

Burbage Junior School Science Progression Ladder



| Burbage Junior School – Science Progression - The intent of Science with BJS is to foster an enquiring mind regarding scientific concepts, build on natural curiosity, and be aware of how science develops the world we live in. | | | | |
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| | Year 3 | Year 4 | Year 5 | Year 6 |
| Knowledge | <p>Plants</p> <ul style="list-style-type: none"> • Can identify and describe the functions of flowering plants. • Can explore the requirements for life and growth. • Can investigate the way water is transported to the plant. • Can explore the life cycle of flowering plants incl. pollination, seed formation and dispersal. | <p>Living Things</p> <ul style="list-style-type: none"> • explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment | <p>Living Things</p> <ul style="list-style-type: none"> • Can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. • Can describe the life process of reproduction in some plants and animals. | <p>Living Things</p> <ul style="list-style-type: none"> • Can describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals. • Can give reasons for classifying plants and animals based on specific characteristics. |
| Knowledge | <p>Animals including humans</p> <ul style="list-style-type: none"> • 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. • Can identify that humans and some other animals have skeletons and muscles for support, protection and movement | <p>Animals including humans</p> <ul style="list-style-type: none"> • Can describe the simple functions of the basic parts of the digestive system in humans. • Can identify the different types of teeth in humans and their simple functions. • Can construct and interpret a variety of food chains, identifying producers, predators and prey. | <p>Animals including humans</p> <ul style="list-style-type: none"> • Can describe the changes as humans develop to old age. | <p>Animals including humans</p> <ul style="list-style-type: none"> • Can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. • Can recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. • Can describe the ways in which nutrients and water are transported within animals, including humans. |

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| <p>Knowledge</p> | <p>Forces</p> <ul style="list-style-type: none"> • Can notice that some forces need contact between two objects, but magnetic forces can act at a distance. • Can observe how magnets attract or repel each other and attract some materials and not others describe magnets as having two poles. • Can predict whether two magnets will attract or repel each other, depending on which poles are facing. • 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. | <p>States of matter</p> <ul style="list-style-type: none"> • Can compare and group materials together, according to whether they are solids, liquids or gases. • Can identify which materials are conductors and which are insulators. • Can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. | <p>Earth and Space</p> <ul style="list-style-type: none"> • Can describe the movement of the Earth, and other planets, relative to the Sun in the solar system. • Can describe the movement of the Moon relative to the Earth. • Can describe the Sun, Earth and Moon as approximately spherical bodies. • Can use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. | <p>Evolution and inheritance</p> <ul style="list-style-type: none"> • 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. • Can recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. • Can identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. |
| <p>Knowledge</p> | <p>Light</p> <ul style="list-style-type: none"> • Can recognise that they need light in order to see things and that dark is the absence of light. • Can notice that light is reflected from surfaces. • Can recognise that light from the sun can be dangerous and that there are ways to protect their eyes. • Can recognise that shadows are formed when the light from a light source is blocked by a solid object. • Can find patterns in the way that the size of shadows change. | <p>Electricity</p> <ul style="list-style-type: none"> • Can identify common appliances that run on electricity. • Can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. • 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. • Can recognise that a switch opens and closes a circuit and associate this with whether or | <p>Properties and changes of materials</p> <ul style="list-style-type: none"> • Can compare and group together everyday materials on the basis of their properties. • Can name some materials that will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. • Can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. • Can give reasons, based on | <p>Electricity</p> <ul style="list-style-type: none"> • Can associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. • 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. • Can use recognised symbols when representing a simple circuit in a diagram. |

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| | | <p>not a lamp lights in a simple series circuit.</p> <ul style="list-style-type: none"> • Can recognise some common conductors and insulators, and associate metals with being good conductors. | <p>evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <ul style="list-style-type: none"> • Can demonstrate that dissolving, mixing and changes of state are reversible changes. | |
| Knowledge | | <p>Sound</p> <ul style="list-style-type: none"> • Can identify how sounds are made, associating some of them with something vibrating. • Can recognise that vibrations from sounds travel through a medium to the ear. • Can find patterns between the pitch of a sound and features of the object that produced it. • Can find patterns between the volume of a sound and the strength of the vibrations that produced it. • Can recognise that sounds get fainter as the distance from the sound source increases. | <p>Forces</p> <ul style="list-style-type: none"> • Can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • Can identify the effects of air resistance, water resistance and friction, that act between moving surfaces. Can recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect | |
| Knowledge | <p>Rocks</p> <ul style="list-style-type: none"> • Can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. • Can describe in simple terms how fossils are formed when things that have lived are trapped within rock. • Can recognise that soils are made from rocks and organic matter. | | | |