Science Year 2

Knowledge and Skills:	Test Question, Apparatus, Method, Results, Conclusion. **Scientific Enquiry**	Examples
Know and recall accurately key facts relevant to the science topics below.	Children should be able to (by end of key stage) :	Ideas for prompting scientific enquiry:
Living Things and Their Habitats • Explore and compare the differences between things that are living (MRS GREN), dead, and things that have never been alive. • Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. • Identify and name a variety of plants and animals in their habitats, including microhabitats e.g. under a rock. Use a range of habitats including woodland, seashore, ocean, rainforest. • Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.	ϒ Observe closely, using simple equipment. Gather a range of objects e.g. pebbles, glass, sand, stick, ants (living), tomato plant, plastic bottle, fly (dead), snail (living), animal skull, herbs (in pot). Observe closely with magnifying glass/microscope. □ Identify and classify – based on above observations. □ Ask simple questions and recognise that they can be answered in different ways – produce annotated diagrams e.g. one living thing, 1 non-living. Put items into a table. ϒ Use their observations and ideas to suggest answers to questions . E.g. Is a flame alive? Is a deciduous tree dead in the Winter? ϒ Perform simple tests. Investigation – collect woodlice in a large tank. Set up the tank in 2 halves e.g. one half darker/lighter. One half dry or damp. Leave for a small period of time and then ask the children to observe the number of woodlice in each half of their 'habitats'. □ Use their observations and ideas to suggest answers to questions e.g. What type of habitat do woodlice prefer?	• Use the local environment throughout the year to explore and observe animal's habitat and diet. • Observe the growth of flowers and vegetables that they themselves have planted. • Seasonal walks e.g. to observe deciduous trees in all seasons. • Askham Bryan Wildlife centre visit/ Three Haggs Wood. • Create a microhabitat e.g. a wormery or ant farm. • Links to British wildlife are important e.g. a woodland food chain

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Plants • Observe and describe how seeds and bulbs grow into mature plants. • Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. • Introduce the requirements of plants for germination. Note: Seeds and bulbs need water to grow, but most do not need light; seeds and bulbs have a store of food inside them.	ϒ Observe closely using simple equipment. Observe the growth of a variety of plants as they change over time from a seed or a bulb, e.g. seasonal planting (bulbs in autumn for spring observation); vegetable patch in spring; scattering of flower seeds spring/summer. Measure height, water using mls/L, magnifying glasses. □ Perform simple tests Compare 2 plants where one is placed in natural light and one is kept in the dark (both need to be watered equally; Year 1 prior knowledge). □ Use their observations and ideas to suggest answers to questions, e.g. place several potatoes next to a source of warmth and several in the cold (ensure equal access to light). □ Gather and record data to help in answering questions. from above tests and observations.	• Use the local environment throughout the year to explore and answer questions about plants in their habitat. Observe life cycle of sapling to more mature plant. • At home observation of parents'/grandparents' greenhouses. Hot seat a gardener? • Observe a variety of bulbs and seeds germinating, e.g. potatoes, onions, broad beans, radishes, peas… • Observe the growth of flowers and vegetables that they themselves have planted – use the flower bed outside classroom/planters/woodslands – compare conditions, compare the growth and review findings

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Animals including Humans • Notice that animals, including humans, have offspring which grow into adults (baby, toddler, child, teenager, adult). • Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). • Describe the importance for humans of exercise, eating the right amounts of different types of food(nutrition), and hygiene.	□ Observe closely using simple equipment, e.g. incubator (eggs, chick, chicken, egg); net (caterpillar, pupa, butterfly); tank (frogspawn, tadpole, frog).Use magnifying glass, time-lapse photographs. □ Use their observations and ideas to suggest answers to questions, e.g. What stage comes after the caterpillar? □ Perform simple tests using simple equipment: In pairs use a stop clock to time how long a pupil can hold their breath. Record time in seconds. □ Gather and record data to help in answering questions. □ Gathering and recording data to answer questions, e.g. Who is likely to have the widest hand span? Children draw around own hand and measure their handspan in cm; they then draw around a Reception child's or teacher's hand and compare the two/three measurements.	• Visit from a baby, toddler, grandparent. • Bring photographs in from home to show their life cycle so far. • Seasonal walk to observe lambs and sheep/ farm visit. • Food chart for the week, e.g. breakfast. Can they identify where they could have made a healthier choice? • School Nurse visit/local GP for healthy diet/hygiene talk. • Dentist visit. • Glitter handshake: person 1 wets hand and covers in glitter and shakes hands with another person to pass it on – how far do the 'germs' travel? • Bread observation: 3 slices of bread. 1 untouched, 1 touched by teacher's hand, 1 rubbed on door handle. Observe mould growth (in sealed sandwich bag) after a week.

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Uses of Everyday Materials • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Some materials are used for more than one thing (metal can be used for coins, cans, cars, table legs; wood can be used for floors, matches, telegraph poles). Different materials can be used for the same thing, e.g. spoons can be made from plastic, wood, metal, but not normally from glass. Properties of materials can make them suitable or unsuitable for particular purposes. • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. Pupils might find out about people who have developed useful new materials, e.g. John Dunlop (tyres), Charles Macintosh (waterproof fabric) or John McAdam (road construction).	□ Identify and classify Investigation – Absorbent/ Non absorbent.. Provide a range of materials e.g. kitchen roll, paper towel, toilet roll, sugar paper, normal paper, foil. Use pipettes to drop a set number of water droplets onto material and observe. □ Use their observations and ideas to suggest answers to questions, e.g. Which material would be the most effective at mopping up a spillage? □ Ask simple questions and recognise that they can be answered in different ways. □ Perform simple tests. Which material would be best for a firefighter who wants to stay dry when using the hose? Investigation- Provide children with a selection of materials (2cm by 2cm). Balloon (latex), foil (aluminium), plastic (polypocket) kitchen roll, cotton wool. Using a pipette drop a set number of droplets and observe which are absorbed and which are not. □ Observe closely, using simple equipment E.g. Observe a range of materials and test whether their form can be changed. Complete a table with 4 headings stretch, twist, bend, squash, ticking yes or no. Items to test :block of wood, coin, flexible ruler, slinky, blue tac, sponge, marshmallows, elastic band, fabric, string etc	• Walk around the local area to 'I Spy' different materials and create a tally chart e.g. wooden gate, metal lamp post, plastic bin etc. • Walking water colour mixing observation • Design a pair of ear protectors for a Rowntrees Factory worker (noise insulator andcomfort). First – hand - range of items to choose from. • Create an observation table. Collections of materials which can be added to each week e.g. wooden items, metal items etc. • Rowntree factory trip. • Inside the factory clips. • Link art to clay. • Link DT – What would traction man use to build a school – design and build