EASTRY C OF E PRIMARY SCHOOL KNOWLEDGE ORGANISERS

YEAR GROUP	5
SUBJECT	Science
KEY VOCABULARY	**Human body:** Gestation, Fetus, Fertilisation, Species, Adolescent, Puberty, Hormones, Pituitary gland, Testosterone, Estrogen, **Life cycles:** Amphibians, reptiles, birds, mammals, insects, fish, egg, larva, pupa, nymph, adult, metamorphosis, petal, stamen (anther + filament), carpel (stigma + style + ovary + ovule), pollination, fertilisation, germination. **Forces:** Gravity, friction, air resistance, upthrust, weight, Newton meter, Newtons (N), Particles, Surface area, Push, pull, Balance, Mass – grams and kilograms, Mechanical devices – gears, levers, pulleys, springs. **Space:** Earth, axis, rotate **Solar system** – Star = Sun, Planets = Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune (Pluto was classified as Dwarf planet in 2006) **Phases of the Moon** - full moon, gibbous moon, half moon, crescent moon, new moon, waxing ,waning. Moon's orbit: 29.5 days, lunar month, Orbit, planets, revolve, sphere.

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END POINTS KNOWLEDGE	**Forces:** I know that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object I can use my knowledge to explain 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. **Space:** I know how the Earth, and other planets, relative to the Sun in the solar system I know 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.
Investigative skills end point	I know how to plan different enquiries. I know what the variables are and I can recognise and control variables where necessary. I know when secondary sources will be most useful to research my ideas and begin to separate opinion from fact. I know which equipment. Children should take measurements, using a range of scientific equipment with increasing accuracy and precision. I know what data needs collecting, I can make my own decisions about what observations to make, what measurements to use, and how long to make them for.

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	I know which method of recording is the most appropriate to use when recording data (diagrams and labels, classification keys, tables and bar and line graphs). I know how to report and present my findings from enquiries, including conclusions, casual relationships and explanations of results (written/oral). I know how to analysis data; testing results to make predictions to set up further comparative and fair test. I know how to use my results to identify when further tests and observations might be needed. I know the changes as humans develop from birth to old age. I know the life cycles of a mammal, an amphibian, an insect and a bird. I know the life process of reproduction in some plants and animals. I know how to group together everyday materials on and compare them 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. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating Have the knowledge to demonstrate that dissolving, mixing and changes of state are reversible changes Have the knowledge to 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.

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IT HELPS IF I ALREADY KNOW	**Earth and Space** (Fledglings) I know what a force is and can talk about the effect of them. (Space with Beegu) **<u>Forces and Magnets (year 3)</u>** I know how to compare how things move on different surfaces I know that some forces need contact between two objects, but magnetic forces can act at a distance I know how to observe magnets attract or repel each other and attract some materials and not others 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 I know how to describe magnets as having two poles I know how to predict whether two magnets will attract or repel each other, depending on which poles are facing. <u>Materials</u> • 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. <u>Living things and their habitat</u> • 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 <u>Animals including humans</u> • 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

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	• I can construct and interpret a variety of food chains, identifying producers, predators and prey.
Investigative skills I already know	<u>Asking questions</u> • **Raising Questions:** I know how to raise questions about the world around me based on scientific experiences • **Choosing a suitable scientific enquiry**. I can begin to make my own decisions about the most appropriate type of scientific enquiry I may use to answer questions <u>Monitoring and recording</u> • **Observation**s. I can help to make decisions about what systematic and careful observations to make and how long to make them for. • **Fair testing**. I know when a simple fair test is necessary. • **Sorting and classifying**. I can talk about the criteria for grouping, sorting and classifying and use simple keys. • **Secondary sources**. I can recognise when and how secondary sources might help me to answer questions that cannot be answered through practical investigations. • **Choosing equipment.** I can make decisions about the type of simple equipment that might be used and how it should be used appropriately. (data loggers and thermometers). • **Collecting data.** I can collect data from my own observations and measurements. • **Measuring**. I can use standard units. • **Recording**. I can make decisions as to how to record. I can record in notes, drawings, labelled diagrams, bar charts and simple tables Using relevant scientific language to discuss my ideas and communicate my findings in ways that are appropriate for different audiences. <u>Concluding</u> **Analysing data**. I should make decisions how to analyse data. I can look for patterns and decide what data to collect to identify them. With help, I can look for changes, patterns, similarities and differences in my data in order and draw simple conclusions and answer questions. With help, I can identify new questions arising from the data, making predictions for new values within or beyond the data I have collected. <u>Evaluating</u> • **Making improvements**. I can find ways of improving what they have already done.