**Curriculum Intent – KS3 SCIENCE**

STATEMENT

**Curriculum Implementation**

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|   | **Autumn** | **Spring** | **Summer** |
| HT1 | HT2 | HT3 | HT4 | HT5 | HT6 |
| **Year 7** | **BROAD** | Core content, knowledge and skills | Working Scientifically (introductory unit)C1.4 Acids and alkalisP1.4 Space | B1.1 CellsC1.1 Particles and their behaviourP1.1 Forces | B1.2 Structure and function of body systemsC1.2 Elements, atoms and compoundsP1.2 Sound | B1.3 ReproductionC1.3 ReactionsP1.3 Light | B1.3 ReproductionC1.3 ReactionsP1.3 LightEnd of Year Exam preparation |  Revision/ExamsB2.1 Health and LifestyleColour project |
| Ways the Year 7 curriculum goes beyond the national curriculum, including extra-curricular opportunities  | Science club option for all students in year 7: runs all year. Attendance includes a visit, usually to the Observatory Science Centre at Herstmoncuex.All students have the opportunity to attend the summer term to take part in an animal handling workshop, usual provider Zoolab. |
| **COHERENT** | Prior knowledge required to access this unit |  **C1.4**: KS2 Properties and changes of materialsexplain 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**P1.4**: KS2 Earth and Space describe the movement of the Earth, and other planets, relative to the Sun in the solar system § describe the movement of the Moon relative to the Earth § describe the Sun, Earth and Moon as approximately spherical bodies § use the idea of the Earth’s rotation to explain day and night and the apparent movement of the sun across the sky. |  **B1.1** no prior knowledge from KS3**C1.1:** KS2compare and group materials together, according to whether they are solids, liquids or gases § 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) § identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature**P1.1:** KS2 Forces explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object § identify the effects of air resistance, water resistance and friction, that act between moving surfaces § recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. | **B1.2**: KS1 describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) § identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each senseidentify that humans and some other animals have skeletons and muscles for support, protection and movement.**C1.2:** KS1 describe the simple physical properties of a variety of everyday materials § compare and group together a variety of everyday materials on the basis of their simple physical properties. **P1.2**: KS2 § identify how sounds are made, associating some of them with something vibrating § recognise that vibrations from sounds travel through a medium to the ear § find patterns between the pitch of a sound and features of the object that produced it § find patterns between the volume of a sound and the strength of the vibrations that produced it § recognise that sounds get fainter as the distance from the sound source increases. |  **B1.3**: KS1 notice that animals, including humans, have offspring which grow into adult KS2describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird § describe the life process of reproduction in some plants and animals and describe the changes as humans develop to old age. explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.**C1.3:** KS2 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.**P1.3**: KS1 recognise that they need light in order to see things and that dark is the absence of light § notice that light is reflected from surfaces § recognise that light from the sun can be dangerous and that there are ways to protect their eyes § recognise that shadows are formed when the light from a light source is blocked by an opaque object § find patterns in the way that the size of shadows change. KS2: recognise that light appears to travel in straight lines § 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 § 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 § use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. |   |  **B2.1:** KS1 find out about and describe the basic needs of animals, including humans, for survival (water, food and air) § describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene; 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; describe the simple functions of the basic parts of the digestive system in humans. KS2 recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. |
| **EMPOWERING** | Key vocabulary | Students will receive a booklet of vocabulary for all year 7 topics from one of their teachers.In addition, Kerboodle has Knowledge mats for each topic, with vocabulary, which will be signposted to students.  |
| Relevance to real world and careers | Provided often by staff experience: inclusion of information on jobs linked to Science and also the way the curriculum links to personal health and the world around us.  |
| **CHALLENGING** | Super curricular recommendations | Visits to local sites: Horniman museum, Downe House, High Elms, Science Museum |

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| **Year 8** | **BROAD** | Core content, knowledge and skills | B2.3: Adaptation and inheritanceC2.1: The periodic tableP2.1: Electricity and magnetism | B2.2: Ecosystem processes C2.1: The periodic tableP2.1: Electricity and magnetismB2.3: Adaptation and inheritanceC2.2: Separation techniquesP2.2: Energy | B2.2: Ecosystem processes C2.2: Separation techniquesP2.2: Energy | C2.3: Metals and acidsP2.3: Motion and pressure | C2.4: The EarthConsolidation |  KS3 revision |
| **COHERENT** | Prior knowledge required to access this unit |  **B2.3**: KS2 recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago § recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents § identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution**C2.1**: KS1 distinguish between an object and the material from which it is made § identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock § describe the simple physical properties of a variety of everyday materials § compare and group together a variety of everyday materials on the basis of their simple physical properties.**P2.1**: KS2 notice that some forces need contact between two objects, but magnetic forces can act at a distance § observe how magnets attract or repel each other and attract some materials and not others § 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 § describe magnets as having two poles § predict whether two magnets will attract or repel each other, depending on which poles are facing. identify common appliances that run on electricity § construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers § 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 § recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit § recognise some common conductors and insulators, and associate metals with being good conductors. associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit § 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 § use recognised symbols when representing a simple circuit in a diagram. |  **B2.2** KS1 explore and compare the differences between things that are living, dead, and things that have never been alive § 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 § identify and name a variety of plants and animals in their habitats, including microhabitats 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. observe and describe how seeds and bulbs grow into mature plants § find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. KS2: explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. construct and interpret a variety of food chains, identifying producers, predators and prey. **C2.2:**KS2know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution § use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.**P2.2:** No prior knowledge from KS1 or 2. |   | **C2.3:** KS1distinguish between an object and the material from which it is made § identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. KS2 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.**P2.3:** No prior knowledge from KS1 or 2. |  C2.4: KS1 identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock; KS2 compare and group together different kinds of rocks on the basis of their appearance and simple physical properties § describe in simple terms how fossils are formed when things that have lived are trapped within rock § recognise that soils are made from rocks and organic matter. |   |
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