Year 1 SCIENCE

Working Scientifically
1. I can ask simple questions and answer my questions using simple sentences.
2. I can explain my results using simple sentences.
3. I can compare objects. For e.g. size, shape, colour, etc.
4. I can make observations.
5. I can perform simple tests.
6. I can present what I have learnt pictorially, verbally or in a **simple table.**
7. I can identify and classify.

Plants – Autumn 1

- I can identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.
- I can identify and describe the basic structure of a variety of common flowering plants, including trees.

Humans – Autumn 2

- I can identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.

Animals – Spring 1 and 2

- I can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.
- I can identify and name a variety of common animals that are carnivores, herbivores and omnivores
- I can describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets),

Everyday Materials – Summer 1

- I can distinguish between an object and the material from which it is made.
- I can identify and name a variety of everyday materials, including I wood, plastic, glass, metal, water, and rock.
- I can describe the simple physical properties of a variety of everyday materials
- I can compare and group together a variety of everyday materials on the basis of their simple physical properties.

Seasonal Changes – Summer 2 **Scientist: Charles Macintosh**

- I can observe changes across the four seasons.
- I can observe and describe weather associated with the seasons and how day length varies.

Year 2 SCIENCE

Working Scientifically
1. I can ask questions and answer my question in simple sentences using my observations or measurements.
2. I can explain my results in simple sentences using my results or measurements.
3. I can compare objects based on obvious observable features. For e.g. size, shape, colour, texture, etc.
4. I can make observations, including observing something over a period of time to answer a question.
5. I can choose the equipment I need to perform simple tests.
6. I can record what I have learnt pictorially, verbally, using **pictograms, block diagrams, Venn diagrams** or simple tables.

Uses of everyday materials – Autumn 1 **Scientist: John Loudon McAdam**

- I can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.
- I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

Plants – Autumn 2

- I can observe and describe how seeds and bulbs grow into mature plants.
- I can find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.

Animals, including humans – Spring 1

- I can notice that animals, including humans, have offspring which grow inside
- I can find out about and describe the basic needs of animals, including humans, for survival (water, food and air).

Animals, including humans – Spring 2

- I can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.

All Living Things and their Habitats – Summer 1 and 2

- I can explore and compare the differences between things that are living, dead, and things that have never been alive.
- I can 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.
- I can identify and name a variety of plants and animals in their habitats, including micro habitats.
- I can 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.

Year 3 SCIENCE

Working Scientifically
1. I can ask questions and use simple scientific language to answer them.
2. I can explain my results using simple scientific language and present my results in labelled diagrams, Venn diagrams and bar charts.
3. I can compare objects based on more sophisticated observable features. For e.g. appearance, density, durable, hard or soft, etc.
4. I can make observations over a period of time and decide how often to take a measurement.
5. I can choose the equipment I need to perform simple tests and draw simple conclusions from it.
6. I can make comparisons and identify similarities and differences.
7. I can record data in **bar charts, Venn diagrams,** verbally and draw simple conclusions from this.
8. I can use results from an investigation to make a prediction about a further result.

Light – Autumn 1

- I can recognise that they need light in order to see things and that dark is the absence of light
- I can notice that light is reflected from surfaces
- I can recognise that light from the sun can be dangerous and that there are ways to protect their eyes • I can recognise that shadows are formed when the light from a light source is blocked by a solid object
- I can find patterns in the way that the size of shadows change.

Animals, including humans (Nutrition) – Autumn 2

- I can identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.

Plants – Spring 1

- I can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers
- I can explore the requirements of plants for life and growth (air, light, water, nutrients from soil, a room to grow) and how they vary from plant to plant
- I can investigate the way in which water is transported within plants
- I can explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.

Animals, including humans (Skeleton/Muscles) – Spring 2.

- I can identify that humans and some other animals have skeletons and muscles for support, protection and movement.

Forces and Magnets – Summer 1

- I can compare how things move on different surfaces
- I can notice that some forces need contact between two objects, but magnetic forces can act at a distance
- I can observe how magnets attract or repel each other and attract some materials and not others describe magnets as having two poles
- I can predict whether two magnets will attract or repel each other, depending on which poles are facing.
- I can compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials

Rocks – Summer 2 **Scientist: Mary Anning**

- I can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties
- I can describe in simple terms how fossils are formed when things that have lived are trapped within rock
- I can recognise that soils are made from rocks and organic matter.

Year 4 SCIENCE

Working Scientifically
1 I can ask questions and use simple scientific language to answer them and refer directly to the evidence when answering my question. I can suggest improvements and limitations and suggest new questions arising from the investigation.
2. I can explain my results using simple scientific language and present my results in labelled diagrams, Venn and Carroll diagrams, time graphs or bar charts.
3. I can compare objects based on more sophisticated observable features. For e.g. volume, vertebrate or invertebrate
4. I can make observations over a period of time and decide how often to take a measurement. I can also present these observations in labelled diagrams.
5. I can choose the equipment I need to perform simple tests, and draw simple conclusions from it and provide simple explanations for them.
6. I can record data in bar charts, Venn diagrams, **Carroll diagrams,** verbally or **time graphs** or prepare own tables and draw simple conclusions from this.
7. I can use results from an investigation to make a prediction about a further result.
8. I can use accurate measurement using standard units or use data loggers to measure over time.

Living things and their habitats – Autumn 1 **Scientist: Jane Goodall**

- I can recognise that living things can be grouped in a variety of ways.
- I can explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.
- I can recognise that environments can change and that this can sometimes pose dangers to living things.

Electricity – Autumn 2

- I can identify common appliances that run on electricity.
- I can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.
- I can identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.
- I can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.
- I can recognise some common conductors and insulators, and associate metals with being good conductors.

Animals, including humans – Spring 1 and 2

- I can describe the simple functions of the basic parts of the digestive system in humans.
- I can identify the different types of teeth in humans and their simple functions.
- I can construct and interpret a variety of food chains, identifying producers, predators and prey.

States of matter – Summer 1

- I can compare and group materials together, according to whether they are solids, liquids or gases.
- I can observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).
- I can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

Sound – Summer 2

- I can identify how sounds are made, associating some of them with something vibrating.
- I can recognise that vibrations from sounds travel through a medium to the ear.
- I can find patterns between the pitch of a sound and features of the object that produced it.
- I can find patterns between the volume of a sound and the strength of the vibrations that produced it.
- I can recognise that sounds get fainter as the distance from the sound source increases.

Year 5 SCIENCE

Working Scientifically

1. I can ask questions and use scientific language to answer them and refer directly to the evidence when answering my question.
   I can discuss the degree of trust in the source I have used or in the measurements that I have taken to answer my question.
   I can identify the type of enquiry that I will need to plan to answer my question.
2. I can explain my results using simple scientific language and choose an appropriate form of presentation to present my results. For e.g. Venn or diagrams, bar charts or line graphs.
3. I can compare objects based on physical properties. For e.g. reversible or irreversible, permeable or absorbent, etc.
4. I can make observations over a period of time and decide how often to take a measurement and for how long. I can also present these observations in labelled diagrams.
5. I can choose the equipment I need to fair or comparative tests, and draw conclusions from it and provide oral and written explanations for them.
6. I can choose an appropriate form of presentation to record my data. For e.g. bar charts, Venn diagrams, **Carroll diagrams,** verbally or time graphs or **line graphs** to draw simple conclusions from this.
7. I can use results from an investigation to make a prediction about a further result.
8. To take accurate measurement using standard units that has scales involving decimals.
9. I can explain that my results are accurate based on my measurements and the sources that I have used.

Earth and Space – Autumn 1 **Scientist: Nicolaus Copernicus**

- I can describe the movement of the Earth, and other planets, relative to the Sun in the solar system.
- I can describe the movement of the Moon relative to the Earth.
- I can describe the Sun, Earth and Moon as approximately spherical bodies.
- I can use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.

Animals, including humans – Autumn 2

- I can describe the changes as humans develop to old age.

Properties and changes of materials – Spring 1

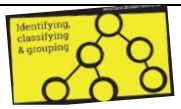
- I can compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.
- I know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.
- I can use knowledge of solids, liquids and gases to decide how mixtures might beseparated, including through filtering, sieving and evaporating.
- I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.
- I can demonstrate that dissolving, mixing and changes of state are reversible changes.
- I can explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.

Forces – Spring 2 **Scientist: Galileo Galilei**

- I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.
- I can identify the effects of air resistance, water resistance and friction, that act between moving surfaces.
- I can recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greatest effect.

Living things and their habitats – Summer 1 (Plants) and Summer 2

- I can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.
- I can describe the life process of reproduction in some plants and animals.



Year 6 SCIENCE

Working Scientifically	Autumn	Spring	Summer

1. I can ask questions and use scientific language to answer them and refer directly to the evidence when answering my question.
   I can discuss the degree of trust in the source I have used or in the measurements that I have taken to answer my question.
   I can identify the type of enquiry that I will need to plan to answer my question.
2. I can explain my results using simple scientific language and choose an appropriate form of presentation to present my results. For e.g. Venn or diagrams, bar charts, line graphs or scatter graph.
3. I can compare and classify objects/animals based on physical properties. For e.g. use a flow chart to classify molluscs, arachnids, crustaceans, etc.
4. I can make observations over a period of time and decide how often to take a measurement and for how long. I can also present these observations in labelled diagrams. I can recognise and control variables (anything that can be changed or be changed) where necessary.
5. I can choose an appropriate form of presentation to record my data. For e.g. bar charts, Venn diagrams, Carroll diagrams, verbally or time graphs**, line graphs** or **scatter graphs** to draw conclusions from this.
6. I can use results from an investigation to make a prediction about a further result.
7. To take accurate measurement using standard units that has scales involving decimals and take repeat readings where appropriate.
8. I can explain that my results are accurate based on the measurements I have taken and the sources that I have used.

Electricity – Autumn 1

- I can associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.
- I can compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.
- I can use recognised symbols when representing a simple circuit in a diagram.

Light – Autumn 2

- I can use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.
- I can explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.
- I can use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

Animals, including humans – Spring 1 and 2

- I can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.
- I can recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.
- I can describe the ways in which nutrients and water are transported within animals, including humans.

Evolution and inheritance – Summer 1 **Scientist: Charles Darwin**

- I can recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.
- I can recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.
- I can identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

Living things and their habitats – Summer 2 **Scientist: Carl Linnaeus**

- I can describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro- organisms, plants and animals.
- I can give reasons for classifying plants and animals based on specific characteristics.