Science

Skills

Observe carefully in order to gather data.

Phase 1

K1, K2, Year 1

Explore their environment to identify an attribute.

Manipulate objects to explore its properties (e.g. explore playdough for its physical properties).

Record data using simple pictures (or mark making) and charts (tally).

Explore objects for specific attributes.

Observe changes over time (e.g. seed-seedling-fully grown plant).

Use a variety of instruments and tools to measure data accurately.

Phase 1

K1, K2, Year 1

Make comparisons in measurement during structured activities.

Use non-standard units for measurement and record.

Make comparisons of measurement between mass, weight and temperature.

Use observation and scientific tools during structured and unstructured scientific investigations.

Choose appropriate equipment from a prescribed range.

Use scientific vocabulary to explain their observations and experiences.

Phase 1

K1, K2, Year 1

Discuss what is observed

Respond to questions regarding attributes of objects (e.g. What colour is it? What does it feel like? What can you do with it? Where does it come from?).

Discuss what is happening in a scientific investigation (initially using non scientific language, then with some scientific language (e.g. ‘I saw the reflection get lighter/darker') with initial teacher modeling of scientific vocabulary.

Discuss what is observed with a teacher/peers using specific scientific vocabulary (e.g. float/sink).

Name and describe several attributes of an object and event (e.g. ‘When the towel was absorbing water, I saw it go inside.').

Share findings using scientific vocabulary (e.g. 'This is heavier because it has more weight').

Identify or generate a question or problem to be explored.

Phase 1

K1, K2, Year 1

Respond to the world around them by using their senses.

Engage in scientific investigations by making observations (e.g. How does this work? What can you see happening? What makes it do that?).

Ask questions about the world around them, including about the scientific inquiry e.g. How? What will happen if? Why?

Recall scientific investigations.

Discuss scientific ideas and, with teacher support, ask questions.

Recall scientific investigations by identifying the problem investigated and suggest next steps.

Plan and carry out systematic investigations, manipulating variables as necessary.

Phase 1

K1, K2, Year 1

Identify changes in their immediate environment.

Use methods to collect information from observations.

Identify problems to solve during scientific investigations.

Begin to think of ways they can solve scientific problems.

Begin to think of ways to change outcomes in a scientific investigation (variables)

Identify variables within a scientific investigation.

Make and test predictions.

Phase 1

K1, K2, Year 1

Identify ways their environment can be the same and different.

Guess an outcome during structured activity working towards predicting a reasonable outcome during a structured experience.

Propose simple ideas to test during exploration (scientific or otherwise).

Identify similarities and differences in a range of contexts.

Make a prediction based on observations during a scientific investigation.

Interpret and evaluate data gathered in order to draw conclusions.

Phase 1

K1, K2, Year 1

Sort and classify by teacher/student selected criteria and draw a simple conclusion (e.g. collect smooth/rough stones and observing that not all rocks feel the same).

Recognise general patterns (e.g. If I water the plant it will grow) and patterns with specific criteria (e.g. most fabrics are absorbent).

Interpret information and offer simple explanations with one or two variables (e.g. the ball rolls fast because it is going down a hill).

Interpret information from a scientific learning engagement and offer their own explanations and predictions (e.g. this boat will sink because I put a heavy stone on top and now I will try a lighter stone to see if it sinks).

Compare results by observing another's investigation (e.g. My boat floated, but his boat sank when he pushed it under the water).

Consider scientific models and applications of these models (including their limitations).

Phase 1

K1, K2, Year 1

Discuss and show observations within a scientific investigation with teacher/peers (e.g. ‘Look, my water turned blue'.)

Demonstrate their understanding using concrete examples (e.g. make a ramp to make cars roll down faster) drawings and flow charts.

Draw simple conclusions and with teacher support and apply new scientific understandings to the current context (e.g. All living things need food, If I don't eat I will die because I'm a living thing).

Orally recounts steps in a scientific investigation to answer a specific question.

Conceptual Understandings

EARTH AND SPACE

Phase 1

K1, K2, Year 1

Weather, Seasons & Cycles

Weather can be described (e.g., rainy, windy, sunny). (M)

The environment changes over the seasons. (M)

Daily and seasonal changes in our environment, including the weather, affect everyday life. (A)

Form of Earth

There are different materials on Earth (e.g., rock, water, soil). (M)

Earth materials have a number of properties. (M)

There is air all around the Earth's surface. (H)

Form of the Universe and Earth’s place in it

The major features of sky can be described (e.g., clouds, Sun, moon). (M)

The Sun can only be seen in the daytime but the Moon can be seen sometimes at night, sometimes during the day. The Sun, Moon and stars all appear to move across the sky. (V)

There are many stars in our sky. Our Sun is one of many stars that make up the Universe. (H)

FORCES AND ENERGY

Phase 1

K1, K2, Year 1

Magnetism

Objects can have an effect on other objects even when they are not in contact with them. (H)

Magnets can be used to make some things move without being touched. (V)

Forces and motion

Forces can push, pull or twist objects, making them change their shape or motion. (H)

The way objects move depends on a variety of factors, including their size and shape. (A)

Objects move and can be moved in a number of ways (e.g., straight, zig zag, round and round, back and forth, and fast and slow, pushing, pulling, twisting, sinking). (M)

Energy

Energy is needed to make things change or move. (H)

Light, sound and heat are examples of energy.

LIVING THINGS

Phase 1

K1, K2, Year 1

Heredity

Living things produce offspring of the same kind, but in many cases offspring are not identical with each other or their parents. (H)

Plants can reproduce in different ways (e.g. cuttings).

Life cycles are different for different organisms. (M)

Form and function of cells and organisms

Living things (organisms) are distinguished from non-living things by their ability to move, reproduce and react to certain stimuli. (H)

Living things go through a process of growth and change. (M)

Most living things need water, food and air.

Plants need light to grow.

Living things respond to stimuli (i.e. senses help people respond to danger, plants grow toward light).

Cycles and systems

Plants and animals need certain resources for energy and growth (e.g., food, water, light, air, temperature conditions). (M)

Animals eat plants or other animals for food. (V)

Living things are found in certain environments because they have features that enable them to survive there. (H)

Evolution and adaptation

There are many different kinds of plants and animals in the world today and many kinds that once lived but are now extinct. We know about these from fossils. (H)

Living things can be grouped (e.g., by appearance, behaviour, plant, animal). (M)

MATERIALS AND MATTER

Phase 1

K1, K2, Year 1

Materials and matter

Different materials are recognisable by their properties, some of which are used to classify them as solids, liquids or gases. (H)

Observable properties of objects can be described (e.g., colour, shape, size). (M)

Objects can be sorted based on observable properties. (M)

The physical properties of things can change. (M)

Everyday materials can be physically changed in a variety of ways. (A)