

Pupil Friendly Level Descriptors for Science

Pupils will be able to show evidence that they can,

Level 3

- follow a method and gain some results.
- plan a fair test with some help.
- explain the results in a simple way.
- describe differences between living and non-living things.
- describe how living things change because of their diet or light/water availability.
- sort materials into groups based on what they are or do (properties).
- recognise and sort types of changes into those which can be reversed and those which cannot.
- make simple explanations of why things happen, i.e. when something speeds up it is caused by a push or pull.

Level 4

- make predictions based on simple scientific knowledge.
- select the correct equipment and record the results in a table.
- draw simple graphs and use them to explain what happened in the experiment.
- name and recognise the major organs in plants and animals.
- draw food chains within a habitat.
- describe methods for separating simple mixtures.
- name types of change using scientific terms, i.e. evaporation.
- make predictions about whether changes will be able to be reversed or not.
- describe how to set up a simple electrical circuit.
- show a basic understanding of forces, gravity, magnetism, friction.

Level 5

- write a method including a fair test.
- carry out an investigation, using equipment accurately and repeating experiments.
- draw line graphs from the experimental results.
- suggest ways in which to improve investigation work.
- describe the jobs of each major organ in the body.
- draw the life cycle of plants and humans.
- put plants and animals into the correct class or group.
- describe the properties of metals, i.e. they conduct heat.
- identify a metal from a non-metal.
- explain how some things happen even when the reason cannot be seen, i.e. how balanced forces cause something to move at a steady speed.
- use a model to show how the Earth is moving.

Level 6

- use information and research to help when planning an investigation.
- use accurate equipment with fine-scale divisions.
- make conclusions which involve scientific understanding and language.
- identify results which do not fit a pattern and try to explain what caused them.

- describe life processes in plants and animals, i.e. photosynthesis, respiration.
- describe the similarities and differences between plant and animal cells.
- describe how the environment can affect the type and number of a plant or animal living in a habitat.
- use particle diagrams to explain the arrangement and movement of particles in a solid, liquid and gas.
- identify and describe some chemical reactions that are like each other.
- write word equations.
- describe and explain some more difficult ideas, i.e. how electrical items transfer electrical energy to other types.
- explain refraction and dispersion of light.

Level 7

- select and write methods to investigate relationships without assistance.
- explain conclusions using high level of scientific language and knowledge.
- explain life processes using the chemical equations for them.
- explain how different types of cell are adapted to their job.
- explain the difference between inherited characteristics and those caused or affected by environment.
- draw pyramids of number to show how feeding relationships affect the size of the populations in a habitat.
- draw formulae, symbols and particle diagrams to identify whether a chemical is an element, compound or mixture.
- use a pattern of chemical reactions to predict what will happen in another chemical reaction.
- describe and explain some even more difficult ideas, i.e. why objects are coloured, how gravitational attraction keeps the planets in motion.
- show how electricity and magnetism are linked.
- use equations to make calculations and use the correct units.

Level 8 (Teacher Assessment only)

- explain whether the data collected in an investigation is sufficient for the conclusion drawn.
- show how much uncertainty there is in the accuracy of data and the conclusions generated.
- describe (using genetics) how some characteristics are inherited.
- use graphs to explain patterns of change in a habitat.
- generate the chemical formula for a compound.
- use chemical formulae to write a balanced symbol equation.
- use chemical knowledge to suggest methods for making new compounds.
- use calculations which require more than one step.
- explaining what a graph is showing.

There are more detailed level descriptors for each individual unit at KS3 at, <http://ngfl.northumberland.gov.uk/science/selfassessment.htm>.

Your child will have these in their books, starting from 1st Nov 2005.

There are also copies of the 'step by step' levels for Investigation tasks (Staircase for pupils) which your child has been using in lessons at, <http://www.cambridge.org/uk/education/secondary/spectrum/downloads.htm>