



Before we get started...

- To keep background noise to a minimum your microphone and webcam is automatically disabled.
- You can communicate with us via the **chat** for any technical assistance.
- For questions about the content of the presentation please utilise the **Q&A** function.
- There will be some time for questions at the end of the session.
- This session is being **recorded** and will be available to view again on demand.



Your presenters



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Pearson

» Pearson

Pearson International Primary Science: Pedagogy and Practical Applications

Leah Hopkinson and Kevin Hiatt

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iProgress

Why choose Pearson Edexcel?

6,500+



Partner schools,
universities and
employers

110+



Countries take
Pearson Edexcel
qualifications

3.5M



Students sitting
Pearson exams
annually

10M



Exam papers
marked on behalf of
the DFE*

*Department for Education in England

For international schools

International qualifications based on British best practice

Curriculum and qualifications that are international in outlook and content, yet grounded in the pedagogy, ethos and aims of the English national curriculum, the most popular curriculum in the world.



A learning continuum with progression at its heart

The iProgress journey provides students with clear structured progression and consistent support at every stage of their learning, so at each level, you and your students are prepared.



Meeting the needs of more students with choice

The only awarding organisation to offer modular or linear qualification routes at International GCSE and a choice of paper or onscreen assessment, so you can meet the needs of more students.



What is iProgress?

Our complete series of academic qualifications, curricula and resources for international schools.

It provides a consistent pathway from ages 3 to 19 for schools offering a British style programme, with world class support services, for students and teachers across the world.



What is iProgress?



Qualifications and exam support services

Curricula and published resources (digital and print)

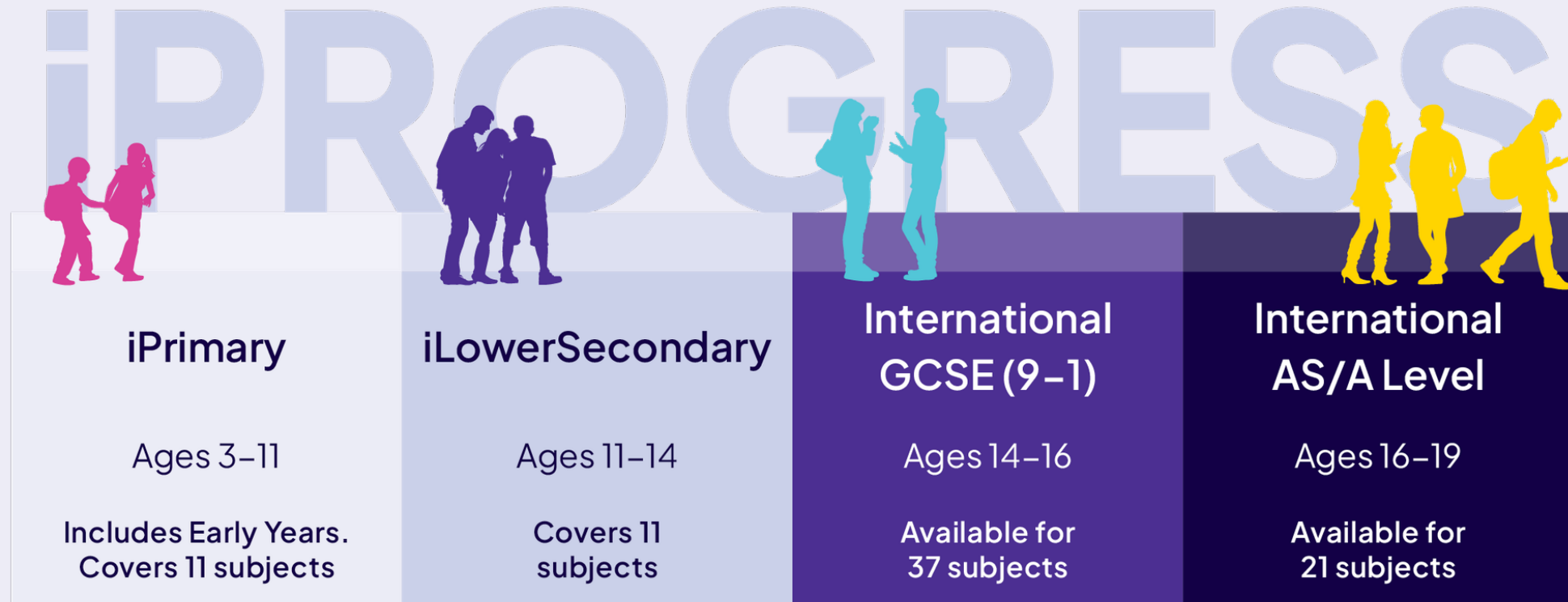
Training and Professional Development

02

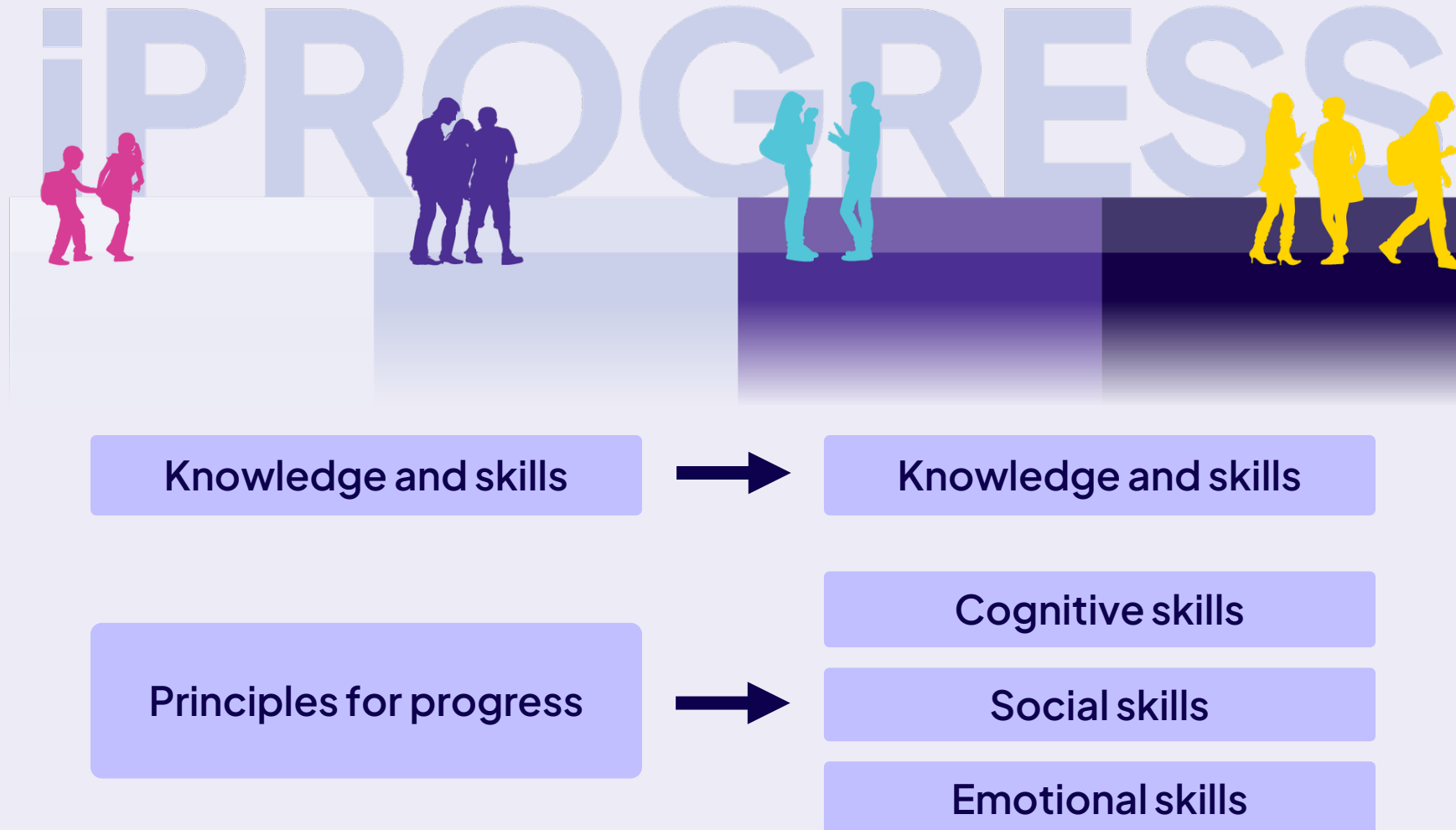
iPrimary as part of iProgress

Laying the early foundations for future success

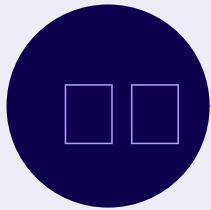
How did we create iPrimary and iLowerSecondary?



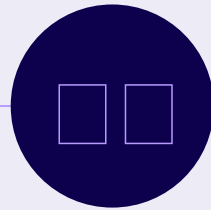
How do we prepare students for the future?



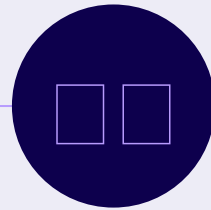
Developed using research-based principles to ensure learner progress



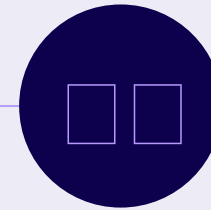
Engaging all



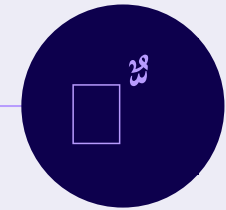
Differentiation



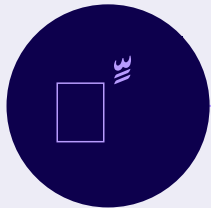
Enabling independent learning



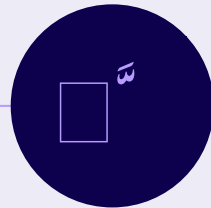
Effective questioning



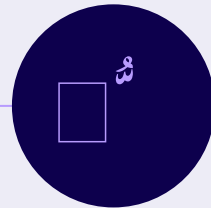
Teacher talk



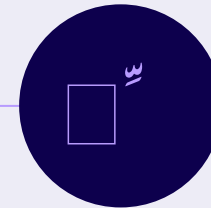
Collaborative activities



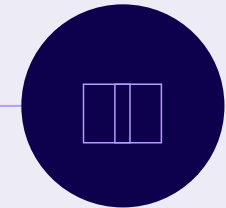
Teacher demonstration



Developing thinking skills



Reflecting on learning



Feedback (in both directions)

03

Primary Science – the challenges

What percentage of children name Science as their favourite subject?

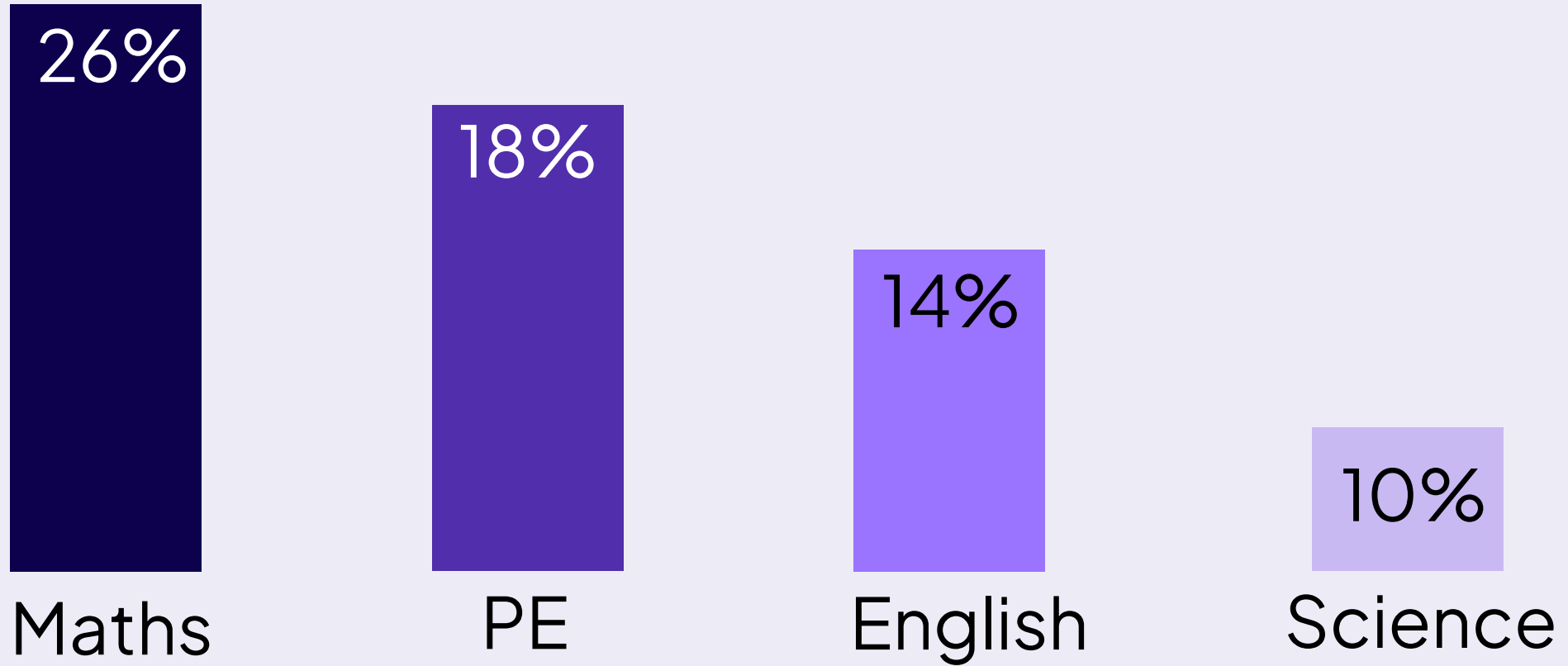


17%



8%

What are the favourite subjects?

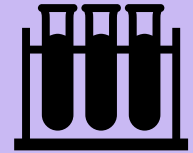


Three key themes

Engaging learners in science with a wide range of resources all in one place



Embedding the enquiry-based/investigative approach



Supporting non-specialist science teachers in delivering a comprehensive curriculum



**What is the biggest
challenge teachers face in
teaching primary science?**

What is the biggest challenge teachers face in teaching primary science?

Delivering a comprehensive curriculum

Finding all the necessary resources
(worksheets/videos/front of class materials)

Finding enough time to cover content

Assessing learner progress

Lack of professional development

Making science fun

Incorporating digital content

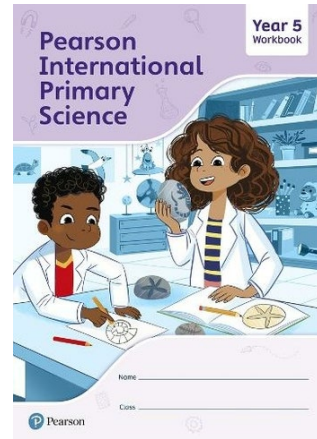
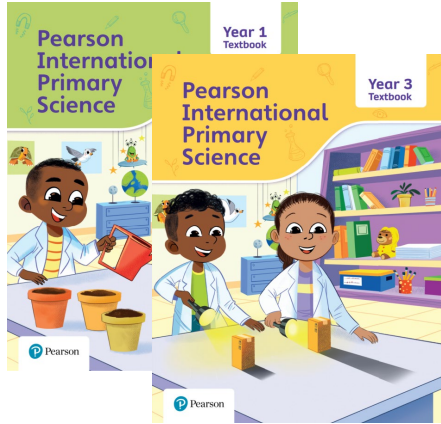
Embedding an enquiry led approach

Teachers not being subject specialists

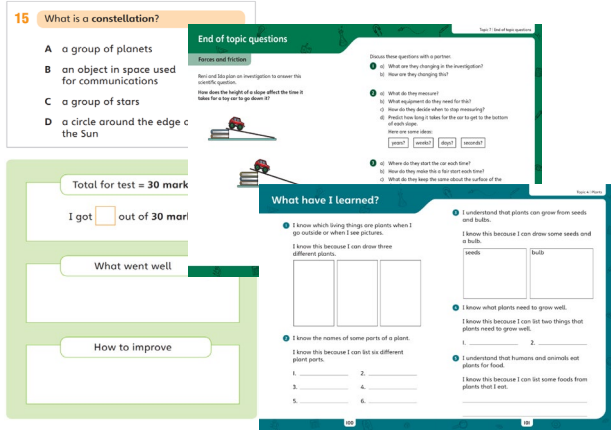
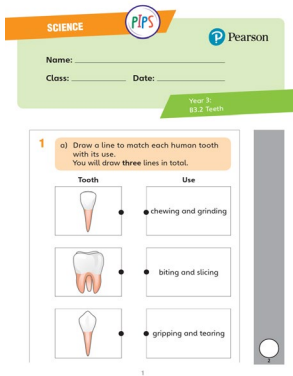
04

Pearson International Primary Science

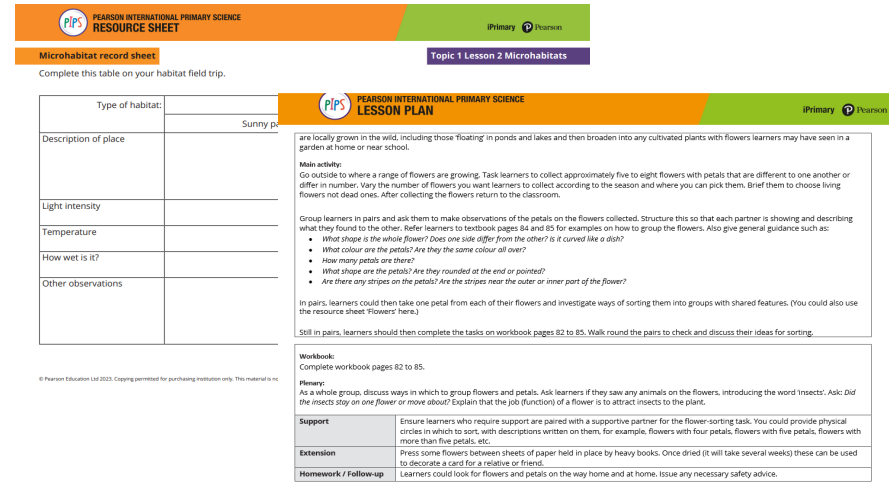
What is PIPS?



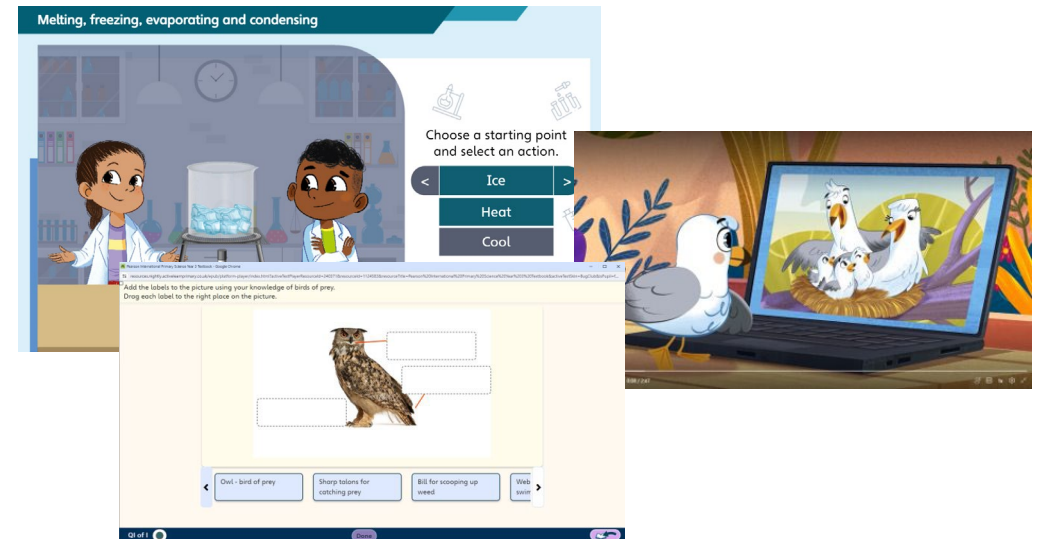
Textbooks and workbooks



Assessments



Lesson planning, resource sheets and answers



Digital interactives

05

Best practice teaching strategies

Best practice strategies in teaching primary science

Engaging learners with a wide range of digital and print resources

Embed an enquiry-based approach and encourage active learning

Effective and consistent formative assessment to inform teaching

06

Strategies within Pearson Primary Science

» Pearson

**Engaging learners
with a wide range
of digital and print
resources**



Why is using a range of resources helpful in engaging learners?

Different learning styles

Variety not monotony

Interactivity which helps embed learning

Instant feedback and recognition

2 Growing plants

Plants differ in many ways, but they all need certain things to grow well. Let's find out more about growing plants.

Plants can be tall, like trees, or very small. We can group plants in many ways just by looking at their leaves or flowers. Plants are living things, so they need water to stay alive.

The picture shows some leaves in glasses of coloured water. How do you know they are taking up the coloured water? What evidence can you see?

18 19



Salt from water using evaporation X Close

Now, filter the seawater to get rid of bigger particles.

A filter A heat source to boil the water A heat proof pan Glass Lid A cup to collect the water

Next

Year 3 Textbook

Pearson International Primary Science

Pearson

How to engage learners with a variety of resources?

Textbook

Quiz questions

Workbook

Worksheets

Topic videos

Range of assessment opportunities

Virtual labs

Lesson plans

Textbooks

Meet the mascots

Year 1 | Meet the mascots!

Asha

This is Asha. She is good at science and helps others to **understand** things. Asha works **accurately** and will help you to do that too.



Sully the gull

Wave hello to Sully. He is a type of bird called a gull. Gulls can be found all over the world! He is **curious**. Sully can fly up high or swoop down low to question things from different viewpoints.



Marco

Meet Marco! He is **analytical**. He thinks carefully about how things in the world work. He likes **investigating** and tries to get reliable results by doing fair tests.



Zorp the alien

This is Zorp! Zorp enjoys **exploring**. Zorp knows a lot about our Solar System and likes to share that knowledge.

Victor the giant tortoise

Say hello to Victor. He is a giant tortoise from the Galapagos Islands. Victor is 120 years old! Victor is **observant** and keen to explore the world beyond his island.



And finally ... you!

You are a very important part of these books. We hope you enjoy exploring and investigating science, asking lots of questions and having fun!

Structured and comprehensive content that provides logical flow of information

Range of activity formats and styles (independent, pair and group work)

Connect theory to real world context – relevant to learners experience

Mascots bring learning to life

Interactive quiz questions

- Every lesson has an accompanying interactive hotspot quiz question launched from ebook

Owls

Topic 1 | Animal adaptations

Owls are birds of prey.

curved beak to tear food to eat

Large wings help owls to fly slowly to find food.

Look at the colour of this owl's feathers. We say it is **camouflaged**.

Camouflage means being a similar colour to what is around it.

Birds of prey are birds that use sharp talons and curved beaks to hunt and kill other animals to eat.

Look at the owl's eyes. They face forwards like human eyes. This gives the owl a very good sense of sight.

softer wing feathers

Owls' large wings are almost silent when they fly.

sharp talon on strong foot to catch other animals

Owls spend most of their time hunting for food.

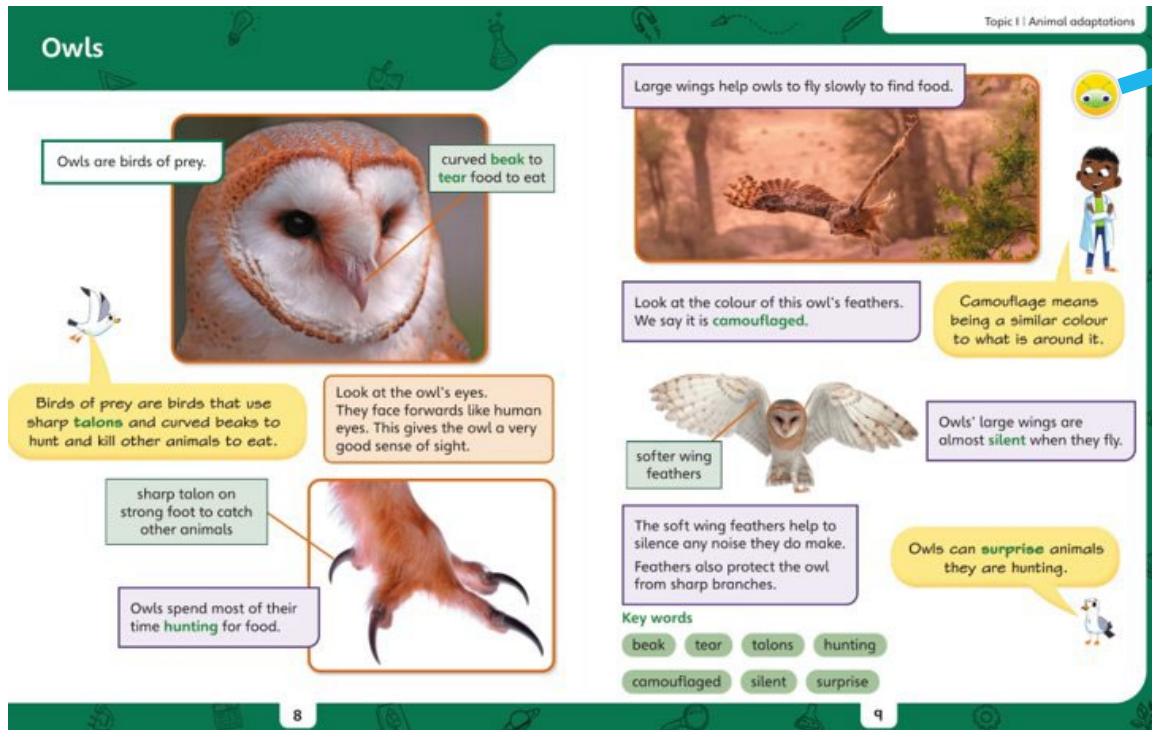
The soft wing feathers help to silence any noise they do make. Feathers also protect the owl from sharp branches.

Owls can surprise animals they are hunting.

Key words

beak tear talons hunting

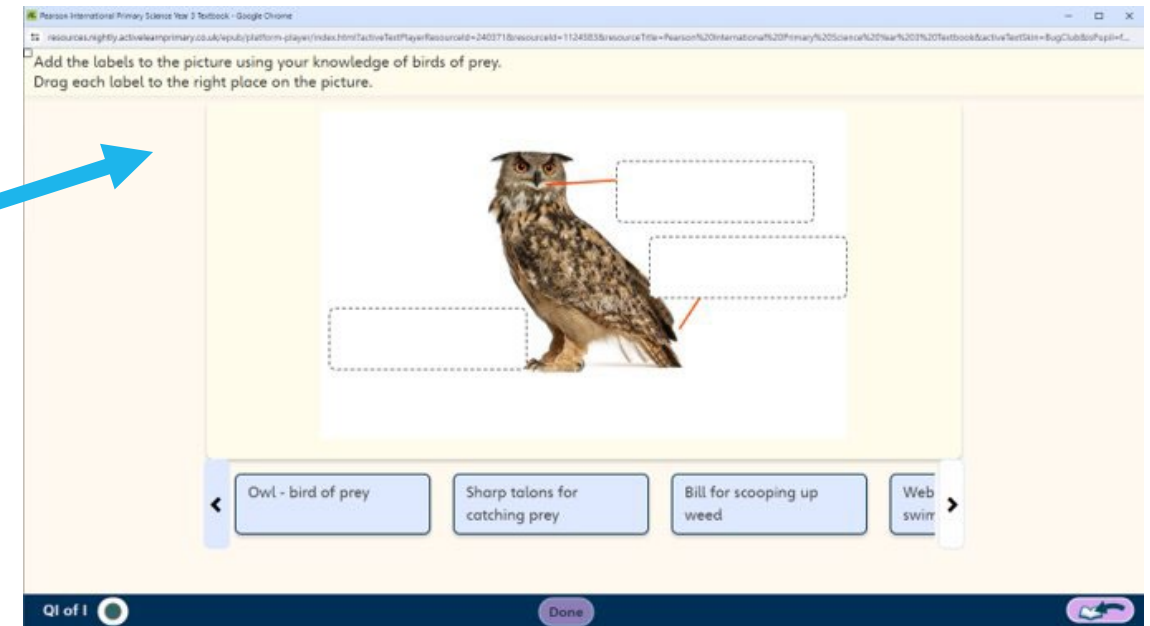
camouflaged silent surprise



Pearson International Primary Science Year 3 Textbook - Google Chrome

resources.rightflyactive.com/primary/platform-player/index.html?activeTextPlayerResourceId=240371&resourceId=1124583&resourceTitle=Pearson%20International%20Primary%20Science%20Year%203%20Textbook&activeTextState=BugClubApplet...

Add the labels to the picture using your knowledge of birds of prey. Drag each label to the right place on the picture.



Owl - bird of prey

Sharp talons for catching prey

Bill for scooping up weed

Web swirr

Q1 of 1

Done

Which is the odd one out?

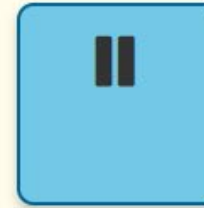
Click on one picture and explain why you chose it.



it does not have the same shape|



Which sound is made by the source in this picture?
Click on each answer to hear it, then choose which is the right one.



What happens in order for us to hear a sound?
Drag the tiles to put them in the right order.



An object vibrates.



The air around the object vibrates.



The air inside our ear canal vibrates.



Our ear detects the sound.



Sort these sounds into high pitched and low pitched.
Drag each label into the correct box.

High pitched

- ✓ mouse squeaking
- ✓ whistle
- ✓ chick cheeping

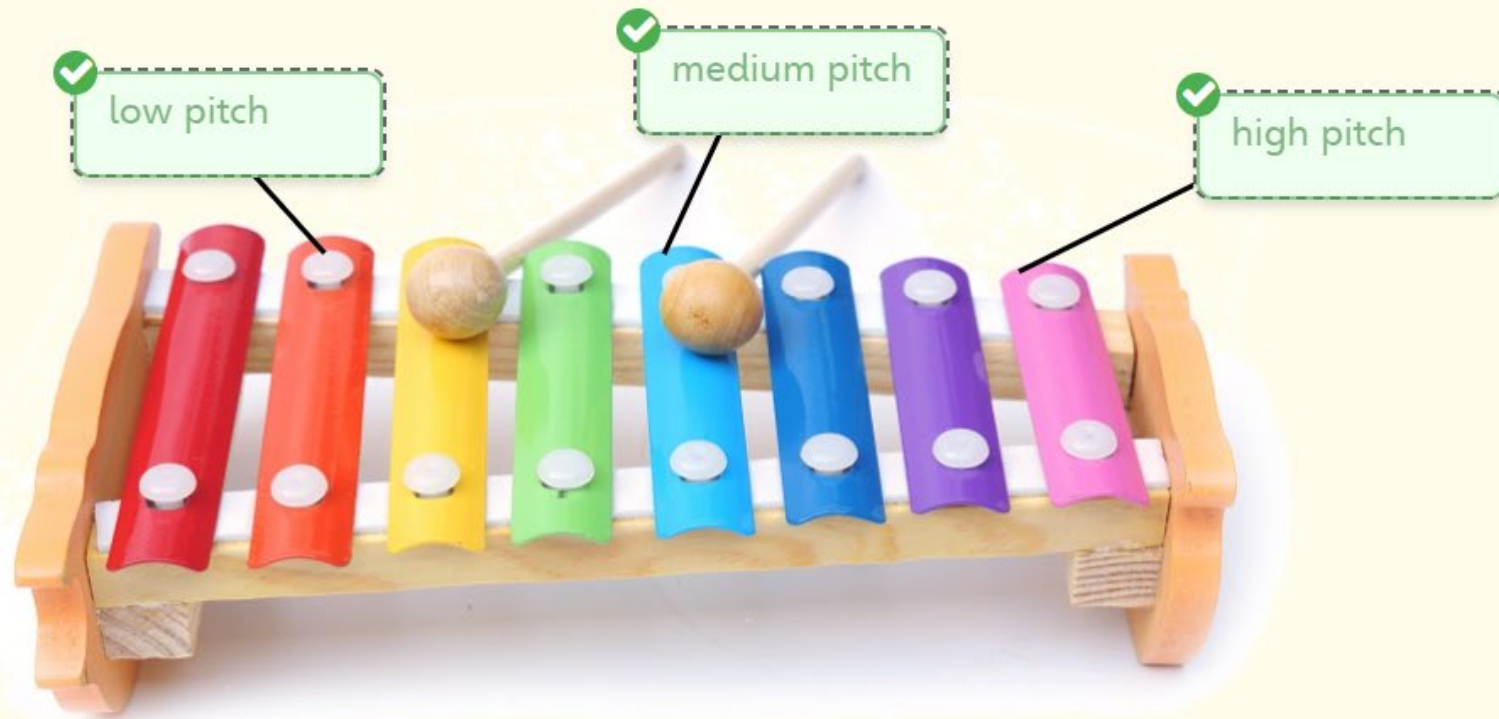
Low pitched

- ✓ train rumbling
- ✓ lion roaring
- ✓ bass drum

That's correct. Well done!



Imagine playing this xylophone. Which bars would make the highest pitched sounds?
Drag each label to the right place on the picture.



Engaging topic videos

- Every topic has an animated topic video where the mascots provide entry to key learning objectives and vocabulary in context



What other things do you think **all** living things can do?

Can you see something else that is **not** a living thing?






Interactive virtual investigations

- Recreation of 21 core investigations in a digital format

Melting, freezing, evaporating and condensing X Close

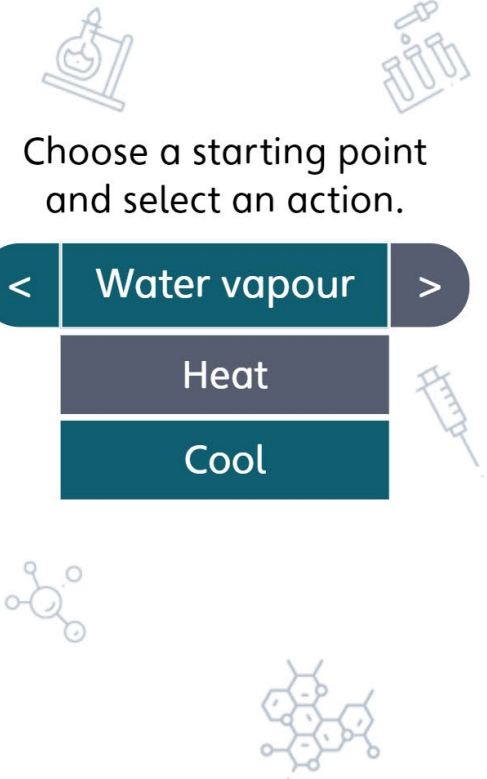


Choose a starting point and select an action.

< Water vapour >

Heat

Cool



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Interactive virtual investigations

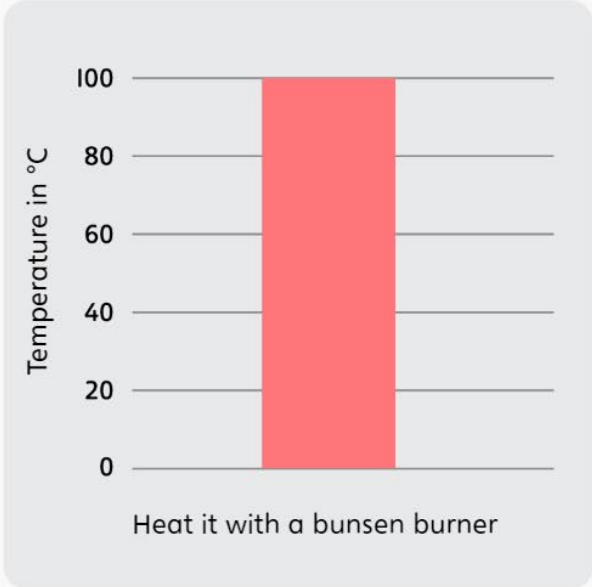

- Recreation of 21 core investigations in a digital format

Evaporation, condensation, melting, and freezing with thermometers X Close

Heat it with a bunsen burner

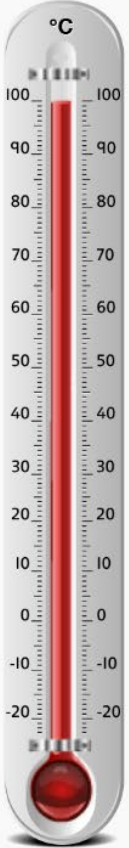
What is the temperature ?
Let's record that temperature on a bar chart.
The temperature is 100 degrees Celsius.

Click on the thermometer to measure the temperature.



Temperature in °C

Heat it with a bunsen burner



°C

100 90 80 70 60 50 40 30 20 10 0 -10 -20

Next

Interactive virtual investigations

- Recreation of 21 core investigations in a digital format

Investigating root growth X Close

After 4 weeks

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

0ml water

5ml water

10ml water

15ml water

20ml water

Next

Why is using a range of resources helpful in engaging learners?

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Variety not monotony

Interactivity which helps embed learning

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Salt from water using evaporation X Close

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A filter A heat source to boil the water A heat proof pan Glass Lid A cup to collect the water

Next

Year 3 Textbook

Pearson International Primary Science

Pearson



Embed an enquiry-based approach and encourage active learning

Place subtitle here



What are some enquiry based skills?

Making observations

What living things can you see in the picture?

Asking scientific questions

Our scientific question is:
How does the **position of the light source** ← change this
affect the **height of the shadow?** ← measure this

Forming predictions

Predict who hears a loud voice.

Testing a hypothesis

What will you **observe** or **measure** ?


Presenting/interpreting data

Do your results make a pattern?

Analysing results/drawing conclusions


Write a conclusion that answers your scientific question.

How can PIPS support an enquiry-led approach?



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18

19

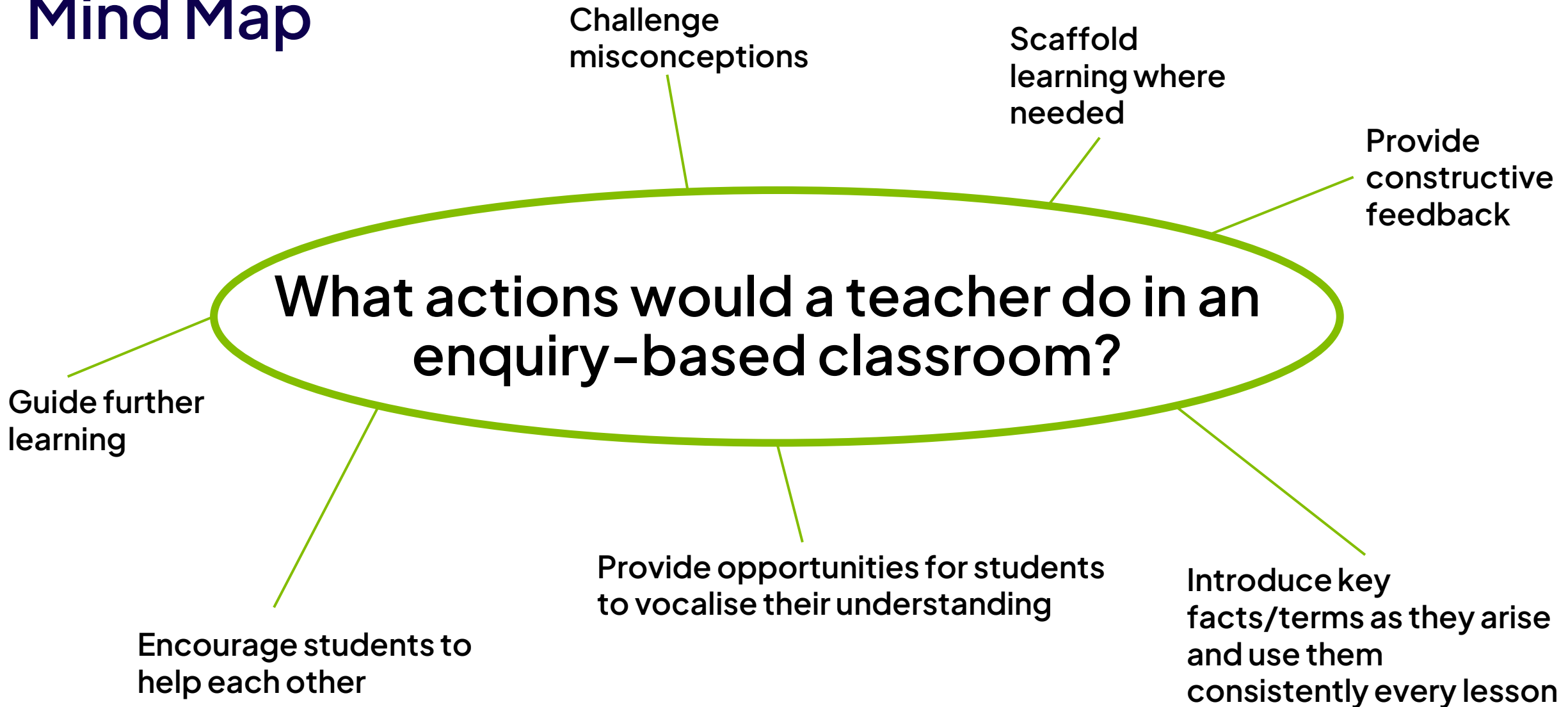
Space in workbooks to record investigations (no extra sheets needed)

Virtual labs – another format

Alternatives for investigations provided, lesson plans reviewed by Alchemist Lab

Topic opener pages and videos practice those skills

Mind Map



Misconceptions – and scaffolding learning

Food and water

Humans need the correct amounts of food and water to stay alive.



We **sweat** in hot weather and after **exercise**.



We use water from our body to make sweat. Sweat helps to cool our body.



So you need to drink more water when you exercise and when you are hot?



Yes, but you need to drink **regularly** at other times too.



Model scientific dialogue

Engage with and correct a partial misconception – don't just say "WRONG"

Guided questioning -> refinement -> accurate explanation

Students share and talk about their understanding

Topic 1 | Health and growth

Balanced diet

Humans need the correct amount and correct types of food.


I can think of **starchy**, **sugary** and **fatty** foods. Are there more types?

Yes. We will look at those later.


We need to eat different types of food to have a **balanced diet**.

A balanced diet is a diet that contains the correct amount of all the different **food groups**.

People around the world have different diets. Many people do not eat meat. Others do not eat any food that comes from animals.



Some people need to eat a **special** diet to stop them from becoming ill.



What sort of diet do you eat? Do you eat meat or fish? Are there any foods you do not like?

Key words

starchy sugary fatty balanced diet
food groups special

6 7

Encourages the creation of hypothesis

Addresses a misconception – but defers answering

Shows that knowledge is developing NOT fixed

Students share and talk about their understanding

Topic 1 | Health and growth

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6 7

Encourages the creation of hypothesis

Addresses a misconception – but defers answering

Shows that knowledge is developing NOT fixed

Sequenced questions that highlight misconceptions

Frequent talk opportunities – related to experience

Dialogue – not just telling

Practical investigation and data handling

There are two **columns**.
These are the **column headings**.



Write the unit
up here.

Name	Number of breaths per minute
Ria	22
Jo	24
Mason	26
Rakesh	27
Grace	23
Adem	24
Dabor	25

Draw a table means
make the table columns
and the headings.

Who took most breaths per minute?
Which children took the same number of
breaths per minute?
Count how many breaths you take per minute.

Key words

in and out

chest

count

results

breaths per minute

unit

scientific

draw a table

columns

headings

An enquiry-led approach is not just about textbooks

Year	Topic No.	Topic Name	Lesson No.	Lesson Name
5	5	Earth and space	27	Earth, Sun and Moon
Curriculum objectives	P5.1A – Understand that the Sun is a star and is at the centre of our Solar System P5.1B – Understand that the Earth, Sun and Moon are part of the Solar System and that Earth is a planet with one Moon P5.1E – Describe the movement of the Moon relative to Earth, and Earth and other planets relative to the Sun, correctly using the term 'orbit'			
Learning focus	A closer look at our Solar System			
Key vocabulary	Solar System; Sun; star; glowing; Earth; Moon; far; nearest; space; orbits; reflect; spherical			
Book references	Textbook pages 106–109		Workbook pages 106–109	
Resources supplied	PIPS Y5 TP5 RS1: Moon diary			
Other resources needed	Globe to show land/oceans on Earth Laptop to play video clips Optional in-school access to reference material about the Moon (see 'Before you teach')			
Lesson Outline				
<p>Before you teach: This lesson reintroduces learners to the Solar System, which they met very simply in Year 2 Topic 6 Space. There they met the term 'Solar System', the phases of the Moon and a little about Earth spinning as it orbits the Sun. Today you will revise and build on this early knowledge before moving on in later lessons to other planets.</p> <p>Learners may have kept a pictorial diary of phases of the Moon in Year 2. As that is now a long time ago, and any new entrants may not have done it, the diary sheet is provided again here for optional extension or follow-up (see resource sheet 'Moon diary'); copies will need printing off in advance, if required.</p> <p>For workbook page 109 question 5, learners will need access to resources (for example, reference book, school library, controlled internet sources) where they can look up three additional facts about the Moon. This could be set as a follow-up task if necessary.</p> <p>Introduction: Start by asking: <i>What do you remember about the meaning of the term Solar System?</i> Discuss a definition as a class; refine this as: Solar meaning 'to do with the Sun' and System meaning 'things that work together'.</p> <p>Remind learners that they have met the word 'system' when they were learning about the human body, for example, the digestive system is made of organs</p>				

Consistently use scientific vocabulary

Constructed through discussion and applied in context

Define terms and reuse in explanations

An enquiry-led approach is not just about textbooks

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Scaffold learning –
build knowledge
across lessons and
across years!

recall -> refine ->
extend

An enquiry-led approach is not just about textbooks

Introduction:

Remind learners how shadows are formed, i.e. that an opaque object blocks light, by looking again at the shadow of the football on textbook page 122 together. Link this to the practical work done in the previous lesson by asking learners to identify the light source in their investigation (the Sun), the opaque object (the learner) and the surface on which the shadow was made (the playground).

Main activity:

Use your torch and box, in conjunction with looking at textbook page 124, to demonstrate how the length of the shadow of the box changes according to the *relative* position of the torch. (Keep the word 'relative' in here so that you emphasise the position of the torch *in relation to the box* and not that you are moving the torch).

Now look at textbook page 125 together. Start by reinforcing that the Sun is not moving, but Earth is. As it spins, the position of Earth relative to the Sun changes – the Sun may appear to be moving, but it is not; we are. Point out that this is why we see the Sun in different positions through the day. Demonstrate this with your globe and the torch, keeping the torch (the Sun) in a fixed position and turning the globe (Earth). Talk through and explain each set of diagrams shown on this page.

Next, look at textbook pages 126 and 127 together. Explain what a sundial is and how it works. Show learners how they could make a simple sundial next time they are on a beach.

Now give each learner time to make a sundial by following the textbook instructions. Adjust the amount of anchoring material (stones and/or sticky tack) needed according to the plates you are using and the wind today.

Take one or all the sundials outside for learners to mark the current position of the shadow of the straw/stick. Organise how learners will revisit their sundial hourly today and what they will do. Modify these instructions if learners are to use their sundial at home (see 'Before you teach' section). Point out that they will have to predict some of the positions of the shadow even if they go out every hour. Ask: *Why will you have to predict some of the positions of the shadow?* (When it is dark there will not be a shadow of the stick.) Someone may suggest using a torch; if not, ask learners yourself whether it could be continued with a torch. (No; the light source is now different so no longer a constant and is not in the same position as the Sun.)

Return to the classroom for learners to start the workbook tasks.

Workbook:

Complete workbook pages 124 to 127.

Plenary:

Consolidate learning from today and the previous lesson by relating the results of the shadow length practical and the sundial practical to the diagrams you showed learners on textbook page 125.

Challenge
misconceptions

Practical demonstration
– real experience

Discussion and
prediction

Application

Discussion and students supporting each other

Deliberate **conversations** not just empty questions

Ideas are explained. Thinking is compared.

Understanding is refined through talk.

Knowledge is formative, not absolute

Pupils don't just learn science – they think scientifically

Key words matter and get used properly

Explained in context – used again and again

Learning is carefully scaffolded

Start with what you know, use models, images, questions and examples step-by-step

Misconceptions are met head-on

Rethink (don't just TELL) ideas like the moon being a light source. Use explanation, comparison and evidence

Talking **IS** working

Explain, predict, justify, discuss with partners. Children don't just give one word answers!

Feedback in the moment

Teachers support by refining answers, sharpening definitions, probing with follow-up questions.

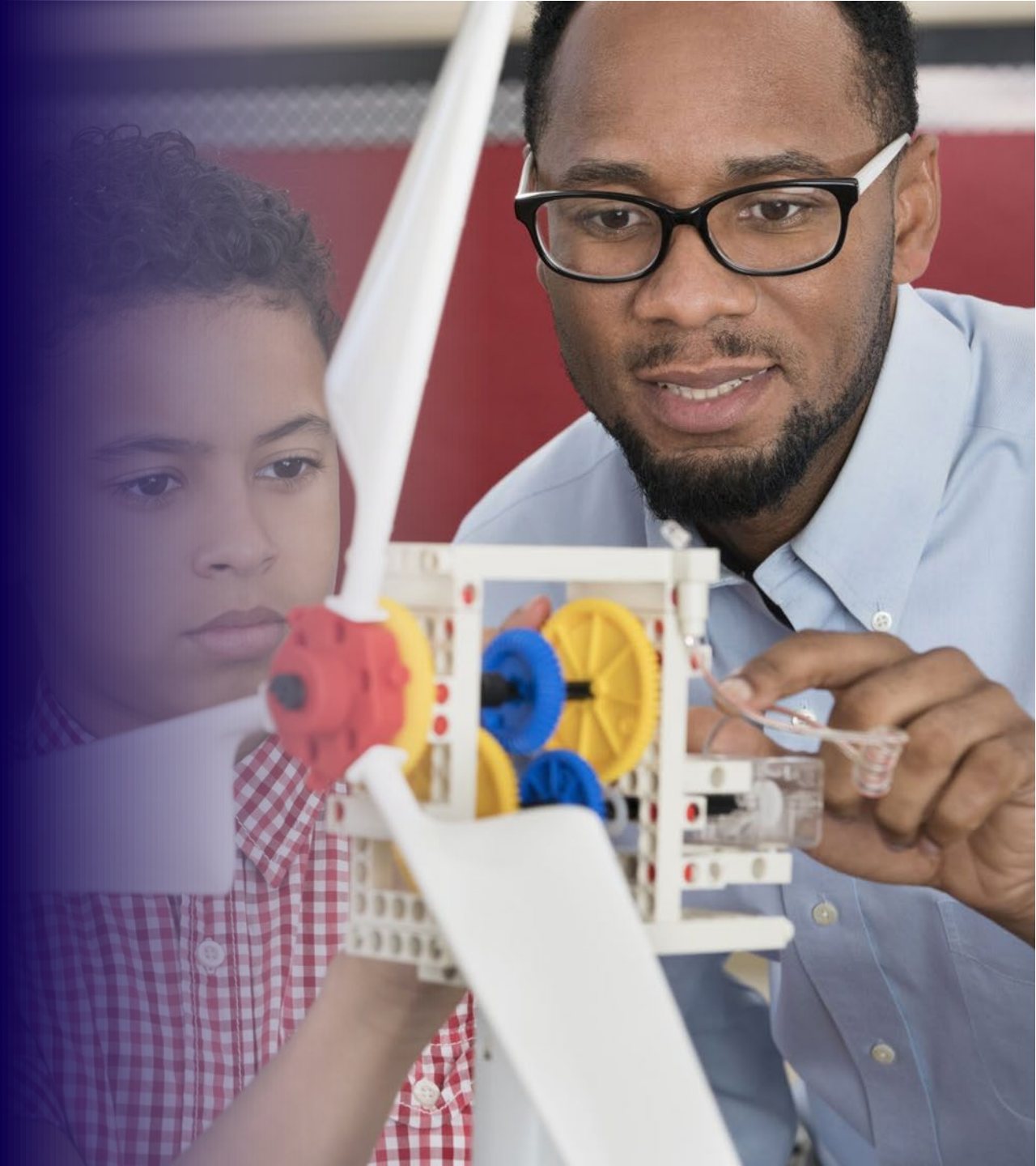
Enquiry is everywhere

Pupils observe, question, measure, record, spot patterns, make predictions – and apply science to real world examples

» Pearson

Effective and consistent formative assessment to inform teaching

Place subtitle here





What assessment opportunities are there?

Formative assessment opportunities highlighted throughout

Regular informative summative assessment opportunities

End of term and end of year achievement tests



Structured, explicit progression onto iLS and International GCSE

SCIENCE  

Name: _____
Class: _____ Date: _____

Year 3:
B3.2 Teeth

1 a) Draw a line to match each human tooth with its use.
You will draw **three** lines in total.

Tooth	Use
	<input type="checkbox"/> chewing and grinding
	<input type="checkbox"/> biting and slicing
	<input type="checkbox"/> gripping and tearing

15 What is a constellation?

- A a group of planets
- B an object in space used for communications
- C a group of stars
- D a circle around the edge of the Sun

Total for test = 30 marks

I got out of 30 marks

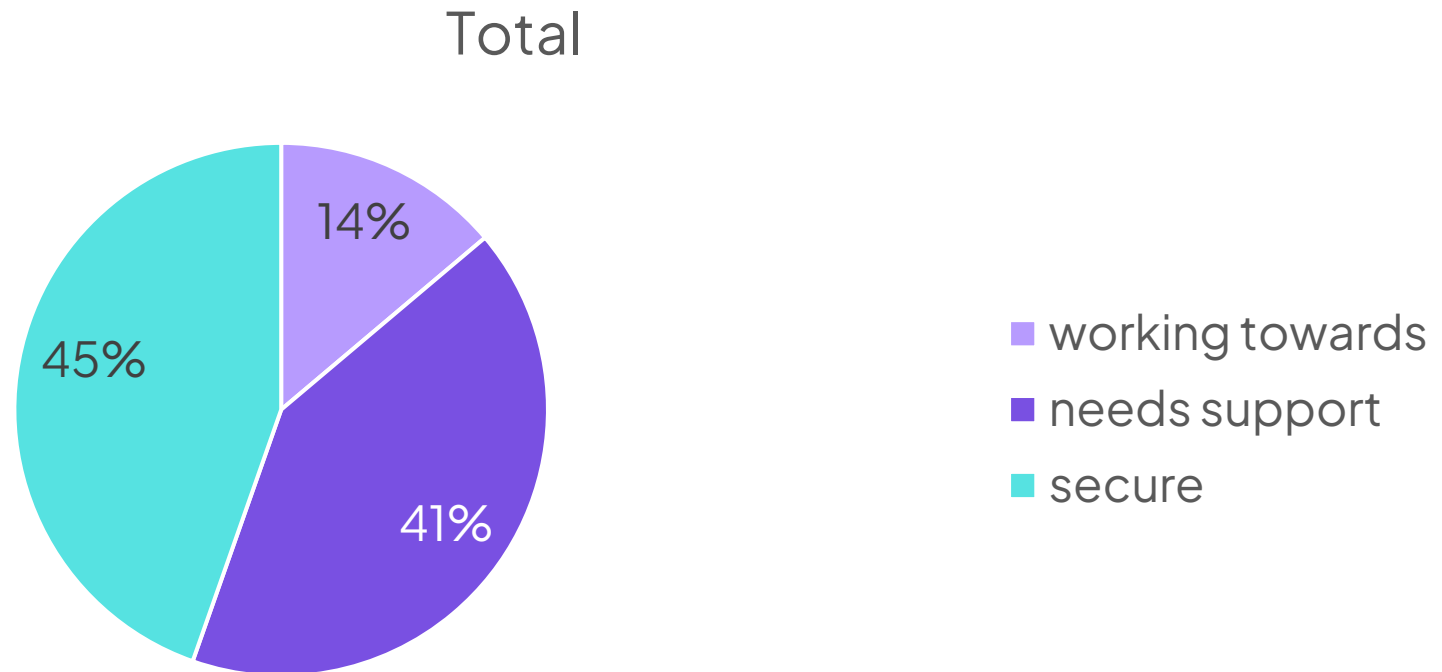
What went well

How to improve

Markbooks

Can be used alongside all curriculum objectives for a full view of learner and cohort progression

Charts enable clear overview of performance



Support for assessment

GCSE taken as end point, clear, structured progression

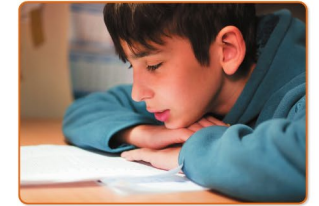
Spiral approach, revisiting topics in more depth and complexity each year

Revision section in Year 6 to prepare for assessment



7 Revision

You have reached the end of the new topics. Let's look at some of the things you need to know for the Year 6 examination.



You know a lot of science now. You know lots of new words with precise meanings. This section of the book contains all the topics that are tested in the end of Year 6 examination.

The learner in the picture has made some notes about each topic he has to learn about. Now he is reading through them. This is a good thing to do to start your preparation. It is also important to do some things to test your knowledge. You should check what you know, and what you do not know, in order to improve. If you were learning to play football, you might read the rules of the game first, but you soon need to go and play the game to find out what you are able to do. Then you can work on the things that you are not so good at ... or ask for help.

Learning things for an examination is like that too. Until you check what you know, and what you do not know, then it is hard to improve. Keep talking to other learners – you may be able to help them, and they may be able to help you too.

Growing plants

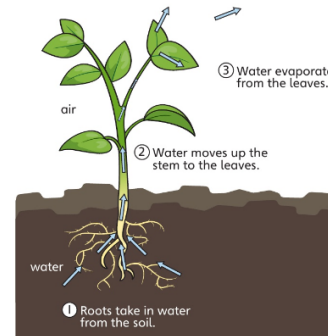
Revision topic 3

Here are some key points for this topic.

- Plants need the correct amount of water and light to grow well.
- Soil provides minerals to help plants grow.
- Fertilisers and organic matter can give plants extra minerals.

Here are some key things to understand and to be able to do.

- Understand how water is transported inside plants

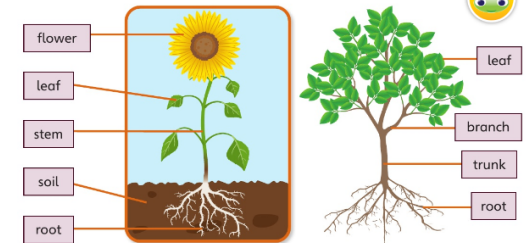


When water evaporates from the leaves into the air, more water moves up the stem.

Recognise parts of a plant on a diagram and know their functions

This is a sunflower plant.

This is a tree.



A tree has a trunk. Other flowering plants have a stem.

Part of plant	Function
roots	anchor the plant take in water and minerals
stem or trunk	supports the plant transports water and nutrients (such as minerals and food the plant makes)
leaves	make food using sunlight for nutrition
flowers	attract insects for pollination make seeds for reproduction

How would you describe the difference between a stem and a trunk?

What is the word that describes living things that make their own food?

07

Key takeaways

Key takeaways

Clear, structured support – everything you need to teach and assess

An enquiry-led approach improves achievement and transferable skills

Best practice teaching strategies fully embedded

08

Thank you for listening!
Any questions?