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 1 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: Using Our Senses NC Strand - Animals including Humans (Biology)	Working Scientifically Function Variation 	1. **SS lesson 1 –** Is everyone's body the same? 2. **SS lesson 2** – What differences can our tongues taste? 3. **SS lesson 3** – What can we hear using our sense of hearing? 4. **SS lesson 4** – How can we explore the world using our sense of touch? 5. **SS lesson 5** – Which smells do we love and hate? 6. **SS lesson 6** – How do we use our sense to find out about the world around us?	1. I know that humans have key parts in common, but these vary from person to person 2. I can identify, name, draw and label the basic parts of the human body – head, neck, arm, elbow, knee, leg, hands, feet, face, ears, nose, eyes, mouth 3. I know that humans (and other animals) find out about the world using their senses 4. I can name the 5 senses – see, feel, smell, taste, hear 5. I can identify which part of the body is associated with each sense 6. I know that the part of the body observing the sense sends a message to the brain	Pupils might work scientifically by: using their senses to compare different textures, sounds and smells **Vocabulary** head, body, eyes, ears, mouth, teeth, senses, touch, see, smell, taste, hear, fingers, skin, eyes, nose, ears, tongue	1. Body parts

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Year 1 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: Sensing Seasons NC Strand - Seasonal Changes (Biology)	Working Scientifically Change Cause and effect Similarity and difference 	1. **SS lesson 1 –** How do the changing seasons affect me? (clothing) 2. **SS lesson 2** – What can we see and hear that shows us the seasons are changing? (part one) (scavenger hunt) 3. **SS lesson 3** – What can we see and hear that shows us the seasons are changing? (part two) 4. **SS lesson 4** – How does the weather change across the seasons? 5. **SS lesson 5** – What do different kinds of weather look and feel like? 6. **Our Changing World: Plants SS lesson 1 –** How do leaves change across the year? 7. **Our Changing World: Plants SS lesson 2 –** Do all trees lose their leaves in winter and grow new ones in spring? (evergreen and deciduous)	1. I can name the four seasons – Spring, Summer, Autumn, Winter 2. I can describe the weather associated with each season. In the UK, it is usually colder and rainier in winter, and hotter and dryer in the summer 3. I can observe that the change in weather causes many other changes like numbers of minibeasts found outside; seed and plant growth; leaves on trees 4. I can identify which clothes would be suitable for which season and weather e.g. sun hat for summer/sunny day 5. I can name a month of the year and which season it is in e.g. December is in Winter 6. I can describe how day length varies according to the season. In the UK, the day length is longest at mid-summer (about 16 hours) and gets shorter each day until mid-winter (about 8 hours) before getting longer again.	Pupils might work scientifically by: keeping records of how plants have changed over time, for example the leaves falling off trees and buds opening; making tables and charts about the weather; and making displays of what happens in the world around them, including day length, as the seasons change **<u>Vocabulary</u>** weather, sunny, rainy, raining, shower, windy, snowy, cloudy, hot, warm, cold, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, rainbow, seasons, winter, summer, spring, autumn, Sun, sunrise, sunset, day length	1. Which season is which? 2. Whatever the weather

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Year 1 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: Everyday Materials NC Strand - Materials (Chemistry)	Working Scientifically Function Similarity and difference 	1. **SS lesson 1 – What material is this? Part one** (name, identify and explore wood, metal and plastic) And **SS lesson 2 – What material is this? Part two** (name, identify and explore water, glass, rock and brick) 2. **SS lesson 3 – Is all paper the same?** And **SS lesson 4 – Is all fabric the same?** (investigations) 3. **SS lesson 5 – What's it made of?** (grouping and classifying – objects made from more than one material) 4. **SS lesson 6 – Can the same object be made from different materials?** (why some materials are better suited to making particular objects) 5. **SS lesson 7 – What's it like?** (physical observable properties) And **SS lesson 9 – How wet can you get?** (waterproof and absorbent)	1. I can identify and name a variety of materials – rock, glass, metal, plastic, wood, water 2. I can group objects of the same material and give observable similarities between materials that help identify them as the same material 3. I can find an object made of more than one material 4. I can name several properties of a given material, e.g. soft, smooth, shiny, dull, rough, hard, transparent, opaque, heavy, light, bendy, stretchy, waterproof, absorbent 5. I know how to test for these properties e.g. dropping water onto it to test of it is waterproof, pulling it to test if it is stretchy 6. I can select materials with opposite properties, e.g. absorbent and not absorbent	Pupils might work scientifically by: performing simple tests to explore questions, for example: 'What is the best material for an umbrella? ...for lining a dog basket? ...for curtains? ...for a bookshelf? ...for a gymnast's leotard?' **<u>Vocabulary</u>** object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through	1. What is it made of? 2. Materials and objects 3. What are my properties? 4. Comparing and grouping materials

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Year 1 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: Animal Antics and Looking at Animals NC Strand - Animals including Humans (Biology)	Working Scientifically Similarity and difference Variation 	1. **Animal Antics SS lesson 1** – Which animals live around our school? 2. **Looking at Animals SS lesson 1** – Who's who in the animal worlds? 3. **Looking at Animals SS lesson 2** – How are animals' bodies different? 4. **Looking at Animals SS lesson 3** – Do fish have fingers? 5. **Looking at Animals SS lesson 4** – What's so special about birds? 6. **Looking at Animals SS lessons 5** – How do different animals move?	1. I know that animals vary in many ways having different structures e.g. wings, tails, ears etc. They also have different skin coverings e.g. scales, feathers, hair 2. I know that these key features can be used to identify them as fish, amphibians, reptiles, birds or mammals 3. I can select and name at least two fish, amphibians, reptiles, birds and mammals 4. I can give a correct reason for choosing them based on observable features or known behaviours e.g. I know a pigeon is a bird because it has wings and can fly 5. I can name differences between groups e.g. birds have wings but mammals do not	Pupils might work scientifically by: using their observations to compare and contrast animals at first hand or through videos and photographs, describing how they identify and group them; grouping animals according to what they eat **Vocabulary** teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves	1. Name that animal 2. Describe and compare

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Year 1 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: Animal Antics and Looking at Animals continued NC Strand - Animals including Humans (Biology)	Working Scientifically Growth Process 	1. **Looking after Animals SS lesson 6 –** Whose food is this? 2. **Looking after Animals SS lesson EL4 –** Who is on the menu today? 3. **Looking after Animals SS lesson 7** – Which animals are busy at night? 4. **Looking after Animals SS lesson EL1** – Which animals live in our homes with us? 5. **Our Changing World SS lesson EL1** – How should we care for our pets? 6. **Looking after Animals SS lesson EL2** – Who's who at Old MacDonald's Farm?	1. I know that different animals eat different things 2. I know that some animals eat other animals and these are called carnivores 3. I know that some animals eat plants and these are called herbivores 4. I know that some animals eat both plants and animals and these are called omnivores 5. I know that some animals are wild and some are pets. Pets are friendly and trained to live with their owner. 6. I know that nocturnal animals are awake at night and diurnal animals are awake in the day	Pupils might work scientifically by: using their observations to compare and contrast animals at first hand or through videos and photographs, describing how they identify and group them; grouping animals according to what they eat; and using their senses to compare different textures, sounds and smells. **Vocabulary** carnivore, herbivore, omnivore, eat, food, plants, meat	1. Who eats what?

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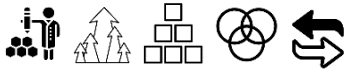
Year 1 Summer 2 (7.5 weeks)	Key concepts	Sequence of lessons	Sticky knowledge for this topic	Working scientifically	Snap Science Assessments
Big Question: Is everything what it first appears to be? Snap Science Module: Plant Detectives NC Strand - Plants (Biology)	Working Scientifically Growth Structure Similarity and difference Change 	1. **Enrichment Lesson** – planting seeds to observe growing and changing over time in the classroom throughout this half term 2. **SS lesson 1** – What garden plants can we find around school? 3. **SS lesson 2** – What wild plants can we find around our school? 4. **SS lesson 3** – What is the same and what is different about the flowers around us? 5. **SS lesson 4** – What is happening underground beneath our plants? 6. **SS lesson 5** – What makes a tree a tree? **7. Observing plants grown in the classroom** – what do they look like now?	1. I can name the parts of a plant/tree – stem, leaf, flower, root, branch, trunk, fruit 2. I can identify the parts of a plant/tree – stem, leaf, flower, root, branch, trunk, fruit 3. I know that all plants have roots, even if they can't be seen 4. I know that plants grow and change over time 5. I know there are different types of plants - wild plants, garden plants, trees, and can name some of each 6. I know that a deciduous tree loses its leaves in Autumn and regrows them in Spring And an evergreen tree keeps its leaves all year	Pupils might work scientifically by: observing closely, perhaps using magnifying glasses, and comparing and contrasting familiar plants; describing how they were able to identify and group them, and drawing diagrams showing the parts of different plants including trees; compare and contrast what they have found out about different plants	1. Name that plant 2. Name that part