

## Key Assessment Criteria: *Being a scientist*



A year 1 scientist			
<p><b>Working scientifically (Y1 and Y2)</b></p> <ul style="list-style-type: none"> <li>I can ask simple scientific questions.</li> <li>I can use simple equipment to make observations.</li> <li>I can carry out simple tests.</li> <li>I can identify and classify things.</li> <li>I can suggest what I have found out.</li> <li>I can use simple data to answer questions</li> </ul>	<p><b>Biology</b></p> <p><u>Plants</u></p> <ul style="list-style-type: none"> <li>I can name a variety of common wild and garden plants.</li> <li>I can name the petals, stem, leaf and root of a plant.</li> <li>I can name the roots, trunk, branches and leaves of a tree.</li> </ul> <p><u>Animals, including humans</u></p> <ul style="list-style-type: none"> <li>I can name a variety of animals including fish, amphibians, reptiles birds and mammals.</li> <li>I can classify and name animals by what they eat (carnivore, herbivore and omnivore).</li> <li>I can sort animals into categories (including fish, amphibians, reptiles, birds and mammals).</li> <li>I can sort living and non-living things.</li> <li>I can name the parts of the human body that I can see.</li> <li>I can link the correct part of the human body to each sense.</li> </ul>	<p><b>Chemistry</b></p> <p><u>Everyday materials</u></p> <ul style="list-style-type: none"> <li>I can distinguish between an object and the material it is made from.</li> <li>I can explain the materials that an object is made from.</li> <li>I can name wood, plastic, glass, metal, water and rock.</li> <li>I can describe the properties of everyday materials.</li> <li>I can group objects based on the materials they are made from.</li> </ul>	<p><b>Physics</b></p> <p><u>Seasonal changes</u></p> <ul style="list-style-type: none"> <li>I can observe and comment on changes in the seasons.</li> <li>I can name the seasons and suggest the type of weather in each season.</li> </ul>



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A year 2 scientist			
<p><b>Working scientifically (Y1 and Y2)</b></p> <ul style="list-style-type: none"> <li>I can ask simple scientific questions.</li> <li>I can use simple equipment to make observations.</li> <li>I can carry out simple tests.</li> <li>I can identify and classify things.</li> <li>I can suggest what I have found out.</li> <li>I can use simple data to answer questions</li> </ul>	<p><b>Biology</b></p> <p><u>Living things and their habitats</u></p> <ul style="list-style-type: none"> <li>I can identify things that are living, dead and never lived.</li> <li>I can describe how a specific habitat provides for the basic needs of things living there (plants and animals).</li> <li>I can identify and name plants and animals in a range of habitats.</li> <li>I can match living things to their habitat.</li> <li>I can describe how animals find their food.</li> <li>I can name some different sources of food for animals.</li> <li>I can explain a simple food chain.</li> </ul> <p><u>Plants</u></p> <ul style="list-style-type: none"> <li>I can describe how seeds and bulbs grow into plants.</li> <li>I can describe what plants need in order to grow and stay healthy (water, light &amp; suitable temperature).</li> </ul> <p><u>Animals, including humans</u></p> <ul style="list-style-type: none"> <li>I can explain the basic stages in a life cycle for animals, including humans.</li> <li>I can describe what animals and humans need to survive.</li> <li>I can describe why exercise, a balanced diet and good hygiene are important for humans.</li> </ul>	<p><b>Chemistry</b></p> <p><u>Uses of everyday materials</u></p> <ul style="list-style-type: none"> <li>I can identify and name a range of materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard.</li> <li>I can suggest why a material might or might not be used for a specific job.</li> <li>I can explore how shapes can be changed by squashing, bending, twisting and stretching.</li> </ul>	<p><b>Physics</b></p> <p>No content</p>

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A year 3 scientist			
<p><b>Working scientifically (Y3 and Y4)</b></p> <ul style="list-style-type: none"> <li>I can ask relevant scientific questions.</li> <li>I can use observations and knowledge to answer scientific questions.</li> <li>I can set up a simple enquiry to explore a scientific question.</li> <li>I can set up a test to compare two things.</li> <li>I can set up a fair test and explain why it is fair.</li> <li>I can make careful and accurate observations, including the use of standard units.</li> <li>I can use equipment, including thermometers and data loggers to make measurements.</li> <li>I can gather, record, classify and present data in different ways to answer scientific questions.</li> <li>I can use diagrams, keys, bar charts and tables; using scientific language.</li> <li>I can use findings to report in different ways, including oral and written explanations, presentation.</li> <li>I can draw conclusions and suggest improvements.</li> <li>I can make a prediction with a reason.</li> <li>I can identify differences, similarities and changes related to an enquiry.</li> </ul>	<p><b>Biology</b></p> <p><u>Plants</u></p> <ul style="list-style-type: none"> <li>I can describe the function of different parts of flowering plants and trees.</li> <li>I can explore and describe the needs of different plants for survival.</li> <li>I can explore and describe how water is transported within plants.</li> <li>I can describe the plant life cycle, especially the importance of flowers.</li> </ul> <p><u>Animals, including humans</u></p> <ul style="list-style-type: none"> <li>I can explain the importance of a nutritious, balanced diet.</li> <li>I can explain how nutrients, water and oxygen are transported within animals and humans.</li> <li>I can describe and explain the skeletal system of a human.</li> <li>I can describe and explain the muscular system of a human.</li> <li>I can describe the purpose of the skeleton in humans and animals.</li> </ul>	<p><b>Chemistry</b></p> <p><u>Rocks</u></p> <ul style="list-style-type: none"> <li>I can compare and group rocks based on their appearance and physical properties, giving a reason.</li> <li>I can describe how fossils are formed.</li> <li>I can describe how soil is made.</li> <li>I can describe and explain the difference between sedimentary and igneous rock.</li> </ul>	<p><b>Physics</b></p> <p><u>Light</u></p> <ul style="list-style-type: none"> <li>I can describe what dark is (the absence of light).</li> <li>I can explain that light is needed in order to see.</li> <li>I can explain that light is reflected from a surface.</li> <li>I can explain and demonstrate how a shadow is formed.</li> <li>I can explore shadow size and explain.</li> <li>I can explain the danger of direct sunlight and describe how to keep protected.</li> </ul> <p><u>Forces and magnets</u></p> <ul style="list-style-type: none"> <li>I can explore and describe how objects move on different surfaces.</li> <li>I can explain how some forces require contact and some do not, giving examples.</li> <li>I can explore and explain how objects attract and repel in relation to objects and other magnets.</li> <li>I can predict whether objects will be magnetic and carry out an enquiry to test this out.</li> <li>I can describe how magnets work.</li> <li>I can predict whether magnets will attract or repel and give a reason.</li> </ul>

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A year 4 scientist			
<p><b>Working scientifically (Y3 and Y4)</b></p> <ul style="list-style-type: none"> <li>I can ask relevant scientific questions.</li> <li>I can use observations and knowledge to answer scientific questions.</li> <li>I can set up a simple enquiry to explore a scientific question.</li> <li>I can set up a test to compare two things.</li> <li>I can set up a fair test and explain why it is fair.</li> <li>I can make careful and accurate observations, including the use of standard units.</li> <li>I can use equipment, including thermometers and data loggers to make measurements.</li> <li>I can gather, record, classify and present data in different ways to answer scientific questions.</li> <li>I can use diagrams, keys, bar charts and tables; using scientific language.</li> <li>I can use findings to report in different ways, including oral and written explanations, presentation.</li> <li>I can draw conclusions and suggest improvements.</li> <li>I can make a prediction with a reason.</li> <li>I can identify differences, similarities and changes related to an enquiry.</li> </ul>	<p><b>Biology</b></p> <p><u>Living things and their habitats</u></p> <ul style="list-style-type: none"> <li>I can group living things in different ways.</li> <li>I can use classification keys to group, identify and name living things.</li> <li>I can create classification keys to group, identify and name living things (for others to use).</li> <li>I can describe how changes to an environment could endanger living things.</li> </ul> <p><u>Animals, including humans</u></p> <ul style="list-style-type: none"> <li>I can identify and name the parts of the human digestive system.</li> <li>I can describe the functions of the organs in the human digestive system.</li> <li>I can identify and describe the different types of teeth in humans.</li> <li>I can describe the functions of different human teeth.</li> <li>I can use food chains to identify producers, predators and prey.</li> <li>I can construct food chains to identify producers, predators and prey.</li> </ul>	<p><b>Chemistry</b></p> <p><u>States of matter</u></p> <ul style="list-style-type: none"> <li>I can group materials based on their state of matter (solid, liquid, gas).</li> <li>I can describe how some materials can change state.</li> <li>I can explore how materials change state.</li> <li>I can measure the temperature at which materials change state.</li> <li>I can describe the water cycle.</li> <li>I can explain the part played by evaporation and condensation in the water cycle.</li> </ul>	<p><b>Physics</b></p> <p><u>Sound</u></p> <ul style="list-style-type: none"> <li>I can describe how sound is made.</li> <li>I can explain how sound travels from a source to our ears.</li> <li>I can explain the place of vibration in hearing.</li> <li>I can explore the correlation between pitch and the object producing a sound.</li> <li>I can explore the correlation between the volume of a sound and the strength of the vibrations that produced it.</li> <li>I can describe what happens to a sound as it travels away from its source.</li> </ul> <p><u>Electricity</u></p> <ul style="list-style-type: none"> <li>I can identify and name appliances that require electricity to function.</li> <li>I can construct a series circuit.</li> <li>I can identify and name the components in a series circuit (including cells, wires, bulbs, switches and buzzers).</li> <li>I can draw a circuit diagram.</li> <li>I can predict and test whether a lamp will light within a circuit.</li> <li>I can describe the function of a switch in a circuit.</li> <li>I can describe the difference between a conductor and insulators; giving examples of each.</li> </ul>

## Key Assessment Criteria: *Being a scientist*



### A year 5 scientist

Working scientifically (Y5 and Y6)	Biology	Chemistry	Physics
<ul style="list-style-type: none"> <li>I can plan different types of scientific enquiry.</li> <li>I can control variables in an enquiry.</li> <li>I can measure accurate and precisely using a range of equipment.</li> <li>I can record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</li> <li>I can use the outcome of test results to make predictions and set up a further comparative fair test.</li> <li>I can report findings from enquiries in a range of ways.</li> <li>I can explain a conclusion from an enquiry.</li> <li>I can explain causal relationships in an enquiry.</li> <li>I can relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory.</li> <li>Read, spell and pronounce scientific vocabulary accurately.</li> </ul>	<p><u>Living things and their habitats</u></p> <ul style="list-style-type: none"> <li>I can describe the life cycle of different living things, e.g. mammal, amphibian, insect bird.</li> <li>I can describe the differences between different life cycles.</li> <li>I can describe the process of reproduction in plants.</li> <li>I can describe the process of reproduction in animals.</li> </ul> <p><u>Animals, including humans</u></p> <ul style="list-style-type: none"> <li>I can create a timeline to indicate stages of growth in humans.</li> </ul>	<p><u>Properties and changes of materials</u></p> <ul style="list-style-type: none"> <li>I can compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity, [electrical &amp; thermal], and response to magnets).</li> <li>I can describe how a material dissolves to form a solution; explaining the process of dissolving.</li> <li>I can describe and show how to recover a substance from a solution.</li> <li>I can describe how some materials can be separated.</li> <li>I can demonstrate how materials can be separated (e.g. through filtering, sieving and evaporating).</li> <li>I know and can demonstrate that some changes are reversible and some are not.</li> <li>I can explain how some changes result in the formation of a new material and that this is usually irreversible.</li> <li>I can discuss reversible and irreversible changes.</li> <li>I can give evidenced reasons why materials should be used for specific purposes.</li> </ul>	<p><u>Earth and space</u></p> <ul style="list-style-type: none"> <li>I can describe and explain the movement of the Earth and other planets relative to the Sun.</li> <li>I can describe and explain the movement of the Moon relative to the Earth.</li> <li>I can explain and demonstrate how night and day are created.</li> <li>I can describe the Sun, Earth and Moon (using the term spherical).</li> </ul> <p><u>Forces</u></p> <ul style="list-style-type: none"> <li>I can explain what gravity is and its impact on our lives.</li> <li>I can identify and explain the effect of air resistance.</li> <li>I can identify and explain the effect of water resistance.</li> <li>I can identify and explain the effect of friction.</li> <li>I can explain how levers, pulleys and gears allow a smaller force to have a greater effect.</li> </ul>



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A year 6 scientist			
<p><b>Working scientifically (Y5 and Y6)</b></p> <ul style="list-style-type: none"> <li>I can plan different types of scientific enquiry.</li> <li>I can control variables in an enquiry.</li> <li>I can measure accurate and precisely using a range of equipment.</li> <li>I can record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</li> <li>I can use the outcome of test results to make predictions and set up a further comparative fair test.</li> <li>I can report findings from enquiries in a range of ways.</li> <li>I can explain a conclusion from an enquiry.</li> <li>I can explain causal relationships in an enquiry.</li> <li>I can relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory.</li> <li>Read, spell and pronounce scientific vocabulary accurately.</li> </ul>	<p><b>Biology</b></p> <p><u>Living things and their habitats</u></p> <ul style="list-style-type: none"> <li>I can classify living things into broad groups according to observable characteristics and based on similarities &amp; differences.</li> <li>I can describe how living things have been classified.</li> <li>I can give reasons for classifying plants and animals in a specific way.</li> </ul> <p><u>Animals, including humans</u></p> <ul style="list-style-type: none"> <li>I can identify and name the main parts of the human circulatory system.</li> <li>I can describe the function of the heart, blood vessels and blood.</li> <li>I can discuss the impact of diet, exercise, drugs and life style on health.</li> <li>I can describe the ways in which nutrients and water are transported in animals, including humans.</li> </ul> <p><u>Evolution and inheritance</u></p> <ul style="list-style-type: none"> <li>I can describe how the earth and living things have changed over time.</li> <li>I can explain how fossils can be used to find out about the past.</li> <li>I can explain about reproduction and offspring (recognising that offspring normally vary and are not identical to their parents).</li> <li>I can explain how animals and plants are adapted to suit their environment.</li> <li>I can link adaptation over time to evolution.</li> <li>I can explain evolution.</li> </ul>	<p><b>Chemistry</b></p> <p>No content</p>	<p><b>Physics</b></p> <p><u>Light</u></p> <ul style="list-style-type: none"> <li>I can explain how light travels.</li> <li>I can explain and demonstrate how we see objects.</li> <li>I can explain why shadows have the same shape as the object that casts them.</li> <li>I can explain how simple optical instruments work, e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.</li> </ul> <p><u>Electricity</u></p> <ul style="list-style-type: none"> <li>I can explain how the number &amp; voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer.</li> <li>I can compare and give reasons for why components work and do not work in a circuit.</li> <li>I can draw circuit diagrams using correct symbols.</li> </ul>