Book
Paperback 9788490369975
Excerpt
More Information

Review

1 **Complete the mind map in your notebook using the words in the box.**

seeds bushes ferns gymnosperm grasses



2 **Choose the correct word and write the sentences in your notebook.**

a Plants make food in their *leaves* / *stems.*
b *Angiosperms* / *Gymnosperms* produce seeds inside cones.
c Ferns reproduce using *spores* / *seeds.*
d *Trees* / *Bushes* have a thick stem called a trunk.
e Plants produce *carbon dioxide* / *oxygen* during photosynthesis.

Investigate FINALE

- Organise all your information in your field journal.
- Separate your work into sections: ***parts of a plant***, ***classification***, ***nutrition*** and ***reproduction.***
- Include your photos, drawings, paragraphs and labelled plant parts.
- Exchange journals with a partner, read their information and ask them questions.

Assessment link

Go to page 84 for more activities.

© in this web service Cambridge University Press www.cambridge.org