Glossary

Adaptation

a physical or behavioural characteristic that is inherited and which result in an individual being more likely to survive and reproduce in its environment

Analyse

consider in detail for the purpose of finding meaning or relationships, and identifying patterns, similarities and differences

Characteristic

distinguishing aspect (including features and behaviours) of an object material, living thing or event

Classify

arrange into named categories in order to sort, group or identify

Collaborate

work with others to perform a specific task

Conclusion

a judgement based on evidence

Contemporary science

new and emerging science research and issues of current relevance and interest

Continuous data

quantitative data with a potentially infinite number of possible values along a continuum

Controlled variable

a variable that is kept constant (or changed in constant ways) during an investigation

Conventions

agreed methods of representing concepts, information and behaviours

Data

the plural of datum; the measurement of an attribute, e.g. the volume of gas or the type of rubber. This does not necessarily mean a single measurement: it may be the result of averaging several repeated measurements and these could be quantitative or qualitative

Dependent variable

a variable that changes in response to changes to the independent variable in an investigation

Design

plan and evaluate the construction of a product or process, including an investigation

Digital technologies

technology systems that handle digital data including hardware and software for specific purposes

Discrete data

quantitative data consisting of a number of separate values where intermediate values are not permissible

Environment

all the surroundings, both living and non-living

Evaluate

examine and judge the merit or significance of something, including processes, events, descriptions, relationships or data

Evidence

in science, evidence is data that is considered reliable and valid and which can be used to support a particular idea, conclusion or decision. Evidence gives weight or value to data by considering its credibility, acceptance, bias, status, appropriateness and reasonableness

Experimental (investigation)

an investigation that involves carrying out a practical activity

Fair test

an investigation where one variable (the independent variable) is changed and all other conditions (controlled variables) are kept the same; what is measured or observed is referred to as the dependent variable

Field work

observational research undertaken in the normal environment of the subject of the study

Force

a push or pull between objects which may cause one or both objects to change speed and/or the direction of their motion (i.e. accelerate) or change their shape. Scientists identify four fundamental forces: gravitational, electromagnetic (involving both electrostatic and magnetic forces), weak nuclear forces and strong nuclear forces. All interactions between matter can be explained as the action of one or a combination of the four fundamental forces

Formal measurement

measurement based on an agreed standard unit (e.g. metre, second, gram)

Graph

a visual representation of the relationship between quantities plotted with reference to a set of axes

Guided investigation

an investigation partly directed by the teacher

Hypothesis

a tentative idea, based on observation, that can be supported or refuted by experiment

Independent variable

the variable that is changed in an investigation to see what effect it has on the dependent variable

Informal measurement

measurement which is not based on any agreed standard unit (e.g. hand spans, paces, cups)

Investigation

a scientific process of answering a question, exploring an idea or solving a problem that requires activities such as planning a course of action, collecting data, interpreting data, reaching a conclusion and communicating these activities

Law

statement of a relationship based on available evidence

Local environment

surroundings that can be considered as proximal or familiar to the subject of investigation (eg. an organism, mountain, student)

Material

a substance with particular qualities or that is used for specific purposes

Matter

a physical substance; anything that has mass and occupies space

Model

a representation that describes, simplifies, clarifies or provides an explanation of the workings, structure or relationships within an object, system or idea

Multi-modal text

text that combines two or more communication modes e.g. print text, image and spoken word as in film or computer presentations

Natural materials

any product or physical matter that comes from plants, animals, or Earth and has undergone very little modification by humans e.g. minerals and the metals that can be extracted from them (without further modification) are considered natural materials

Observable

that which can be seen, heard, felt, tasted or smelled either directly by an individual or indirectly by a measuring device e.g. a ruler, camera or thermometer

Pattern

repeated occurrences or sequences

Primary source

in science, a primary source is information created by the person or persons directly involved in a study or observing an event

Processed materials

products of physical matter that have been modified from natural materials by human intervention or that do not occur at all in the natural environment, but have been designed and manufactured to fulfil a particular purpose

Property

attribute of an object or material, normally used to describe attributes common to a group

Qualitative data

information that is not numerical in nature

Quantitative data

numerical information

Reflect on

think carefully about something, such as past experiences, activities or events

Relationship

the connection or association between ideas or between components of systems and structures

Reliable data

data that has been judged to have a high level of reliability; reliability is the degree to which an assessment instrument or protocol consistently and repeatedly measures an attribute achieving similar results for the same population

Report

a written account of an investigation

Research

to locate, gather, record and analyse information in order to develop understanding

Scientific language

terminology that has specific meaning in a scientific context

Scientific literacy

the ability to use scientific knowledge, understanding, and inquiry skills to identify questions, acquire new knowledge, explain science phenomena, solve problems and draw evidence-based conclusions in making sense of the world, and to recognise how understandings of the nature, development, use and influence of science help us make responsible decisions and shape our interpretations of information

Scientist

a person who works within a recognised field of science

Secondary source

information that has been compiled from primary sources by a person or persons not directly involved in the original study or event

Senses

hearing, sight, smell, touch and taste

Simulation

a representation of a process, event or system which imitates the real situation

Survey

an investigation method involving asking questions of a range of respondents

Sustainable

supports the needs of the present without compromising the ability of future generations to support their needs

System

a group of interacting objects, materials or processes that form an integrated whole

Table

an arrangement of data or ideas in rows and columns

Technology

the development of products, services, systems and environments, using various types of knowledge, to meet human needs and wants

Theory

an explanation of a set of observations that is based on one or more proven hypotheses which has been accepted through consensus by a group of scientists

Tools

equipment used to make a task easier

Trend

general direction in which something is changing

Validity

the extent to which tests measure what was intended; the extent to which data, inferences and actions produced from tests and other processes are accurate

Variable

a factor that can be changed, kept the same or measured in an investigation e.g. time, distance, light, temperature