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Prepare for
your deep dive
into Science

GET CHILDREN TALKING AND
THINKING LIKE SCIENTISTS
WITH THE NO. 1 UK PRIMARY
SCIENCE PROGRAMME

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Collins is delighted
that Snap Science
is ASE reviewed



WHAT IS SNAP SCIENCE?

With a wide range of interactive and visual digital resources, a flexible Teaching Framework, and built-in formative assessment, **Snap Science** will support you in delivering dynamic and exciting science lessons throughout your school.

teach
PRIMARY



RESOURCE
AWARDS 2018

"Supports teachers who are not science specialists, as well as stretching those who are very comfortable with their knowledge."

Kulvinder Kaur Johal, Assistant Head Teacher and Fellow of the Primary Science Teaching Trust

CULTIVATE A SPIRIT OF ENQUIRY in your pupils with practical exploration and investigation activities to inspire the whole class

ACCESS CLEAR PROGRESSION within the 'big ideas in science' which are clearly visible within each topic and each module

REVIEW, TRACK AND RECORD EVERY CHILD'S PROGRESS - with complete coverage of all concepts and skills for the Teacher Assessment Framework, providing a comprehensive assessment solution

MAKE CHALLENGING CONCEPTS MEANINGFUL FOR PUPILS with carefully pitched activities and supporting videos and animations

UTILISE SIMPLE SCIENCE SOLUTIONS which support you in delivering engaging lessons and extend your subject knowledge

HELP EVERY CHILD ACHIEVE with three levels of differentiated challenge in every lesson

MEET THE EXPERTS



SERIES EDITOR: JANE TURNER

Jane taught in primary schools in Hertfordshire and London. She is the director of the Primary Science Quality Mark. She worked with the Dept for Education as Curriculum Advisor for Primary Science, a consultant on primary science assessment and curriculum, and chair of the Association for Science Education.














Jane's team of Snap Science authors – Chris Banbury, Nicola Beverley, Naomi Hiscock, Liz Lawrence, Bryony Turford, Hellen Ward, Christine Moorcroft and James de Winter – are all highly experienced teachers who now work as consultants, LA advisers and in Initial Teacher Education.

YOU CAN TRY SNAP SCIENCE WITH YOUR CLASS FOR FREE!

CONTACT YOUR REP AT [COLLINS.CO.UK/FINDAREP](http://collins.co.uk/findarep) TO SIGN UP TODAY!



HOW IS SNAP SCIENCE STRUCTURED?

YEAR GROUP/ COMPONENT	TEACHING AND ASSESSMENT TOOLKIT* Delivered online via Collins Connect Platform	TEACHING FRAMEWORK Black and white, spiral bound, A4	ASSESSMENT Y1-6, P2-7 Digital download
Foundation	 1 Year 978-0-00-812472-4 – £90.00 + VAT 3 Year 978-0-00-812473-1 – £200.00 + VAT	 978-0-00-812474-8 £75.00	
Year 1	 1 Year 978-0-00-756249-7 – £90.00 + VAT 3 Year 978-0-00-757445-2 – £200.00 + VAT	 978-0-00-755141-5 £145.00	
Year 2	 1 Year 978-0-00-756250-3 – £90.00 + VAT 3 Year 978-0-00-757449-0 – £200.00 + VAT	 978-0-00-755142-2 £145.00	
Year 3	 1 Year 978-0-00-756251-0 – £90.00 + VAT 3 Year 978-0-00-757452-0 – £200.00 + VAT	 978-0-00-755143-9 £145.00	 978-0-00-819933-3 £100.00
Year 4	 1 Year 978-0-00-756252-7 – £90.00 + VAT 3 Year 978-0-00-757453-7 – £200.00 + VAT	 978-0-00-755144-6 £145.00	
Year 5	 1 Year 978-0-00-756253-4 – £90.00 + VAT 3 Year 978-0-00-757454-4 – £200.00 + VAT	 978-0-00-755145-3 £145.00	
Year 6	 1 Year 978-0-00-756254-1 – £90.00 + VAT 3 Year 978-0-00-757455-1 – £200.00 + VAT	 978-0-00-755146-0 £145.00	

*Includes Teaching Framework and assessment materials.

A CURRICULUM WITH INTENT

"I'm really thrilled for what it has done right the way across the school."

Alison Richards, Head Teacher, Hertingfordbury Cowper Primary School

Snap Science is shaped by an informed understanding of the purpose and value of primary science, aiming for every child to **engage with a coherent progression of the scientific skills and concepts specified in the National Curriculum**. The full programme is designed as a series of year frameworks made up of several modules to ensure full coverage, and each module begins with a clear statement of the knowledge and skills children will have developed by the end.

EASY TO IMPLEMENT

With clear planning at the heart of the resource, Snap Science is simple to implement across your whole school. Flexible lesson plans allow you to **deliver content effectively** tailored to the needs of your class and the supporting digital assets mean you have everything you need for an outstanding science lesson at your fingertips. Each lesson is packed with **enquiry-based, hands-on activities** incorporating a range of resources to ensure every lesson is rich, lively and engaging.

Encourage the use of correct scientific language with key vocabulary lists

Every lesson begins with a question, providing a focus for children to explore and consider

Prompt questions are included throughout to develop and assess children's understanding

MODULE 1

THE EARTH AND BEYOND

LESSON 6: WHY DO WE HAVE SEASONS?

LESSON SUMMARY:
In this lesson children explore how the Earth's tilt on its axis causes seasonal changes and changes in daylight hours. They build on what they have learned about time in previous lessons in this module. By the end of the lesson children are able to explain that the Earth's tilt causes seasons, and how seasons in the northern hemisphere differ from those in the southern hemisphere and from those in tropical regions.

Key vocabulary:
autumn, axis, equinox, hemisphere, northern, North Pole, orbit, rotation, solstice, southern, South Pole, spring, summer, sunrise, sunset, temperature, tilt, winter

Resources:
Battery powered lanterns that shine in all directions (or torches), a globe, poster putty, materials for making a poster, piece of dowelling, small ball of modelling clay, secondary sources for research

Health and safety:
Ask children never to look directly at the Sun because it is bright enough to harm our eyes, not to shine a torch at anyone's face and not to look at a torch bulb when switched on.

Key information:
The Earth is tilted at an angle of 23.5°. This is the reason we have seasons in the UK. The tilt angles Earth's northern hemisphere towards the Sun in the summer and away from it in winter, with midway points in spring and autumn.

National curriculum links:
Describe the movement of the Earth, and other planets, relative to the Sun in the solar system

Working Scientifically links:
Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs

Learning intention:
To explain how the Earth's tilt leads to seasonal changes

Scientific enquiry type:
Observing change over time (modelled)

Success criteria:
• I can describe how the Earth orbits around the Sun while it is turning on its axis.
• I can explain how the tilt of the Earth's axis causes seasons.
• I can use my pictures or models to explain why a season is not exactly the same in different parts of the same hemisphere.

EXPLORE:
Display Seasonal changes sheet (Resource sheet 1) and ask children to think about the seasons they have in the UK.
Ask: *What are the seasons? What is it like in each season? What kinds of weather do you expect in spring? Summer? Autumn? Winter? How do temperatures change from one season to another? Does anything else change? Have you heard people say "the days are getting longer" or "the nights are drawing in"? What do they mean?*
Open a discussion with children and write their responses in the table.
Ask children to talk with a partner about what makes the seasons change. Invite feedback and ask children to refer to later. Show children the globe and ask what they notice about the position of the Earth on the stand.
Ask: *Why do globes always show the Earth tilted? Is it really tilted or is this just for models?*
Explain that scientists think another planet bumped into the Earth billions of years ago and made it tilt.
Let children look at a globe from above the North Pole and slowly rotate it anticlockwise. Point out that the Earth and other planets rotate around their poles. Push a piece of dowelling through out that the Earth and explain that the dowelling shows the line of the Earth's axis (an imaginary line running through the centre of the Earth between the two poles), but point out that there nothing really runs through the Earth.
Point to the top of the globe and ask what this part of the Earth is called. Point to the South Pole and the equator. Show them the northern and southern hemispheres. Ask a child to mark the UK with a piece of sticky tack.
Ask: *Which hemisphere is the UK in?*

ENQUIRE:
Explain to children that we can use a globe to represent the Earth and a lantern or torch to represent the Sun. Explain that the model is not to scale – if a globe represents the Earth, then whatever we use to represent the Sun should be bigger than the room.
Shine a lantern or torch on the globe to represent sunlight.

LESSON 6: WHY DO WE HAVE SEASONS?

Ask: *Do all parts of the globe get the same amount of light? What season would we have when the northern hemisphere is tilted towards the Sun?*
Move the globe to orbit the lantern or torch 'Sun'. Stop when the southern hemisphere tilts towards the Sun. If using a torch, turn it to shine on the globe.
Ask: *Which hemisphere is now tilted towards the Sun? What season will it be now in the northern hemisphere?*
Show the class Seasons animation (Animation 1), which provides a visual explanation of our seasons. Remind children of some of their observations about the seasons that you recorded on the chart (Resource sheet 1) at the start of the lesson. Explain to them that their challenge is to use what they know about the Earth's tilt to describe and explain differences between the seasons. The challenges are differentiated by the number of seasons children are required to describe and explain.

Challenge 1: Children make a poster to show the position of the Earth and the Sun during winter in the UK.
Ask the children to model the Earth's rotation (remembering the tilt) and to draw a poster-sized, labelled scientific drawing with the Sun and the Earth to show winter in the UK. Ask them to name three other countries that would have winter at the same time and to say how they know. Encourage the children to attempt to describe the seasons that Australia, Ghana and Antarctica would have at the same time. They can use a different copy of the blank Seasons sheet (Resource sheet 1) for each country.

Challenge 2: Children make a poster to show the position of the Earth and the Sun during summer and winter in the UK.
Ask the children to model the Earth's rotation (remembering the tilt) and to draw a poster-sized, labelled scientific drawing with the Sun and the Earth in two different positions in the Earth's orbit, one for summer and one for winter in the UK. Ask the children to use the terms 'summer' and 'winter', 'Earth's orbit', 'Earth's tilt' and 'the Sun'.
Encourage the children to attempt to describe the seasons that Australia, Ghana and Antarctica would have, firstly when the UK has summer and then when the UK has winter. Ask them to say whether the season is the same in each of the three countries – and why. Give the children copies of the Seasons table (Resource sheet 1) so that they can record the seasons in the countries. Different children can focus on different countries.

Challenge 3: Children make a poster to show the position of the Earth and the Sun during all four seasons in the UK.
Ask the children to model the Earth's rotation (remembering the tilt) and to draw a poster-sized, labelled scientific drawing that includes the Sun and the Earth in the four different positions that the Earth will be in its orbit when it is spring, summer, autumn and winter. Earth's orbit, 'Earth's tilt', children that they should use the names of the seasons and the terms 'Earth's orbit', 'Earth's tilt', 'the Sun', 'solstice' and 'equinox'. Ask them to choose a season in the UK and to investigate (using secondary sources to check their ideas) whether this would be the same for the entire northern hemisphere. Ask them to record their findings.
If there is time, the children could also describe the season a country in the southern hemisphere would have when the UK has winter, and find out if this is the same for other countries in the southern hemisphere (using secondary sources to check their ideas). These tasks could be shared among the group.

REFLECT AND REVIEW:
Ask children to present their findings orally using their models and drawings to help. Return to their ideas about the seasons from the start of the lesson (including the completed table on Resource sheet 1) and ask if their investigations have helped to explain any seasonal changes – and if so, how?
Ask them to write questions they would like answered on the star cards and to add them to the question board. Are there any questions that can now be answered?

EVIDENCE OF LEARNING:
Can children describe the different seasons in the UK in terms of day length and temperature changes? Do they show in their drawings, modelling and presentations that the Earth's axis tilts?
Can they use a model to explain how the tilt of the axis causes the seasons?
Can they use an extension to this lesson, challenge children to find out why some countries don't have the same four seasons as the UK: for example, Pakistan, Ecuador, Indonesia and Republic of Congo.

Each lesson links directly to the Programme of Study and the Working Scientifically criteria

Each lesson contains three levels of differentiated challenge to ensure all children can access and master the lesson's learning intention

Collins Connect

Try the full scheme
for free for 14 days at
connect.collins.co.uk

The online solution for teaching science

Access a wealth of Snap Science digital resources via our online teaching platform Collins Connect, including:

- tailored animations
- videos
- slideshows
- interactive activities
- resource sheets
- editable lesson plans
- online record-keeping

Simple and easy to use, it offers you the flexibility to tailor your teaching plan to suit the needs of your class and brings every lesson to life!



"The website is easy to use and the animations, videos and slideshows are excellent. The extended learning lessons are creative and fun to teach."

Sonia Wenberg Moller, Teacher, Kingscourt School

THE IMPACT IS CLEAR

Children make good progress, building and consolidating their knowledge and skills, develop positive attitudes about science and its value to their lives and globally, and teachers and children enjoy their science lessons.



Find out how
Snap Science meets
the key aims of
Ofsted's research
review into
primary science



www.collins.co.uk/SnapScience

EFFECTIVE ASSESSMENT

Developed with in-depth formative and summative assessment at its core, **Snap Science** offers simple, yet robust tools for judging and recording whether a child is working at, towards or exceeding the expected standard.

Ongoing formative assessment opportunities are built into every lesson plan, along with guidance to enable teachers to use what a child has said, written, made or drawn in a lesson to confidently assess their learning.

For every concept and skill in the Teacher Assessment Framework, a Snapshot assessment task will help you to review a child's learning and whether they are working at the expected standard.

"It very much focuses on activity based lessons, so a lot of the formative assessment is through questioning which is fantastic because you definitely get more of an understanding on whether children understand."

Kate Atkinson, Year 4 Teacher,
Hertingfordbury Cowper Primary School

Year 1 and 2 Pupil self-assessment

Pupil self-assessment Year 1 and 2

1. In the last few weeks in science I learned about:

2. I asked this scientific question:

3. In the classroom/outside I looked carefully at:

4. I used this scientific equipment to look closely/measure:

5. I compared ... with ...

6. I sorted ... into groups

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Snap Science assessment works alongside any primary science programme!



Snapshot assessments are short, fun activities that a teacher or other adult can use with a child or small group of children to check understanding of Science concept statements:

Each Snapshot has four elements:

1. The activity resources (images, cards, etc. that adults will need to prepare)
2. Instruction for the adult leading the activity
3. Questions for adults to use to check and probe understanding
4. Guidance for adults to assess that a child has achieved the concept statement



Snap Science Assessment is available as a digital download. For more information, visit collins.co.uk/SnapScience



RECORD-KEEPING FOR SNAP SCIENCE

Within the Progress Tracker you can view class results by module and see these in chart form

The **Snap Science** Record-Keeping tool is an adaptable and reliable tracking and reporting system containing all the data you need to make your final teacher assessment judgments at the end of a Key Stage.

Select a traffic light for each child for each curriculum statement:

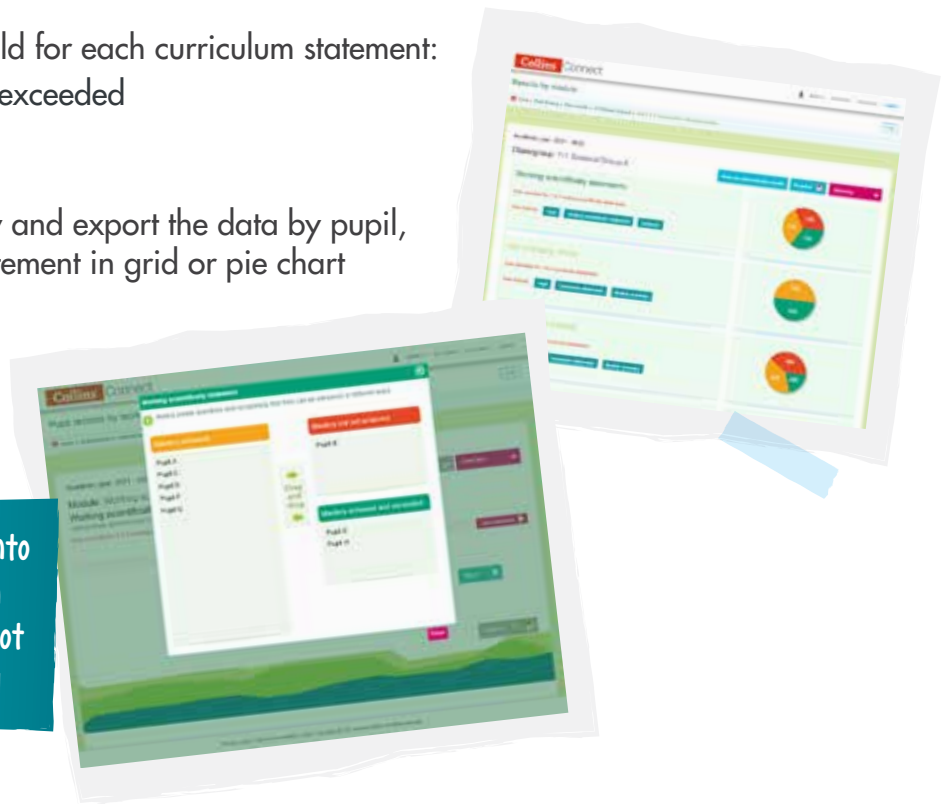
green = mastery achieved and exceeded

amber = mastery achieved

red = mastery not yet achieved

At any time you can easily view and export the data by pupil, by module or by curriculum statement in grid or pie chart form – ideal to take to parents' evening or to show to Ofsted.

Easily drag-and-drop pupils into the relevant mastery section and add comments to those not achieving and those exceeding



SNAP SCIENCE FOUNDATION

The online resources have been refreshed for the 2021 framework!

Snap Science Foundation provides a solid grounding into the introductory principles of science and prepares children through first-hand experience of the world around them.

Snap Science Foundation contains 24 flexible activity plans. Each activity plan is accompanied by a slideshow of a short fictional story based on meaningful scientific context that leads to a problem or question for pupils to answer. Downloadable resource sheets and photo banks are also available for each plan, saving you time and effort.

Assessment for learning is embedded throughout the Foundation year, building on the core strength of **Snap Science**.



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Alternatively, you can contact our friendly customer services team:

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Teaching Framework Year 6	978-0-00-755146-0	£145.00
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