

## Reception

<p><b>Working Scientifically</b></p> <ul style="list-style-type: none"><li>• I know that scientists find out about the world.</li><li>• I know that investigate means to find out.</li></ul> <p><b>Vocabulary</b></p> <ul style="list-style-type: none"><li>• Scientist</li><li>• Investigate</li></ul> <p><b>Me and My Body</b></p> <p><b>Humans and Animals</b></p> <ul style="list-style-type: none"><li>• I know I need to keep my body healthy by eating the right food and exercising.</li><li>• I know it is important to wash my hands.</li><li>•</li></ul> <p><b>Vocabulary</b></p> <ul style="list-style-type: none"><li>• Body</li><li>• Healthy</li><li>• Exercise</li></ul> <p><b>Materials</b></p> <p><b>Materials and their Properties</b></p> <ul style="list-style-type: none"><li>• I know materials feel differently and they can be used for different purposes.</li><li>• I know that ice melts in hot weather.</li></ul> <p><b>Vocabulary</b></p> <ul style="list-style-type: none"><li>• Material</li><li>• Wood</li><li>• Plastic</li><li>• Glass</li></ul>	<p><b>Animals</b></p> <p><b>Humans and Animals</b></p> <ul style="list-style-type: none"><li>• I know the names of some common animals.</li><li>• I know that some animals are kept as pets.</li><li>• I know that different animals live in different parts of the world.</li><li>• I know that animals need to eat and drink too.</li><li>• I know that minibeasts are tiny creatures and some good places to look for them.</li></ul> <p><b>Vocabulary</b></p> <ul style="list-style-type: none"><li>• Animal</li><li>• Fish</li><li>• Minibeast</li><li>• Pet</li></ul> <p><b>Plants</b></p> <ul style="list-style-type: none"><li>• I know that most plants have leaves and some have flowers.</li><li>• I know plants grow</li></ul> <p><b>Vocabulary</b></p> <ul style="list-style-type: none"><li>• Plant</li><li>• seeds</li><li>• Grow</li><li>• Leaves</li><li>• Flowers</li></ul> <p><b>The Seasons</b></p> <p><b>Our World and The Universe</b></p> <ul style="list-style-type: none"><li>• I know there are different seasons</li><li>• I know that winter is cold and summer is hot.</li></ul> <p><b>Vocabulary</b></p> <ul style="list-style-type: none"><li>• Season</li></ul>
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## Year 1

<p><b>Working Scientifically</b></p> <ul style="list-style-type: none"><li>• I know that I can find something out by performing a test.</li><li>• I know how to make a prediction</li><li>• I know that I need to record what I find out.</li><li>• I know that a scientific drawing should show exactly what I can see.</li></ul> <p><b>Vocabulary</b></p> <ul style="list-style-type: none"><li>• Test</li><li>• Predict</li><li>• Record</li><li>• Scientific drawing</li></ul> <p><b>Humans and Animals</b></p> <ul style="list-style-type: none"><li>• I know what an animal is.</li></ul>	<p><b>Plants</b></p> <p><b>Plants</b></p> <ul style="list-style-type: none"><li>• I know that names of some common garden and wild plants, including trees.</li><li>• I know the difference between a deciduous and evergreen trees.</li><li>• I know that most plants are made up of roots, stem, leaves, buds, petals.</li><li>• I know that plants produce fruits containing seeds or bulbs.</li><li>• I know that a tree is made up of a trunk, roots, branches, leaves and/or buds.</li></ul> <p><b>Vocabulary</b></p> <ul style="list-style-type: none"><li>• Deciduous</li><li>• Evergreen</li><li>• Roots</li></ul>
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- I know that mammals, fish, amphibians, reptiles and birds are different kinds of animals.
- I know the names of some common animals.
- I know that carnivore means meat eater and can name some common carnivores.
- I know that herbivore means plant eater and can name some common carnivores.
- I know that omnivores eat both meat and plants and that humans are omnivores.
- I know the names of the body parts of some common animals.
- I know the names, locations and functions of a wider range of human body parts including nose, ears, eyes, tongue, eye lashes, lips, feet and skin.

#### **Vocabulary**

- Carnivore
- Herbivore
- Omnivore
- Senses
- Taste
- Touch
- Sight
- Hearing
- Smell
- Mammals
- Reptiles
- Fish
- Birds
- Amphibians

#### **Seasonal Changes**

- I know that that weather in the winter is more likely to be cold, snow, fog or ice and the weather in summer is more likely to be sunny and warm.
- I know that it can be rainy all year round.
- I know that in Spring, new plants begin to grow and many animals give birth to their young
- I know that in Autumn, the natural world gets ready for winter: animals prepare for hibernation; some trees lose their leaves and produce seeds/nuts and plants begin to die.
- I know that in Summer the days are longer and in Winter they are shorter.

#### **Vocabulary**

- Weather
- Seasonal change
- Snow
- Ice
- Fog
- Rain
- Temperature
- Natural world
- Hibernation

- Stem
- Bud
- Petal
- Trunk
- Branch
- Fruit

#### **Materials and their Properties**

- I know what an object is and that a material is what it is made from.
- I know the materials wood, plastic, metal, water, glass, brick, fabric, paper, foil, elastic and rock and can describe their properties.
- I know that different materials have different properties and this makes them useful for different things.
- I know that some objects are rough/smooth, shiny/dull, waterproof/not waterproof, hard/soft, absorbent/non absorbent and stretchy/stiff.

#### **Vocabulary**

- Material
- Properties
- Similar
- Manmade
- Natural
- Waterproof
- Rough/smooth
- Shiny/dull
- Hard/soft
- Stretchy/stiff
- Absorbent/non absorbent

**Working Scientifically**

- I know how to make a test fair.
- I know that I need to make observations to find information.
- I know I need the right equipment for my test.
- I know that what I find out are called results.
- I know how to ask a scientific question.
- I know what the word identify means.

**Vocabulary**

- Fair test
- Observe
- Identify
- Equipment
- Results
- Questions

**Living Things and their Habitats**

- I know that some things are living, some are dead and some have never been alive.
- I know that the place where living things live is called a habitat.
- I know that living things are suited to their habitats and that an animal's habitat provides what it needs.
- I know that many different plants and animals can live in a single habitat and they depend on one another.
- I know the names of the animals and plants in some habitats.
- I know what a food chain is.

**Vocabulary**

- Living
- Dead
- Habitat
- Suited
- Depend
- Food chain

**Uses of Everyday Materials**

- I know that some materials are suitable for making specific items such as glass windows, wooden/plastic rulers or metal/plastic spoons.
- I know that some materials are not suitable for specific items, for example glass chairs or paper saucepans.
- I know that the shape of some materials can be changed when they are stretched, twisted, bent and squashed.

**Vocabulary**

- Suitable
- Transparent
- Change
- Stretch
- Twist
- Squash
- Bend

**Plants**

- I know that plants also need nutrients, light, water and the correct temperature to grow and stay healthy.
- I know that plants have seeds and bulbs to reproduce.
- I know that when seeds germinate roots first and then a shoot appears.
- I know that plants change as they grow.

**Vocabulary**

- Germinate
- Living things
- Nutrients
- Temperature
- Shoot
- Alive

**Animals Including Humans**

- I know that animals, including humans produce offspring that grow into adults
- I know some of the words used to describe growth in humans and animals such as baby, toddler, calf, puppy.
- I know that the way animals grow and change is called a life cycle.
- I know that animals need water, food and air for survival.
- I know that, to be healthy, humans must exercise, eat a balanced diet and have good hygiene.
- I know that my heart beats more quickly when I exercise.

**Vocabulary**

- Offspring
- Life cycle
- Growth
- Adult
- Survival
- Breathe
- Health
- Balanced diet
- Hygiene
- Heart beat

**Working Scientifically**

- I know that a scientific explanation should be based on evidence.
- I know that the information I collect is called data.
- I know that my measurements must be accurate.
- I know the names of some scientific equipment such as thermometer and data logger.
- I know how to plan my own experiment.
- I know how to make a conclusion.

**Vocabulary**

- Conclusion
- Accurate
- Measurement
- Explanation
- Thermometer
- Data
- Evidence
- Experiment

**Animals Including Humans**

- I know what nutrition means.
- I know that animals, including humans, need the right amount and type of nutrition to be healthy.
- I know that animals get nutrition from what they eat.
- I know that animals have skeletons and muscles for support, protection and movement.
- I know the name and function some of the main human bones.
- I know that muscles contract and relax.

**Vocabulary**

- Nutrition
- Skeleton
- Muscles
- Support
- Protection
- Movement
- Contract
- Relax
- Bones
- Ribs
- Skull
- Spine
- Femur
- Pelvis

**Light**

- I know we need light to be able to see things and darkness is the absence of light.
- I know that light comes from a light source.

**Plants**

- I know the function of the roots, stem/trunk, leaves and flowers.
- I know that plants make their own food.
- I know how water is transported in a plant.
- I know that different plants need different amounts of water, light, room to grow etc.
- I know that pollen is made in flowers.
- I know that seeds are formed when a flower is pollinated.
- I know what seed dispersal means.

**Vocabulary**

- Function
- Transport
- Pollen
- Pollination
- Seed dispersal

**Forces and Magnets**

- I know that forces are pushes and pulls that act in opposite directions.
- I know that these forces change the motion of an object. For example a force can make an object start to move or speed up, slow it down or even make it stop.
- I know that friction is a force created by the surface an object is moving across and some surfaces create more friction than others.
- I know that magnets create force on an object without have to touch it.
- I know that not all materials are magnetic and can name some that are.
- I know that magnets have two poles: the same poles repel one another and opposites attract.

**Vocabulary**

- Force
- Push
- Pull
- Friction
- Magnet/magnetic
- Poles
- Attract
- Repel

**Rocks**

- I know that sedimentary rocks are formed from soil and smaller rocks building up at the bottom of lakes and rivers and being compressed.
- I know that metamorphic rocks are formed when other rocks change by, for example, being heated or squeezed.
- I know that soil and sand is formed in two ways: when rocks are weathered or eroded or from organic matter.

<ul style="list-style-type: none"> <li>• I know that light can be reflected from some surfaces.</li> <li>• I know that it is dangerous to look directly at the sun, even with sunglasses on.</li> <li>• I know that shadows are formed when light is blocked by an opaque object.</li> <li>• I know that the size of a shadow is caused by its distance from the light source.</li> </ul> <p><b>Vocabulary</b></p> <ul style="list-style-type: none"> <li>• Light source</li> <li>• Reflection</li> <li>• Darkness</li> <li>• Absence</li> <li>• Reflect</li> <li>• Shadow</li> <li>• Opaque</li> </ul>	<ul style="list-style-type: none"> <li>• I know that different types of rock have different properties.</li> <li>• I know that some rocks have grains or crystals.</li> <li>• I know that fossils are sedimentary rocks that contain the remains living things.</li> </ul> <p><b>Vocabulary</b></p> <ul style="list-style-type: none"> <li>• Igneous</li> <li>• Sedimentary</li> <li>• Metamorphic</li> <li>• Compressed</li> <li>• Sediment</li> <li>• Weathered</li> <li>• Eroded</li> <li>• Fossil</li> </ul>
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**Year 4**

<p style="text-align: center;"><b>Working Scientifically</b></p> <ul style="list-style-type: none"> <li>• I know that there are different kinds of scientific enquiry and these will change based on the information I need.</li> <li>• I know that my test needs to provide comparative data.</li> <li>• I know that tables and charts are used to display data in a way that makes it easier to understand.</li> <li>• I know that it is important to consider how a test should be improved to make it more accurate.</li> </ul> <p><b>Vocabulary</b></p> <ul style="list-style-type: none"> <li>• Enquiry</li> <li>• Comparative test</li> <li>• Improve</li> <li>• Accuracy</li> </ul> <p style="text-align: center;"><b>Animals Including Humans</b></p> <ul style="list-style-type: none"> <li>• I know humans process the food they eat in their digestive system.</li> <li>• I know the name and function of the oesophagus, stomach, intestines and bowel.</li> <li>• I know the names and functions of the incisors, canines, premolars and molars.</li> <li>• I know who the producers, predators and prey are in a food chain.</li> </ul> <p><b>Vocabulary</b></p> <ul style="list-style-type: none"> <li>• Digestive system</li> <li>• Oesophagus</li> <li>• Stomach</li> <li>• Intestines</li> <li>• Bowel</li> <li>• Incisor</li> <li>• Canine</li> <li>• Molar</li> </ul>	<p style="text-align: center;"><b>States of Matter</b></p> <ul style="list-style-type: none"> <li>• I know that what a substance is like depends on how the particles move and are arranged.</li> <li>• I know that the particles in a solid are very close together and they vibrate.</li> <li>• I know that the particles in a liquid are quite close together and can move around one another.</li> <li>• I know that the particles in a gas are far apart and move in all directions.</li> <li>• I know that the state of matter of a substance can change if it is heated or cooled. I know that this is a reversible change.</li> <li>• I know that when water is heated, the particles gain more energy and move further apart until they become a gas called steam. This is called evaporation.</li> <li>• I know that when steam cools, it condenses to become water.</li> </ul> <p><b>Vocabulary</b></p> <ul style="list-style-type: none"> <li>• Matter</li> <li>• State</li> <li>• Particle</li> <li>• Solid</li> <li>• Liquid</li> <li>• Gas</li> <li>• Evaporate</li> <li>• Condense</li> <li>• Reversible change</li> </ul> <p style="text-align: center;"><b>Electricity</b></p> <ul style="list-style-type: none"> <li>• I know the names of some common electrical appliances that run on electricity.</li> <li>• I know that an electrical circuit is a complete loop that allows electrical current to run through it.</li> </ul>
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- Premolar

### **Sound**

- I know that a sound must come from a source.
- I know that to make a sound an object must vibrate.
- I know that this causes the air to vibrate, creating sound waves.
- I know that sound waves travel and, when they reach the air, the ear drum vibrates creating the sound we hear.
- I know that the pitch of a sound means whether it is high or low.
- I know that the volume of a sound depends on the strength of the vibrations which produced it.
- I know that sounds get fainter as the distance from the sound source increases.

#### **Vocabulary**

- Source
- Vibrate/vibration
- Sound wave
- Medium
- Ear drum
- Volume
- Pitch

### **Living Things and their Habitats**

- I know that living things can be grouped into vertebrates and invertebrates.
- I know the main characteristics of mammals, fish, birds, reptiles and amphibians.
- I know that a classification key is used to group animals.
- I know that when environments change, this can endanger living things.
- I know that some species have become extinct because of changes to their habitat.

#### **Vocabulary**

- Vertebrate
- Invertebrate
- Environment
- Classification
- Endangered
- Extinct
- Characteristic

- I know what a power cell, wire, bulb, switch and buzzer is in a circuit.
- I know that a switch breaks or reconnects a circuit. When a circuit is broken, the current cannot flow.
- I know that a metal is a good conductor that allows electricity to flow through.
- I know that a material that does not conduct electricity is called an insulator.

#### **Vocabulary**

- Circuit
- Power source
- Battery
- Appliance
- Current
- Switch
- Reconnect
- Conductor
- Insulator

**Working Scientifically**

- I know that variables are the things that I can change in a test.
- I know that events/results can be linked to or caused by other events.
- I know that I need to choose an appropriate chart or diagram to show my results clearly.
- I know how to plan a further test to improve or expand on the data from my first test.

**Vocabulary**

- Variables
- Causal relationship
- Appropriate
- Relevant
- Expand

**Properties and Changed of Materials**

- I know that some materials are permeable.
- I know that thermal conductors allow heat to travel through them easily and thermal insulators do not allow heat to travel through them easily.
- I know that some solids can be dissolved into liquid and are soluble but others cannot and are insoluble.
- I know that a reversible change is where a material has changed state or two materials that have been mixed can be separated again.
- I know that some changes are irreversible.
- I know that magnets, filters and evaporation can be used to separate materials.

**Vocabulary**

- Permeable
- Thermal conductor/insulator
- Electrical conductor/insulator
- Dissolve
- Soluble/insoluble
- Reversible/irreversible change.
- Filter

**Earth and Space**

- I know that the Earth rotates on its axis anti-clockwise and makes a complete rotation over 24 hours (a day) and this causes day and night.
- I know that different parts of the Earth experience daylight at different times.
- I know that the Earth takes 365 and a quarter days to orbit the sun.
- I know that the moon orbits the Earth.
- I know the names of the eight planets of our solar system.
- I know the planets of our Solar System orbit the sun (star) at the centre of our solar system
- I know that the Earth, Sun, Moon and other planets are approximately spherical.

**Living Things and Their Habitats**

- I know that reproduction is when an animal or plant produces one or more individuals similar to itself.
- I know that animals use sexual reproduction, which requires male and female parents.
- I know that some plants use pollination to reproduce. This is when pollen from the anther is transferred to the stigma by bees and other insects.
- I know that pollen travels down the stigma to fertilize the ovule. This creates seeds.
- I know that the life cycles of amphibians and insects may involve metamorphosis, for example a tadpole changes to a frog.
- I know about the work of naturalist, David Attenborough.

**Vocabulary**

- Sexual reproduction
- Similar
- Identical
- Pollination
- Stigma
- Anther
- Ovule
- Fertilize
- Metamorphosis

**Animals, Including Humans**

- I know that the stage when children are babies and toddlers is called infancy and this is a stage of rapid growth.
- I know that puberty is the time when children begin to change into adults.
- I know that puberty affects boys and girls differently and it is caused by hormonal changes.
- I know that after puberty and before adulthood people become adolescents.
- I know that as adults grow older their bodies continue to change.
- I know that in old age, people's strength and fitness declines

**Vocabulary**

- Stage of development/growth
- Infancy
- Adolescent
- Adult
- Independent
- Decline
- Puberty
- Hormone
- Strength
- Fitness

<p><b>Vocabulary</b></p> <ul style="list-style-type: none"> <li>• Rotate</li> <li>• Axis</li> <li>• Orbit</li> <li>• Solar system</li> <li>• Mercury</li> <li>• Venus</li> <li>• Earth</li> <li>• Mars</li> <li>• Jupiter</li> <li>• Saturn</li> <li>• Neptune</li> </ul>	<p><b>Forces</b></p> <ul style="list-style-type: none"> <li>• I know that gravity causes objects to fall towards the earth.</li> <li>• I know that air/water resistance and friction can change how something moves.</li> <li>• I know that mechanisms (gear/pulley lever) can allow a smaller force to have a large effect.</li> </ul> <p><b>Vocabulary</b></p> <ul style="list-style-type: none"> <li>• Gravity</li> <li>• Air resistance</li> <li>• Water resistance</li> <li>• Friction</li> <li>• Gear</li> <li>• Pulley</li> <li>• lever</li> </ul>
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**Year 6**

<p><b>Working Scientifically</b></p> <ul style="list-style-type: none"> <li>• I know that I may need to take repeat readings to get good quality data.</li> <li>• I know how to construct a classification key.</li> <li>• I know that I must question how much I can trust my data.</li> <li>• I know that bad quality data could cause misleading results.</li> <li>• I know that evidence can be used to support or refute arguments.</li> <li>• I know how to control the variables in a test.</li> </ul> <p><b>Vocabulary</b></p> <ul style="list-style-type: none"> <li>• Good/bad quality data</li> <li>• Trust</li> <li>• Misleading</li> <li>• Controlling variables</li> <li>• Repeat readings</li> <li>• Classification</li> </ul> <p><b>Electricity</b></p> <ul style="list-style-type: none"> <li>• I know that the brightness of a lamp/volume of a buzzer is determined by the number and voltage of cells used in the circuit</li> <li>• I know that, if I use more batteries in a circuit, the brightness of a bulb or volume of a buzzer will be affected.</li> <li>• I know that the number of components in relation to the size of the battery will affect the performance of a circuit.</li> <li>• I know how to draw a circuit diagram.</li> <li>• I know the symbols for bulb, battery, buzzer, cell and switch.</li> <li>• I know that longer wires in a circuit causes an increase in resistance and so the circuit does not perform as effectively.</li> </ul> <p><b>Vocabulary</b></p> <ul style="list-style-type: none"> <li>• Cell</li> </ul>	<p><b>Living Things and Their Habitats</b></p> <ul style="list-style-type: none"> <li>• I know the key characteristics of specific vertebrates and invertebrates that interest me.</li> <li>• I know that a classification key considers the key similarities and differences between animals in order to sort them.</li> <li>• I know that animals have specific adaptations which make them suited to their habitat.</li> <li>• I know that species can be groups into different classes.</li> <li>• I know what a micro-organism is.</li> </ul> <p><b>Vocabulary</b></p> <ul style="list-style-type: none"> <li>• Species</li> <li>• Class</li> <li>• Adaptation</li> </ul> <p><b>Animals, Including Humans</b></p> <ul style="list-style-type: none"> <li>• I know that the circulatory system is made of the heart, lungs and the blood vessels.</li> <li>• I know that arteries carry oxygenated blood from the heart to the rest of the body.</li> <li>• I know that veins carry deoxygenated blood from the body to the heart.</li> <li>• I know that some choices, such as smoking and drinking alcohol can be harmful to our health.</li> <li>• I know that exercise improved heart and lung function, increased muscle tone, reduces fat and improves fitness and mental health.</li> <li>• I know how humans reproduce (SRE).</li> </ul> <p><b>Vocabulary</b></p> <ul style="list-style-type: none"> <li>• Circulatory system</li> <li>• Heart</li> <li>• Blood vessels</li> <li>• Artery</li> <li>• Vein</li> <li>• Oxygenated/deoxygenated</li> </ul>
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- Component
- Resistance
- Voltage
- Performance

### **Light**

- I know that that light appears to travel in straight lines.
- I know that reflection happens because the surface changes the direction of the light.
- I know that we see things because, when light hits objects, it reflects into our eyes, either directly or after hitting other objects first.
- I know that light affects the size and shape of a shadow because it travels in straight lines.

### **Vocabulary**

- Reflection
- Angle
- Surface

### **Evolution and Inheritance**

- I know that Evolution is a process where living things change over many generations due to changes in their physical characteristics.
- I know that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.
- I know that animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution because those animals who are best adapted are more likely to survive. This is called natural selection.
- I know that key evidence for evolution comes from studying fossils and comparing similar species.
- I know that human beings are different from other animals because they have conscious thought.
- I know who Charles Darwin and Mary Anning are and their influence on what we know about Evolution.

### **Vocabulary**

- Evolution
- Variance
- Adaptation
- Natural Selection
- Generation
- Characteristics
- Hominid
- Homo sapiens
- Consciousness

- Fitness
- Heart/lung function