

RISING STARS
ASSESSMENT

Progression
Frameworks

FOR
SCIENCE
YEAR 3

Developed in Association with



CORNWALL
LEARNING

RISING STARS
ASSESSMENT

Progression Frameworks

Introduction

The Progression Framework for science is divided into two parts: *Progression in concepts* and *Working Scientifically*.

- *Progression in concepts* is based on the statements relating to key ideas in science. It is split into Biology, Chemistry and Physics; within each of these a number of 'big ideas' have been identified and used to show how later statements progress from earlier ones. See below for more information about the big ideas.

- *Working Scientifically* is based on the main skill areas which are broadly viewed as processes (e.g. planning investigations, reporting findings). Each of these is then subdivided into individual skills. As the Programme of Study statements are by Key Stage rather than by year, these have been taken as relating to the second year of each Key Stage and statements have been developed for the previous year that represent progress towards that.

See the separate document 'About the Progression Framework for science' for more detailed information.

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Rising Stars Progression Framework for science, Year 3

| Domain: Biology | | | | |
|---|---|---|---|---|
| 'Big idea' | Progression statement | What to look for guidance (Working towards expectations) | What to look for guidance (Meeting expectations) | What to look for guidance (Exceeding expectations) |
| 1) Living things can be classified according to observable features | There is no content for this Big Idea in Year 3. | | | |
| 2) Habitats provide living things with what they need | 3.2.1 Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant LINK 4.1.2 | Suggest how one of the requirements for plants to stay healthy could be explored. | Explain what all plants need to flourish and recognise how these requirements vary in amount. | Compare the requirements of different plants and link these to particular habitats. |
| 3) Living things exhibit variation and adaptation and these may lead to evolution | There is no content for this Big Idea in Year 3. | | | |

Rising Stars Progression Framework for science, Year 3

Domain: Biology

| 'Big idea' | Progression statement | What to look for guidance (Working towards expectations) | What to look for guidance (Meeting expectations) | What to look for guidance (Exceeding expectations) |
|---|---|---|---|--|
| 4a) Life exists in a variety of forms and goes through cycles – Plants | 3.4a.1 Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers LINK 5.5.1 | Identify different parts of a flowering plant: roots, stem/trunk, leaves and flowers. | Describe what each part of a flowering plant does. | Suggest why parts may vary in size and shape from one species of flowering plant to another. |
| | 3.4a.2 Investigate the way in which water is transported within plants | Identify that water is transported within plants. | Explain, with the aid of a diagram or plant, how water is carried up from the soil. | Suggest how this process might vary from one type of plant to another. |
| | 3.4a.3 Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal LINK 6.3.3 | Describe the processes of pollination, seed formation and seed dispersal. | Explain how pollination, seed formation and seed dispersal play a role in the reproduction of flowering plants. | Suggest why pollination, seed formation and seed dispersal may vary from one type of plant to another. |
| 4b) Life exists in a variety of forms and goes through cycles – Animals | 3.4b.1 Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat | Identify that animals, including humans, need the correct nutrition. | Describe why animals depend on the correct nutrition. | Explain why a varied diet is important. |
| 5) The human body has a number of systems, each with its own function | 3.5.1 Identify that humans and some other animals have skeletons and muscles for support, protection and movement | Recognise that humans and some other animals have skeletons and muscles. | Explain which parts of the skeleton provide support and protection, and how they allow for movement. | Compare the ways that the skeletons of different animals provide support, protection and movement. |

Rising Stars Progression Framework for science, Year 3

| Domain: Chemistry | | | | |
|---|---|---|---|--|
| 'Big idea' | Progression statement | What to look for guidance (Working towards expectations) | What to look for guidance (Meeting expectations) | What to look for guidance (Exceeding expectations) |
| 1) Different rocks have different properties and the formation of soil & fossils can be explained | 3.1.1 Describe in simple terms how fossils are formed when things that have lived are trapped within rock LINK 3.2.1 | Understand that fossils indicate the shape of previous life forms. | Explain how fossils are formed. | Explain the importance of studying fossils. |
| | 3.1.2 Recognise that soils are made from rocks and organic matter | Describe the appearance of soil, recognising that it is a mixture of materials. | Describe how soil is made. | Compare different soils in terms of composition. |
| 2) Materials have physical properties which can be investigated and compared | 3.2.1 Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties LINK 3.1.1 | Identify that rocks vary in terms of appearance and physical properties. | Examine and test rocks, grouping them according to the results. | Suggest uses for different kinds of rocks based on their properties. |
| 3) The physical properties of materials determine their uses | There is no content for this Big Idea in Year 3. | | | |
| 4) Materials can exist in different states and that these states can sometimes be changed | There is no content for this Big Idea in Year 3. | | | |

Rising Stars Progression Framework for science, Year 3

Domain: Physics

| 'Big idea' | Progression statement | What to look for guidance (Working towards expectations) | What to look for guidance (Meeting expectations) | What to look for guidance (Exceeding expectations) |
|---|---|--|---|---|
| 1) There are contact and non-contact forces; these affect the motion of objects | 3.1.1 Compare how things move on different surfaces | Recognise that things may move differently on different surfaces. | Compare how an object, such as a toy car, will move on different surfaces. | Predict how an object will move on other surfaces and suggest why. |
| | 3.1.2 Notice that some forces need contact between two objects, but magnetic forces can act at a distance | Recognise that magnetic forces don't require physical contact. | Recognise the difference between contact and contact forces. | Explore how magnetic attraction and repulsion are affected by distance. |
| | 3.1.3 Observe how magnets attract or repel each other and attract some materials and not others | Identify that magnets affect each other. | Describe how magnets attract or repel each other, and attract magnetic materials. | Explore whether some magnets are stronger than others. |
| | 3.1.4 Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials | Recognise that some materials are magnetic and that others are not. | Group materials on the basis of testing for being magnetic. | Identify some applications of magnets and magnetic materials. |
| | 3.1.5 Describe magnets as having two poles | Recognise the term 'magnetic pole'. | Describe and identify the poles of a magnet. | Explore the similarities and differences between the two poles. |
| | 3.1.6 Predict whether two magnets will attract or repel each other, depending on which poles are facing | Recognise that magnets affect each other differently, depending on which poles are facing. | Predict outcomes of a particular arrangement of magnets. | Apply ideas about the interaction of magnets to contexts such as toys. |
| 2) Day, night, month, seasonal change & year are caused by the position and movement of the Earth | There is no content for this Big Idea in Year 3. | | | |

Rising Stars Progression Framework for science, Year 3

Domain: Physics

| 'Big idea' | Progression statement | What to look for guidance (Working towards expectations) | What to look for guidance (Meeting expectations) | What to look for guidance (Exceeding expectations) |
|---|---|---|--|--|
| 3) Light & sound can be reflected & absorbed and enable us to see & hear | 3.3.1 Recognise that they need light in order to see things and that dark is the absence of light | Identify that light is necessary for vision. | Relate being able to see to the presence of light. | Recognise that vision involves light travelling to the eyes. |
| | 3.3.2 Notice that light is reflected from surfaces | Identify that mirrors reflect light. | Describe how some objects reflect light. | Recognise that some surfaces are better at reflecting light than others. |
| | 3.3.3 Recognise that light from the sun can be dangerous and that there are ways to protect their eyes | Recognise that light from the sun can be dangerous. | Describe how and why our eyes should be protected from sunlight. | Explain why sunlight can be dangerous and how types of protection works. |
| | 3.3.4 Recognise that shadows are formed when the light from a light source is blocked by a solid object | Recognise that light cannot pass through some objects. | Explain how shadows are made. | Suggest how light is travelling to form a shadow. |
| | 3.3.5 Find patterns in the way that the size of shadows change LINK 1.2.1 | Identify that the size of shadows can be changed. | Describe how to change the size of a shadow. | Relate position of an object and position of a screen to the size of the shadow. |
| 4) Electricity can make circuits work and can be controlled to perform useful functions | There is no content for this Big Idea in Year 3. | | | |

Rising Stars Progression Framework for science, Year 3

| Domain: Working scientifically | | | | | |
|--------------------------------|--|--|---|--|--|
| Process | Sub-process | Progression statement | What to look for guidance (Working towards expectations) | What to look for guidance (Meeting expectations) | What to look for guidance (Exceeding expectations) |
| 1) Planning investigations | a) Pupils can ask questions | 3.1.a.1 Ask relevant questions when prompted (+) | Pupil can ask simple questions that can be tested. | Pupil can, with support, develop relevant, testable questions, e.g. what happens to shadows when the light source moves. | Pupil can develop relevant, testable questions. |
| | b) Pupils can plan an enquiry | 3.1.b.1 Set up simple and practical enquiries, comparative and fair tests (+) | Pupil can suggest different ways of answering question. | Pupil can plan enquiry, such as comparative or fair test, e.g. comparing the effect of different factors on plant growth. | Pupil can plan investigations using different types of scientific enquiry. |
| | c) Pupils can identify and manage variables | 3.1.c.1 Set up comparative tests (+) | Pupil can, with support, set up a comparative test. | Pupil can set up a comparative test, e.g. how far things move on different surfaces. | Pupil can set up comparative and fair tests. |
| 2) Conducting experiments | a) Pupils can use equipment to take measurements | 3.2.a.1 Make systematic observations, using simple equipment (+) LINKS 2.2.a.1; 2.2.a.2 | Pupil can use various equipment, with assistance, e.g. a thermometer. | Pupil can use various equipment, as instructed, e.g. using a hand lens to examine rocks. | Pupil can use various equipment, as instructed, repeatedly and with care. |
| | b) Pupils explore how to improve the quality of data | 3.2.b.1 Use standard units when taking measurements (+) | Pupil can recognise some standard measurements, e.g. cm. | Pupil can use standard measurements when taking measurements, e.g. measuring distances between a light source and an object. | Pupil can recognise the importance of using standard units and measure accurately. |
| | c) Pupils understand the role of repeat readings | There is no content for this sub-process in Year 3. | | | |

Numbering system: Year.Process.Sub-process.Statement

Key for Progression statements: (+) new statements; (^) split Programme of Study statement

Rising Stars Progression Framework for science, Year 3

| Domain: Working scientifically | | | | | |
|--------------------------------|---|---|--|--|---|
| Process | Sub-process | Progression statement | What to look for guidance (Working towards expectations) | What to look for guidance (Meeting expectations) | What to look for guidance (Exceeding expectations) |
| 3) Recording evidence | a) Pupils record work with diagrams and label them | 3.3.a.1 Record findings in various ways (+) | Pupil can, with assistance, draw and label diagrams. | Pupil can, with prompting, draw and label diagrams, e.g. to show how water travels in a plant. | Pupil can use words and diagrams to record findings. |
| | b) Pupils can display data using labelled diagrams, keys, tables and bar charts | 3.3.b.1 With prompting, suggest how findings may be tabulated (+) | Pupil can recognise the function of a table. | Pupil can, with prompting, use tables to record evidence, e.g. recording what happens when various rocks are rubbed together. | Pupil can use various ways to record evidence. |
| | c) Pupils can display data using line graphs | 3.3.c.1 With prompting, use various ways of recording, grouping and displaying evidence (+) | Pupil can recognise different ways of gathering and displaying evidence. | Pupil can, with prompting, gather and display evidence in various ways, e.g. about the ways that magnets behave in relation to each other. | Pupil can use various ways to record, group and display evidence. |
| 4) Reporting findings | a) Pupils process findings to develop conclusions and identify causal relationships | 3.4.a.1 With prompting, suggest conclusions from enquiries (+) | Pupil can, with prompting, suggest what enquiry shows. | Pupil can, with prompting, write a conclusion based on evidence, e.g. exploring the strengths of different magnets. | Pupil can write a conclusion based on evidence. |
| | b) Pupils use displays and presentations to report on findings | 3.4.b.1 Suggest how findings could be reported (+) | Pupil can, with support, indicate findings from an enquiry that could be reported. | Pupil can indicate findings from an enquiry that could be reported, e.g. answering questions about how rocks are formed. | Pupil can present findings either in writing or orally. |
| | c) Pupils explain confidence in findings | There is no content for this sub-process in Year 3. | | | |

Numbering system: Year.Process.Sub-process.Statement

Key for Progression statements: (+) new statements; (^) split Programme of Study statement

Rising Stars Progression Framework for science, Year 3

Domain: Working scientifically

| Process | Sub-process | Progression statement | What to look for guidance (Working towards expectations) | What to look for guidance (Meeting expectations) | What to look for guidance (Exceeding expectations) |
|--------------------------------|---|--|---|---|--|
| 5) Conclusions and predictions | a) Pupils can analyse data | 3.5.a.1 Gather and record data about similarities, differences and changes (+) | Pupil can collect data relevant to the answering of questions. | Pupil can, with prompting, recognise patterns that relate to scientific ideas, e.g. investigating the behaviour of magnets. | Pupil can recognise patterns that relate to scientific ideas. |
| | b) Pupils can draw conclusions | 3.5.b.1 With prompting, suggest conclusions that can be drawn from data (+) | Pupil can answer enquiry questions using data and ideas. | Pupil can, with support, use evidence to produce a simple conclusion, e.g. the changes that occur when rocks are in water. | Pupil can use evidence to produce a simple conclusion. |
| | c) Pupils can develop investigation further | 3.5.c.1 Suggest possible improvements or further questions to investigate (+) | Pupil can with prompting, suggest how an investigation could be extended. | Pupil can suggest how an investigation could be extended, e.g. suggesting creative uses for different magnets. | Pupil can use evidence to suggest further relevant investigations. |

Numbering system: Year.Process.Sub-process.Statement

Key for Progression statements: (+) new statements; (^) split Programme of Study statement

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Credits

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