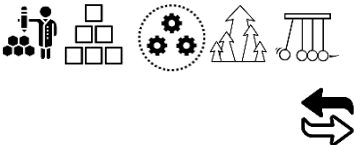


Working Scientifically: Statutory Requirements

During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- 🔍 asking simple questions and recognising that they can be answered in different ways
- 🔍 observing closely, using simple equipment
- 🔍 performing simple tests
- 🔍 identifying and classifying
- 🔍 using their observations and ideas to suggest answers to questions
- 🔍 gathering and recording data to help in answering questions.

Year 2 Autumn 1 (6 weeks)	Key concepts	Sequence of lessons	Sticky knowledge for this topic	Working scientifically	Snap Science Assessments
Big Question: How do things change over time? Snap Science Module: The Apprentice Gardener NC Strand – Plants (Biology)	Working Scientifically Structure Cause and effect Change Growth Function 	1. SS lesson 1 – What will seeds grow in to? (identifying different kinds of seeds) 2. SS lesson 2 – What do gardeners need to know? (set up observation over time enquiry – quick growing ‘sprouting’ seeds in bag) 3. SS lesson 3 – How should we plant seeds? (set up comparative test – broad beans) *Ongoing review – what is happening to our seeds over time?* 4. SS lesson 6 – How can we care for our plants? (plan to save a mature plant) 5. SS lesson 7 – What happens when a seed germinates? (results of investigation – stages of germination) And SS lesson 8 – Does it matter how we plant the seeds? (results of investigation – comparative test) 6. SS lesson 10 – What do plants need to grow and be healthy? (summarise findings of our ‘plan making’ investigation)	1. I can distinguish bulbs from seeds and explain that both grow into plants over time 2. I know that plants need water, light and a suitable temperature to grow and to stay healthy but different plants need different amounts of water and space to grow well and stay healthy 3. I know that, when planted, seeds germinate and grow into seedlings which then continue to grow into mature plants 4. I can describe how a plant has grown and changed over time 5. I can name simple parts of a plant – root, petal, stem, flower, bud, leaf 6. I can give examples of what happens when a plant has not had sufficient water or light, or a suitable temperature, e.g. leaves with dry out	Pupils might work scientifically by: observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or observing similar plants at different stages of growth; setting up a comparative test to show that plants need light and water to stay healthy.	1. Growing Plants 2. Plant Doctor

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Year 2 Autumn 2 (7.5 weeks)	Key concepts	Sequence of lessons	Sticky knowledge for this topic	Working scientifically	Snap Science Assessments
Big Question: What can we learn about the world around us? Snap Science Module: Growing Up NC Strand - Animals including Humans (Biology)	Working Scientifically Growth Change 	1. SS lesson 1 – What do babies need? (distinguishing between desirable and necessary) 2. SS lesson EL1 – What can we find out about babies? (interviewing a baby ‘expert’) 3. SS lesson 2 – How have we changed? (comparing a baby and a child) 4. SS lesson 3 – How do we change throughout our lives? (human life cycle) 5. SS lesson 4 – Do older children have bigger heads? (pattern-seeking investigation) 6. SS lesson EL2 – Do all our body parts grow as we get older? (independent investigation)	1. I know that all animals, including humans, have the basic needs of feeding, drinking and breathing that must be satisfied in order to survive 2. I know that an animal will die without air, water, food 3. I can distinguish between need for survival and needs which help some animals survive but are not essential for life, e.g. love, family, clothes, money 4. I can place the life cycle of a human in chronological order – baby, toddler, child, teenager, adult, elderly 5. I know that animals, including humans, have offspring which grow into adults. In humans and some animals, these offspring will be young, such as babies or kittens, that grow into adults. In other animals, such as chickens or insects, there may be eggs laid that hatch to young or other stages which then grow to adults 6. I know that the young of some animals do not look like their parents e.g. tadpoles.	Pupils might work scientifically by: observing, through video or first-hand observation and measurement, how different animals, including humans, grow; asking questions about what things animals need for survival and what humans need to stay healthy; and suggesting ways to find answers to their questions.	1. Basic needs 2. All grown up

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Year 2 Spring 1 (5.5 weeks)	Key concepts	Sequence of lessons	Sticky knowledge for this topic	Working scientifically	Snap Science Assessments
Big Question: How has diversity improved life? Snap Science Module: Materials: Good Choices NC Strand - Materials (Chemistry)	Working Scientifically Function Similarity and difference 	1. SS lesson 1 – Can you describe the object? (properties of materials) And SS lesson 2 – What material is it made of? (classifying by material type and why different materials have been chosen) 2. SS lesson 3 – Is that a good choice of material? (appropriate uses) 3. SS lesson 6 – What shall we use to make a tea bag? (comparative test) 4. SS lesson 7 – Which is the bounciest ball? (comparative test) 5. SS lesson 8 – What can you invent? (learn about inventors and develop own creative uses for objects)	1. I can choose a suitable material for a purpose 2. I can describe the properties which make a material suitable for a purpose, e.g. slate for roof tiles as it is hard, strong and waterproof 3. I can describe the properties which make a material unsuitable for a purpose, e.g. glass is waterproof but is too heavy and breaks too easily to be used as material for an umbrella 4. I can name different materials that an object can be made from and say which are suitable for how it will be used, e.g. thin plastic for disposable forks, but string metal for forks being washed and used over again 5. I can recognise advantages of some properties e.g. rubber is good for wellies as it is waterproof 6. I can recognise disadvantages of some properties e.g. rubber is good for waterproof wellies but it keeps in sweat from your feet	Pupils might work scientifically by: comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs); observing closely, identifying and classifying the uses of different materials, and recording their observations.	1. Which materials are suitable?

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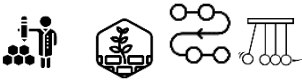
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Year 2 Spring 2 (6 weeks)	Key concepts	Sequence of lessons	Sticky knowledge for this topic	Working scientifically	Snap Science Assessments
Big Question: What makes a good place to live? Snap Science Module: What is in your Habitat? Our Changing World NC Strand - Living things and their Habitats (Biology)	Working Scientifically Adaptation Process Cause and effect 	1. OCW SS lesson 1 – What lives in a habitat? (investigate habitats nearby) 2. H SS lesson 1 – What lives in your habitat? (comparing things which have never lived, living, once lived) 3. H SS lesson 2 – What do different animals eat in their habitat? (food chains – linking to the Gruffalo) 4. H SS lesson 3 – Where can I live? (how animals are suited to their habitat) 5. H SS lesson 3 – Where can I live? (how animals are not suited to live in other habitats) 6. OCW SS lesson 4 – How do animals change? (life cycles)	1. I know that all objects are either living, dead or have never been alive. Living things are plants (including seeds) and animals. Dead things include dead animals and plants and parts of plants and animals that are no longer attached e.g. leaves and twigs, shells, fur, hair and feathers 2. I know that animals and plants live in a habitat to which they are suited, which means that animals have suitable features that help them move and find food and plants have suitable features that help them to grow well 3. I know that a habitat provides the basic needs of the animals and plants – shelter, food and water 4. I know that within a habitat there are different micro-habitats e.g. in a woodland – in the leaf litter, on the bark of trees, on the leaves. These micro-habitats have different conditions e.g. light or dark, damp or dry. These conditions affect which plants and animals live there 5. I can build a simple food chain with arrows pointing to the animal that does the eating 6. I know that the plants and animals in a habitat depend on each other for food and shelter	Pupils might work scientifically by: sorting and classifying things according to whether they are living, dead or were never alive, and recording their findings using charts. They should describe how they decided where to place things, exploring questions for example: 'Is a flame alive? Is a deciduous tree dead in winter?' and talk about ways of answering their questions. They could construct a simple food chain that includes humans (e.g. grass, cow, human). They could describe the conditions in different habitats and micro-habitats (under log, on stony path, under bushes) and find out how the conditions affect the number and type(s) of plants and animals that live there.	1. Who lives here? 2. Odd one out 3. Who eats what?

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Year 2 Summer 1 (6 weeks)	Key concepts	Sequence of lessons	Sticky knowledge for this topic	Working scientifically	Snap Science Assessments
Big Question: Where does the power come from? Snap Science Module: Take Care NC Strand - Animals including Humans (Biology)	Working Scientifically Change Growth 	1. SS lesson 1 – How can we sort this food? (grouping food using Venn and Carroll diagrams) 2. SS lesson 2 – What food should we eat? (planning meals) 3. SS lesson 3 – How can we stay fit? (exercise diary) 4. EL – plan and teach exercise activities to younger children 5. SS lesson 4 – How can we stay clean? (importance of keeping clean for our health) 6. SS lesson EL1 – How can we stay healthy? (picture books for younger children)	1. I can describe the importance of daily exercise e.g. to make us stronger and fitter, to make our heart beat faster 2. I can name some exercises e.g. running, jumping, lifting 3. I can describe occasion when I exercise, e.g. playtime, PE, at the park, journey to school 4. I know the right proportions of five different types of food for human. E.g. lots of fruit/vegetables, lots of bread/pasta/rice/other starchy carbohydrates, some dairy foods, some meat/fish/other non-dairy proteins, small amounts of sugary foods 5. I can explain at least four things we must do to stay clean and hygienic and how often, e.g. brush teeth, wash hands, change underwear, bath/shower, visit dentist 6. I can describe the importance of at least four different types of hygienic activity	Pupils might work scientifically by: observing, through video or first-hand observation and measurement, how different animals, including humans, grow; asking questions about what things animals need for survival and what humans need to stay healthy; and suggesting ways to find answers to their questions.	1. Caring for ourselves

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Year 2 Summer 2 (7.5 weeks)	Key concepts	Sequence of lessons	Sticky knowledge for this topic	Working scientifically	Snap Science Assessments
Big Question: Is everything what it first appears to be? Snap Science Module: Materials: Shaping Up NC Strand - Materials (Chemistry)	Working Scientifically Change Similarity and difference Cause and effect 	1. SS lesson 1 – How can I make different shapes? (squash, stretch, bend, twist) 2. SS lesson2 – How can I change the shape of an object? (test and sort objects) 3. SS lesson 3 – What property allows a material to be changed? (flexible, stretchy, rigid, stiff, squashy, elastic) 4. SS lesson EL1 – What can pushes and pulls do? (make a clay model using pushes and pulls – squash, stretch, bend, twist – identify which actions are used to make the model) 5. SS lesson 4 – Which material should I choose? (suitable uses) 6. SS lesson 5 – Which elastic shall we use for a catapult? (comparative test) 7. SS lesson 6 – What shall we use to make a catapult? (make and test catapult)	1. I can demonstrate squashing, stretching, bending and twisting 2. I can describe the result of each action, e.g. changes in length, thickness and shape 3. I can test and identify materials which can be changed by these actions 4. I can test and identify materials which cannot be changed by these actions 5. I can label materials as flexible, rigid, stretchy, squashy, elastic and stiff	Pupils might work scientifically by: comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs); observing closely, identifying and classifying the uses of different materials, and recording their observations.	1. Changing shape 2. Which materials are suitable?