

## Information for Parents/Carers

### SCIENCE TARGETS - A YEAR 1 SCIENTIST

#### Working scientifically

##### (Y1 and Y2)

I can ask simple scientific questions.

I can use simple equipment to make observations.

I can carry out simple tests.

I can identify and classify things.

I can suggest what I have found out.

I can use simple data to answer questions

#### Biology

##### Plants

I can name a variety of common wild and garden plants.

I can name the petals, stem, leaf and root of a plant.

I can name the roots, trunk, branches and leaves of a tree.

##### Animals, including humans

I can name a variety of animals including fish, amphibians, reptiles birds and mammals.

I can classify and name animals by what they eat (carnivore, herbivore and omnivore).

I can sort animals into categories (including fish, amphibians, reptiles, birds and mammals).

I can sort living and non-living things.

I can name the parts of the human body that I can see.

I can link the correct part of the human body to each sense.

#### Chemistry

##### Everyday materials

I can distinguish between an object and the material it is made from.

I can explain the materials that an object is made from.

I can name wood, plastic, glass, metal, water and rock.

I can describe the properties of everyday materials.

I can group objects based on the materials they are made from.

#### Physics

##### Seasonal changes

I can observe and comment on changes in the seasons.

I can name the seasons and suggest the type of weather in each season.

## Information for Parents/Carers

### Science Targets

#### Exceeding Year 1 Expectations

I can find out by watching, listening, tasting, smelling and touching.

I can talk about similarities and differences.

I can explain what I have found out using scientific vocabulary.

I can make accurate measurements.

I can classify animals according to a number of given criteria.

I can point out differences between living things and non-living things.

I can say why certain animals have particular characteristics

I can sort some plants by those that can be eaten and those that cannot.

I can sort some animals on a simple branching diagram with features such as meat eaters and non meat eaters; can swim and cannot swim.

I can explain what happens to certain materials when they are heated or cooled, for example, bread, ice, chocolate, jelly, etc.

## Information for Parents/Carers

### SCIENCE TARGETS - A YEAR 2 SCIENTIST

#### Working scientifically

##### (Y1 and Y2)

I can ask simple scientific questions.

I can use simple equipment to make observations.

I can carry out simple tests.

I can identify and classify things.

I can suggest what I have found out.

I can use simple data to answer questions

#### Biology

##### Living things and their habitats

I can identify things that are living, dead and never lived.

I can describe how a specific habitat provides for the basic needs of things living there (plants and animals).

I can identify and name plants and animals in a range of habitats.

I can match living things to their habitat.

I can describe how animals find their food.

I can name some different sources of food for animals.

I can explain a simple food chain.

##### Plants

I can describe how seeds and bulbs grow into plants.

I can describe what plants need in order to grow and stay healthy (water, light & suitable temperature).

##### Animals, including humans

I can explain the basic stages in a life cycle for animals, including humans.

I can describe what animals and humans need to survive.

I can describe why exercise, a balanced diet and good hygiene are important for humans.

#### Chemistry

##### Uses of everyday materials

I can identify and name a range of materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard.

I can suggest why a material might or might not be used for a specific job.

I can explore how shapes can be changed by squashing, bending, twisting and stretching.

#### Physics

No content.

## Information for Parents/Carers

### Science Targets

#### Exceeding Year 2 Expectations

I can say whether things happened as I expected and if not why not.

I can suggest more than one way of grouping animals and plants and explain my reasons.

I can use information from books and online sources to find things out.

I can name some characteristics of an animal that helps it to live in a particular habitat.

I can describe what animals need to survive and link this to their habitats.

I can describe what plants need to survive and link it to where they are found.

I can classify living things into groups according to a range of criteria I have been given.

I can describe the properties of different materials using words like transparent or opaque, flexible, etc.

I can say which materials are natural and which are man made.

I can tell which materials cannot be changed back after being heated, cooled, bent, stretched or twisted.

## Information for Parents/Carers

### SCIENCE TARGETS - A YEAR 3 SCIENTIST

#### Page 1

#### Working scientifically

##### (Y3 and Y4)

I can ask relevant scientific questions.

I can use observations and knowledge to answer scientific questions.

I can set up a simple enquiry to explore a scientific question.

I can set up a test to compare two things.

I can set up a fair test and explain why it is fair.

I can make careful and accurate observations, including the use of standard units.

I can use equipment, including thermometers and data loggers to make measurements.

I can gather, record, classify and present data in different ways to answer scientific questions.

I can use diagrams, keys, bar charts and tables; using scientific language.

I can use findings to report in different ways, including oral and written explanations, presentation.

I can draw conclusions and suggest improvements.

I can make a prediction with a reason.

I can identify differences, similarities and changes related to an enquiry.

#### Biology

##### Plants

I can describe the function of different parts of flowering plants and trees.

I can explore and describe the needs of different plants for survival.

I can explore and describe how water is transported within plants.

I can describe the plant life cycle, especially the importance of flowers.

##### Animals, including humans

I can explain the importance of a nutritious, balanced diet.

I can explain how nutrients, water and oxygen are transported within animals and humans.

I can describe and explain the skeletal system of a human.

I can describe and explain the muscular system of a human.

I can describe the purpose of the skeleton in humans and animals.

## Information for Parents/Carers

### SCIENCE TARGETS - A YEAR 3 SCIENTIST

#### Page 2

#### Chemistry

##### Rocks

I can compare and group rocks based on their appearance and physical properties, giving a reason.

I can describe how fossils are formed.

I can describe how soil is made.

I can describe and explain the difference between sedimentary and igneous rock.

#### Physics

##### Light

I can describe what dark is (the absence of light).

I can explain that light is needed in order to see.

I can explain that light is reflected from a surface.

I can explain and demonstrate how a shadow is formed.

I can explore shadow size and explain.

I can explain the danger of direct sunlight and describe how to keep protected.

##### Forces and magnets

I can explore and describe how objects move on different surfaces.

I can explain how some forces require contact and some do not, giving examples.

I can explore and explain how objects attract and repel in relation to objects and other magnets.

I can predict whether objects will be magnetic and carry out an enquiry to test this out.

I can describe how magnets work.

I can predict whether magnets will attract or repel and give a reason.

## Information for Parents/Carers

### Science Targets

#### Exceeding Year 3 Expectations

I can record and present what I have found using scientific language, drawings, labelled diagrams, bar charts and tables.

I can use my findings to draw a simple conclusion.

I can explain how the muscular and skeletal systems work together to create movement.

I classify living things and non-living things by a number of characteristics that I have thought of.

I can explain how some living things depend on one another to survive.

I can explore the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal

I am beginning to relate the properties of rocks with their uses

I can investigate the strengths of different magnets and find fair ways to compare them.

I can explain why lights need to be brighter or dimmer according to need.

I can explain why a shadow changes when the light source is moved closer or further from the object.

## Information for Parents/Carers

### SCIENCE TARGETS - A YEAR 4 SCIENTIST

#### Page 1

#### Working scientifically

##### (Y3 and Y4)

I can ask relevant scientific questions.

I can use observations and knowledge to answer scientific questions.

I can set up a simple enquiry to explore a scientific question.

I can set up a test to compare two things.

I can set up a fair test and explain why it is fair.

I can make careful and accurate observations, including the use of standard units.

I can use equipment, including thermometers and data loggers to make measurements.

I can gather, record, classify and present data in different ways to answer scientific questions.

I can use diagrams, keys, bar charts and tables; using scientific language.

I can use findings to report in different ways, including oral and written explanations, presentation.

I can draw conclusions and suggest improvements.

I can make a prediction with a reason.

I can identify differences, similarities and changes related to an enquiry.

#### Biology

##### Living things and their habitats

I can group living things in different ways.

I can use classification keys to group, identify and name living things.

I can create classification keys to group, identify and name living things (for others to use).

I can describe how changes to an environment could endanger living things.

##### Animals, including humans

I can identify and name the parts of the human digestive system.

I can describe the functions of the organs in the human digestive system.

I can identify and describe the different types of teeth in humans.

I can describe the functions of different human teeth.

I can use food chains to identify producers, predators and prey.

I can construct food chains to identify producers, predators and prey.



## Information for Parents/Carers

### SCIENCE TARGETS - A YEAR 4 SCIENTIST

#### Page 2

#### Chemistry

##### States of matter

I can group materials based on their state of matter (solid, liquid, gas).

I can describe how some materials can change state.

I can explore how materials change state.

I can measure the temperature at which materials change state.

I can describe the water cycle.

I can explain the part played by evaporation and condensation in the water cycle.

#### Physics

##### Sound

I can describe how sound is made.

I can explain how sound travels from a source to our ears.

I can explain the place of vibration in hearing.

I can explore the correlation between pitch and the object producing a sound.

I can explore the correlation between the volume of a sound and the strength of the vibrations that produced it.

I can describe what happens to a sound as it travels away from its source.

##### Electricity

I can identify and name appliances that require electricity to function.

I can construct a series circuit.

I can identify and name the components in a series circuit (including cells, wires, bulbs, switches and buzzers).

I can draw a circuit diagram.

I can predict and test whether a lamp will light within a circuit.

I can describe the function of a switch in a circuit.

I can describe the difference between a conductor and insulators; giving examples of each.

## Information for Parents/Carers

### Science Targets

#### Exceeding Year 4 Expectations

I can plan and carry out a scientific enquiry by controlling variables fairly and accurately.

I can use test results to make further predictions and set up further comparative tests.

I can record more complex data and results using scientific diagrams, classification keys, tables, bar charts, line graphs and models.

I can report findings from scientific enquiries through written explanations and conclusions.

I can explain how people, weather and the environment can affect living things.

I can group and classify a variety of materials according to the impact of temperature upon them.

I can relate temperature to the change of state of materials.

I can work out which metals can be used to connect across a gap in a circuit.

## Information for Parents/Carers

### SCIENCE TARGETS - A YEAR 5 SCIENTIST

#### Page 1

#### Working scientifically

##### (Y5 and Y6)

I can plan different types of scientific enquiry.

I can control variables in an enquiry.

I can measure accurately and precisely using a range of equipment.

I can record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.

I can use the outcome of test results to make predictions and set up a further comparative fair test.

I can report findings from enquiries in a range of ways.

I can explain a conclusion from an enquiry.

I can explain causal relationships in an enquiry.

I can relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory.

I can read, spell and pronounce scientific vocabulary accurately.

#### Biology

##### Living things and their habitats

I can describe the life cycle of different living things, e.g. mammal, amphibian, insect bird.

I can describe the differences between different life cycles.

I can describe the process of reproduction in plants.

I can describe the process of reproduction in animals.

##### Animals, including humans

I can create a timeline to indicate stages of growth in humans.

#### Chemistry

##### Properties and changes of materials

I can compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity, [electrical & thermal], and response to magnets).

I can describe how a material dissolves to form a solution; explaining the process of dissolving.

I can describe and show how to recover a substance from a solution.

I can describe how some materials can be separated.

I can demonstrate how materials can be separated (e.g. through filtering, sieving and evaporating).

I know and can demonstrate that some changes are reversible and some are not.

I can explain how some changes result in the formation of a new material and that this is usually irreversible.

I can discuss reversible and irreversible changes.

I can give evidenced reasons why materials should be used for specific purposes.

## Information for Parents/Carers

### SCIENCE TARGETS - A YEAR 5 SCIENTIST

#### Page 2

##### Physics

###### Earth and space

I can describe and explain the movement of the Earth and other planets relative to the Sun.

I can describe and explain the movement of the Moon relative to the Earth.

I can explain and demonstrate how night and day are created.

I can describe the Sun, Earth and Moon (using the term spherical).

###### Forces

I can explain what gravity is and its impact on our lives.

I can identify and explain the effect of air resistance.

I can identify and explain the effect of water resistance.

I can identify and explain the effect of friction.

I can explain how levers, pulleys and gears allow a smaller force to have a greater effect.

## Information for Parents/Carers

### Science Targets

#### Exceeding Year 5 Expectations

I can explore different ways to test an idea, choose the best way and give reasons.

I can vary one factor whilst keeping the others the same in an experiment.

I can use information to help make a prediction.

I can explain (in simple terms) a scientific idea and what evidence supports it.

I can create a timeline to indicate the stages of growth in certain animals, such as frogs and butterflies.

I can observe my local environment and draw conclusions about life-cycles, for example, the vegetable garden or plants in a shrubbery.

I can describe methods for separating mixtures, for example, filtration, distillation.

I can compare the time of day at different places on Earth.

I can describe and explain how motion is affected by forces, for example, gravitational attractions, magnetic attraction and friction.

I can work out how water can cause resistance to floating objects.

## Information for Parents/Carers

### SCIENCE TARGETS - A YEAR 6 SCIENTIST

#### Page 1

#### **Working scientifically**

##### **(Y5 and Y6)**

I can plan different types of scientific enquiry.

I can control variables in an enquiry.

I can measure accurately and precisely using a range of equipment.

I can record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.

I can use the outcome of test results to make predictions and set up a further comparative fair test.

I can report findings from enquiries in a range of ways.

I can explain a conclusion from an enquiry.

I can explain causal relationships in an enquiry.

I can relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory.

I can read, spell and pronounce scientific vocabulary accurately.

#### **Biology**

##### Living things and their habitats

I can classify living things into broad groups according to observable characteristics and based on similarities & differences.

I can describe how living things have been classified.

I can give reasons for classifying plants and animals in a specific way.

##### Animals, including humans

I can identify and name the main parts of the human circulatory system.

I can describe the function of the heart, blood vessels and blood.

I can discuss the impact of diet, exercise, drugs and life style on health.

I can describe the ways in which nutrients and water are transported in animals, including humans.

##### Evolution and inheritance

I can describe how the earth and living things have changed over time.

I can explain how fossils can be used to find out about the past.

I can explain about reproduction and offspring (recognising that offspring normally vary and are not identical to their parents).

I can explain how animals and plants are adapted to suit their environment.

I can link adaptation over time to evolution.

I can explain evolution.

## Information for Parents/Carers

### SCIENCE TARGETS - A YEAR 6 SCIENTIST

#### Page 2

#### Physics

#### Physics

##### Light

I can explain how light travels.

I can explain and demonstrate how we see objects.

I can explain why shadows have the same shape as the object that casts them.

I can explain how simple optical instruments work, e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.

##### Electricity

I can explain how the number and voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer.

I can compare and give reasons for why components work and do not work in a circuit.

I can draw circuit diagrams using the correct symbols.

## Information for Parents/Carers

### Science Targets

#### Exceeding Year 6 Expectations

I can use information from different sources to answer a question and plan a scientific enquiry.

I can make a prediction that links with other scientific knowledge.

I can plan in advance which equipment I will need and use it appropriately.

I can link my conclusions to other scientific knowledge.

I can explain how some living things adapt to survive in extreme conditions.

I can analyse the advantages and disadvantages of specific adaptations, such as being on two rather than four feet.

I am beginning to understand about the nature of DNA.

I can readily group animals into reptiles, fish, amphibians, birds and mammals.

I can make a diagram of the human body and explain how different parts work and depend on one another.

I can compare the organ systems of humans to those of other animals.

I can use the ray model to explain the size of shadows.

I can explain the danger of short circuits and what a fuse is.