Science Medium Term Plan – Key stage 2

Class 3 Year A (Year 5 and 6)

Term and Cornerstone's topic	Term 1 Frozen Kingdoms	Term 2 Frozen Kingdoms	Term 3 A Child's War	Term 4 Alchemy Island	Term 5 Ancient Egypt	Term 6 Ancient Egypt
Title and Year of NC Science programme of study Links	Forces (Year 5)		Properties and Changes of Materials (Year 5)		Earth and Space (Year 5)	Animals, including humans (Year 5)
	Force, Magnet, pole, North pole, South pole, Repel, Attract, Magnetic, Magnetic field, Friction, Push, Pull, Gravity, Newton meter, Weight, Mass Friction, Resistance, Water resistance, Upthrust Fair test, Independent variable, scientific, question, investigation, experiment, prediction, method, accurate, results, conclusion, Air resistance, Fulcrum, Lever, Machine, Pulley, Efficient, Gear, Gears		Term 3 Material, Hard/soft, Waterproof/absorbent, Smooth/rough, Rigid/flexible, Magnetic/non-magnetic, Transparent/opaque/translucent, Venn diagram, Compare, Similar, Similarity, Different, Difference, Conduct, Conductor, Insulate, Insulator, Thermal, Thermal insulator, Thermal conductor Electrical insulator, Electrical conductor, Scatter graph Term 4 Vocab to describe physical properties: hardness, solubility, transparency, conductivity (electrical and thermal) and magnetism. Vocab to describe processes: heating, cooling, melting, freezing, dissolving, solid, liquid, burning, change, reversible, irreversible, soluble, insoluble, solution, solute and solvent		Phases of the moon: new, first quarter, last quarter, waxing crescent, waning crescent, waxing gibbous, and waning gibbous solar system, mass, gravity, moon, planet, sun, star, orbit	Gestation, Pregnant Pregnancy , Foetus , Baby , Young Infant, Toddler, Child , Teenager, Line graph, Average, Data, Adulthood, Elderly, infant, juvenile, adolescent, adult, birth, growth, Puberty, reproduction.
Working scientifically Focus	Sc6/1.1 planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Year 5 secure LKS2 fair test + introduce independent variable; Y6 secure independent variable + identify dependent variables. Sc6/1.2 taking measurements, using a range of scientific equipment, with increasing accuracy and precision thermometers; weighing scales; newton meters; stop watches Sc6/1.3 recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs diagrams and labels; tables; Venn diagrams		Sc6/1.1 planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Year 5 increasingly confident with the aspects of scientific enquiry; Year 6 work towards planning own investigation/s Sc6/1.3 recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs Tables; scatter graph Sc6/1.4 using test results to make predictions to set up further comparative and fair tests Year 5 guided; Year 6 aim to achieve Sc6/1.6 reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of		Sc6/1.2 taking measurements, using a range of scientific equipment, with increasing accuracy and precision tape measure Sc6/1.3 recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs concept scaled diagrams	Sc6/1.3 recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs line graph; classification keys Sc6/1.6 reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of

	Sc6/1.4 using test results to make predictions to set up further comparative and fair tests predictions; concept of why we test 3 times in LKS2 (checking accuracy) Sc6/1.6 reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations guided oral and written Sc6/1.7 identifying scientific evidence that has been used to support or refute ideas or arguments. Sir Isaac Newton – gravity + legend of how came up with the idea + that it built upon previous findings + other scientists have built upon his (not details)	results, in oral and written forms such as displays and other presentations Focus oral and written, increasingly independently (especially Year 6) -	Sc6/1.4 using test results to make predictions to set up further comparative and fair tests Sc6/1.5 using simple models to describe scientific ideas Sc6/1.6 reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations explanations / displays / presentations to the alchemists / villagers Sc6/1.7 identifying scientific evidence that has been used to support or refute ideas or arguments. NC UKS2 science intro - Using secondary sources to do so + begin to recognise that scientific ideas change and develop over time	results, in oral and written forms such as displays and other presentations pictorial + explanation of changes and similarities (timeline)

Week 1	Science investigation. (Might be swapped with Week 2 lesson, depending on number of lessons in Week 1 and when conduct WOW week). STEM project— Planning an expedition to the Arctic. Will one thick layer or lots of thin layers keep us warmer? Part of planning which clothing to take. Guided experiment planning. Children discuss predictions etc. as groups, then CT types up answers to print and stick in . book Predictions are encourages to have an explanation based on the chns. experiences (e.g. a thick layer because my coat keeps me warm and it is one thick layer). Groups have 2 beakers, both with water from a kettle (adult), same temp. Each beaker has a thermometer. 1 beaker has 1 thicker layer round it (thick cleaning cloth	Experiment / experience lesson (parachutes). LQ: How do we use experiments in response to questions? We reach the secret military airbase. They fly us as close as possible and we need to parachute out. They have a few types of parachute. Which will be best? Children to make parachutes of different types. Ask groups to ask the questions – what will happen if we… Allow chn. to explore using different independent variables – adult guidance into then creating a fair test around chosen independent variable. Guided using results to think about why that might have happened – conclusion. Link to water resistance + friction + gravity	Describe similarities and differences. Recycling was an important part of life on the Home Front. Objects of a material would be re-used for something else. Have a range of objects made of different materials. Have differences within the materials too. Discuss material v. object. Sort objects by material (metal / paper / fabric / plastic / wood) Discuss specific material where possible within children's current knowledge – e.g. type of fabric. Compare two/three materials with a Venn diagram. Hard/soft; waterproof/absorbent; smooth/rough; rigid/flexible; magnetic/non-magnetic; transparent/opaque/translucent LA: choose two objects made of different materials. Complete a two-circle, colour-coded Venn diagram. MA: choose two objects with different types of same broad category of material (e.g. different fabrics / plastics). Complete a two-circle Venn diagram. HA: choose three objects with different types of same broad category of material (e.g. different	Describe samples from Alchemy Island (recap last term). Examine samples sent by the Island's Chief Alchemist to help young adventurers become familiar with the island's terrain. Use their scientific investigation skills to work out the properties of each sample. Group samples by characteristics, such as state, transparency, hardness, electrical conductivity, thermal conductivity and magnetism. Record the groupings on a prepared spreadsheet and explain their decisions. Use the map to point out where on Alchemy Island the samples may have come from. K: Materials can be grouped according to their basic physical properties. Properties include hardness, solubility, transparency, conductivity (electrical and thermal) and magnetism.	Order of the planets; size and scale Work in groups to explore the size and scale of the Solar System, including the Sun. Using a range of spherical items of different scales, research the size of each planet and then work out which item might best represent it. Compare their decisions with all other groups, giving reasons for their answers. Taking the items outside, measure out and place the planets at the correct distance from the Sun, following numerical data in a table supplied. K: The Sun, Earth, Moon and the planets in our solar system are roughly spherical. All planets are spherical because their mass is so large that they have their own force of gravity. This force of gravity pulls all of a	Foetus Development Recap Year 2 by sorting pictures into order as age (simple: baby, child, teen/young adult, old age). How does each type of animal have young? Mammal, reptile, bird, amphibian, fish, invertebrates How long do you think each of these mammals are pregnant for? What is the gestation period? Discuss answers and then patterns (bigger = longer gestation period). Then, link to humans. Gestation period of 9 months, called pregnancy. K: Humans are mammals and have a mammalian life cycle.

	strip). 1 beaker has lots of thin layers (thin cleaning cloth strips). Both the same thickness overall. Chn. read start temperature with a thermometer. They then read the temperature after 10 minutes. We record the results together. We discuss/conclude together whether we will need to pack lots of thinner layers or 1 really thick layer.	knowledge gained so far. K: A force is a push or a pull that makes something move, change its speed or change its shape. There are two types of forces: contact forces and non-contact forces. Contact forces include friction, air resistance and water resistance. Non-contact forces include magnetism and gravitational force, or gravity. K Air resistance is a type of friction. It is a contact force that acts when an object moves through air. It always acts against the direction of movement.	fabrics / plastics). Complete a three-circle Venn diagram. Sort natural and man-made. If time: looking at the objects they have focussed on, why was that material chosen to make that object from? Is there something else made from that material that it could be re-used as / melted down and reformed as? K: Different materials have different properties. Materials' properties makes them suitable for specific purposes.	Separating the gold/gems from the well samples. Investigate contaminated water samples taken from the Bottomless Well near the Ancient Citadel (they are not fit for human consumption and need cleaning). Scrutinise each sample and predict what might be contaminating the water. Discuss how mixtures can be decontaminated through filtration, sieving or evaporation, then work scientifically to clean each sample. Draw and display diagrams with captions and notes to show how they set up their equipment. Take photographs before, during and after the cleaning process to show changes. Assess how successful their attempts at cleaning were. If the investigation went well, the citizens of the Ancient Citadel will offer Set one coordinates provided as a reward for sharing their knowledge. K: Some mixtures can be separated by filtering, sieving and evaporating.	planet's material towards its centre, which compresses it into the most compact shape – a sphere.	

				Sieving can be used to separate large solids from liquids and some solids from other solids. Filtering can be used to separate small solids from liquids. Evaporating can be used to separate dissolved solids from liquids. Filters separate solid particles from liquids or gases. Filters can be made from thin materials that contain tiny holes or layers of solid materials.		
Week 2	Recap Year 3 level Forces (and magnets). Work through the assessment. 1. Compass 2. Allow the chn. to use magnets to see which materials are magnetic. 3. Allow chn. to use the magnets to see if like/opposite poles attract/repel. 4. Discuss what forces can do. What is a force? 5. What is friction? A car needs friction to drive. On what surfaces might a car struggle to drive? 6. What is friction? 7. Class experiment on how roughness of surfaces affects roughness.	Recap results from last week. Drop two tissues. Scrunched up and spread out. What was the only difference? Concept air resistance. Type of friction. Based on this knowledge and last week's experiment, can they create the best parachute possible to demonstrate their understanding? Support use of vocab + concept. Pretend to fly in the plane and then use these parachutes to jump out.	Compare and group materials continued Range of materials for chn. to select from. Guided drawing of table. Not including object (just material). Discuss what they are made from, ensuring they are specific (as learned last week, not all plastics / fabrics etc. are the same). Guided filling in of materials / labelling when they collect. Chn. to test the materials for the same properties as last week, but now filling in a table. Children now compare and group. Which are waterproof? Which are hard? Etc. Which are hard and waterproof? Etc. Odd one out.	Fountain of Gold / Gold Crystals Begin their journey to Dragon Vine Towers and stop at the ancient Fountain of Gold. Watch as the fountain yields its gold. Observe and describe what happens and what is made. Consider whether the reaction can be reversed. K: Accurate observations can be made repeatedly or at regular intervals to identify changes over time.	Day and Night Use a bright light, such as an LED torch, to represent the Sun and a globe to demonstrate the cycle from night to day. Place a sticker on the UK and see what happens as the Earth spins on its axis. Use their model to make a stop motion video demonstrating an Earth day. Use the web to see live video footage from worldwide city locations, or have live webchats with friends or family in other countries. Note: Do not look directly into bright LED light. Also include	Baby to child development Recap Year 2 by sorting pictures into order as age (simple: baby, child, teen/young adult, old age). How does each type of animal have young? Mammal, reptile, bird, amphibian, fish, invertebrates How long do you think each of these mammals are pregnant for? What is the gestation period? Discuss answers and then patterns (bigger = longer gestation period). Then, link to humans. Gestation period of 9

	8. Model push/pull scenarios. 9. Options with a north/south pole. Batteries are positive/negative not north/south. 10. True/false statements (have already explored in this lesson, so can hopefully now answer) 11. Metals which are magnetic (again, already explored this lesson, so can hopefully remember/re-explore if not).	K: Air resistance is a type of friction. It is a contact force that acts when an object moves through air. It always acts against the direction of movement.	Run out of X waterproof/hard etc. material. What could they use instead? K: Different materials have different properties. Materials' properties makes them suitable for specific purposes. Properties include hardness, solubility, transparency, conductivity (electrical and thermal) and magnetism.		time zones (geography link). As Earth orbits the Sun, it also spins on its axis. It takes Earth a day (24 hours) to complete a full spin. During the day, the Sun appears to move through the sky. However, this is due to the Earth rotating and not the Sun moving. Earth rotates to the east or, if viewed from above the North Pole, it rotates anti-clockwise, which means the Sun rises in the east and sets in the west. As Earth rotates, different parts of it face the Sun, which brings what we call daytime. The part facing away is in shadow, which is night time.	months, called pregnancy. Put images of gestation in order. Then, add in developmental milestones. Hearing begins / bones fully develop / full term and ready to be born / brain grows rapidly / muscles fully developed / fingers and toes develop / lungs begin to develop / physically becomes a boy or girl Watch video K: Humans go through characteristic stages as they develop towards old age. These stages include baby, infant, toddler, child, adolescent, young adult, adult and senior citizen. Puberty is the transition between childhood and adulthood.

Week 3	Gravity What is a force? - Write a definition. Which force is being used here? (push/pull/magnetic) What will happen if I drop something? Why will this happen? Apple + Isaac Newton If gravity pulls objects down, does that mean objects fall off the Earth if they are on Antarctica? (Have already explored Antarctica in other lessons, so the chn. know this doesn't happen) K Gravity is a force of attraction. Anything with a mass can exert a gravitational pull on another object. The Earth's large mass exerts a gravitational pull on all objects on Earth, making dropped objects fall towards the centre of the earth.. Specific knowledge Year 5 Gravity is a non-contact, pulling force which attracts two objects that have mass. Write a class definition for what gravity is. What forces are in action here? Incl. drawing diagrams in books. Skidoo	Levers LQ: How do levers work? Use a lever to life the meteorite enough to get a rope / structure underneath in preparation for lifting. What is a seesaw? How does it work? Who is it best to play on a seesaw with? Ruler and weights / objects. Can you balance the ruler on the pencil? Discuss middle. What if you add a weight to one side? Can you balance it then? Discuss what happens to where the pencil needs to be. (may need a metre ruler) What is a machine? What is a lever? How does a lever work? What is a lever used for? Create a lever with metre ruler and fulcrum. Add a weight on one end. What weight needs to go on the other side of fulcrum to make it tip/lift the weight? What if the weight is closer to the fulcrum? Create a table of data. Discuss how placing	Thermal conductivity Fuel was rationed during WW2. What would best insulate to keep warm? Cooking with coal fire also encouraged so could be material for that (conductor). Definitions: thermal, conduct, insulate In the context of objects (e.g. coat / flask / plan / iron) What might a thermal conductor be? What might a thermal insulator be? Is the whole of the object a thermal insulator / conductor (e.g. pan/iron handle). Have a selection of materials. How could we test if these are thermal conductors or insulators? Watch video Question Prediction – linking to knowledge of materials used in pans, irons, coats etc. Method, including fair test and identifying variables Results – table Conclusion Year 5: with support; Year 6: increasingly independent Experiment: use materials as coasters for beakers. K: Thermal conductors conduct heat. Solid metals are good thermal conductors because their particles are closely packed and they have strong, lattice metallic bonds. Solids, such as plastic, wood and glass do not have these bonds so	Science Week Alchemists' Challenge part 1 and part 2 Part 1: Make their way through the long, dark halls of Dragon Vine Towers and find Alchemy Island's Chief Alchemist, who lives there with his team. Give the Chief their golden report and head to the laboratory, where the benches are lined with reagents. Explore what's on each bench and record their experiences, using scientific vocabulary to describe what happens. K: The results are information, such as measurements or observations, that have been collected during an investigation. A conclusion is an explanation of what has been discovered using evidence collected. Part 2: Discover where to travel next by taking on a challenge set by the alchemists; hide the gold dust. Add level spoons of gold dust to one beaker containing 50ml of cold water and one beaker containing 50ml of warm or hot, but not boiling, water. Stop when a saturated solution is created. Plan and carry out their test	Phases of the Moon Use a circular shaped printing block or object to create a lunar chart, based on the phases of the Moon over a month. Use a range of moon colours, such as silver, white, grey and yellow. Print onto black paper for maximum effect. Ask children to label and describe the phase of the Moon shown on each print, using a range of interesting printed fonts. K: Phases of the Moon to show should include new, first quarter, last quarter, waxing crescent, waning crescent, waxing gibbous, and waning gibbous.	Line graph of baby to child height / weight Definition newborn, infant, toddler, child Give pictures to order and then match to ages + developmental milestones. Key change: how much sleep do we need as we grow? Use data of baby – child age-height data to draw a line graph. Adaptation by: growth of babies data; growth of boys and girls data; find averages and then plot the averages Use graph to answer questions. e.g. Do they grow at the same rate? Between which ages do they grow fastest? Use secondary sources of information. (NC – UKS2 science introduction). K: Juveniles go through rapid growth, change and development over time. They become taller, talk and walk, learn new skills, such as reading and writing, and change from

	Throwing a ball Does gravity act the same on all objects? Mass/weight Use Newton meters and scales to explore any links. Draw a table to record results. Discuss results and findings as a class. K: A Newton Meter is used to measure force in Newtons.	weights by the measurements on the ruler so our results between groups are comparable – fair test. Identify independent and dependent variables. The meteorite is really heavy. Which set up of the lever is most likely to lift it? K: Mechanisms, such as levers, pulleys and gears, give us a mechanical advantage. A mechanical advantage is a measurement of how much a simple machine multiplies the force that we put in. The bigger the mechanical advantage, the less force we need to apply. Specific knowledge Year 5 A lever is a simple machine that provides a mechanical advantage to make it easier to lift a heavy load. It consists of a lever arm, a fulcrum, a load and effort. As the distance between the fulcrum and the effort increases, the effort needed to lift a load decreases.	they do not conduct heat. They are thermal insulators. Liquids and gases are poor conductors of heat because their particles are further apart.	fairly, recording and displaying their results. Look for any differences in the number of spoons of gold dust that they added to the cold or hot water, then explain their results. Leave all or some of their saturated solutions in a sunny or warm place. Monitor changes that occur each day over a couple of weeks and note what happens when all of the water has evaporated. K: Some materials (solutes) will dissolve in liquid (solvents) to form a solution. The solute can be recovered by evaporating off the solvent by heating. Evaporating can be used to separate dissolved solids from liquids.		wholly dependent babies to more independent school children.

Week 4	Friction Recap what a force is. Recap what gravity is. Draw a diagram. Push an object (linked to diagram). Why does it eventually stop? Recap friction. Expedition to find meteorite. What type of path will be best? Ice (table top), hardcourt or grass. Pull object on each. Middle one best. Group guided (stem sentence) recording for question / prediction / method / results and conclusion. K: (review) Friction is a force between two surfaces as they move over each other. Friction slows down a moving object. Smooth surfaces usually generate less friction than rough surfaces. K: A force is a push or a pull that makes something move, change its speed or change its shape. There are two types of forces: contact forces and non-contact forces. Contact forces include friction, air resistance and water	Pulleys LQ: How do pulleys work? Use a pulley to lift the meteorite out of the hole. How are we going to pull the meteorite out of the whole. See if can guide towards old fashioned wells / similar – pulleys. What is a pulley? How do pulleys work? Groups make a pulley. Use Newton meters to measure the force to lift objects (hanging in air). Then, put objects into basket and measure the force to the pulley requires to lift them. If poss. / time / works accurately (and don't need to discuss why results not accurate): What might make the pulley need less force to lift the meteorite? It's really heavy. K: Mechanisms, such as levers, pulleys and gears, give us a mechanical advantage. A mechanical advantage is a measurement of how much a simple	Electrical conductivity The circuit in a search light/lighthouse/torch has broken! A wire has been sabotaged and cut. What could we use to fix it? What should we cover our hands/touch the circuit with so we are not electrocuted? Based on last lesson, what are electrical conductors and insulators? Which materials are electrical conductors / insulators? Question Prediction Method Results Conclusion Venn diagram to compare electrical and thermal conductor materials. K: Electricity is a form of energy that makes things work. Circuit components include cells, buzzers, switches, wires, lamps and motors. A collection of components connected by wires in a loop is called a series circuit. Materials that allow electricity to flow through them are called electrical conductors. Materials that do not allow electricity to flow through them are called electrical insulators.	Panning for Gold Plan an investigation to recover gold nuggets from a soil sample taken from Au Tor. Discuss what methods could be used to separate the materials. Carry out the investigation to test their ideas and hunt for gold. Decide which methods worked best and find out if anyone recovered any gold. K:A mixture is a combination of two or more substances that aren't chemically joined and can be separated back into their individual substances. Heterogeneous mixtures consist of distinctly different substances and are easy to separate. Substances in homogeneous mixtures are evenly distributed and you cannot see the different parts. Homogeneous mixtures are difficult to separate.	Is Pluto a planet? Look at a definition of a planet. Have pieces of evidence scientists have about Pluto. Children work in groups to sort the scientific evidence into that which supports it being a planet and that which refutes it being a planet. Discuss why scientists originally thought it was a planet and then changed their mind. Children write a conclusion, explaining if they think Pluto should or shouldn't be classed as a planet and why. Use secondary sources of information. (NC – UKS2 science introduction).	Adult to old age development Order pictures of humans at different ages over adulthood. Discuss and label why they have ordered them like that? What features / characteristics gave them hints? Do all older people have grey/white hair (hair dye)? Do all older people start to need a walking stick / wheelchair? Do all people start going grey at the same age? Do all people start to get wrinkles at the same age? Is it only old people who might use a mobility aid? K: As humans age, many of the body's systems gradually decline, leading to the changes seen in older people. These changes include the loss of eyesight and hearing, greying hair, wrinkled skin, weakened bones, joints and muscles, heart problems, memory loss, and brain function problems.

	resistance. Non-contact forces include magnetism and gravitational force, or gravity.	machine multiplies the force that we put in. The bigger the mechanical advantage, the less force we need to apply. Specific knowledge Year 5 A pulley is a simple machine that provides a mechanical advantage to make it easier to lift a heavy load. It consists of one or more grooved wheels and a rope. As the number of wheels, and the number of pieces of rope supporting the pulleys, increases, the effort needed to lift an object decreases, but the distance the rope has to be pulled increases.				
Week 5	Water resistance Recap what a force is. Recap expedition. We will need to take a boat for the next part. Which boat will be fastest? Label a diagram of a boat. Gravity, pull of an oar creating motion. Is it as easy to walk in water as it is to walk out of water? Why? Prediction / method / results / conclusion. Groups discuss + CT types responses.	Gears LQ: How do gears work? Our bicycles aren't strong enough to pull the meteorite along. Do you have gears on your bike at home? Why do bikes have gears? How do gears work? Chn. make gears. Colour code so they can count the revolutions.	Test which materials are best for a purpose A museum decides to use a reconstruction Anderson shelter as a café. What material would be best for the tables, to meet food hygiene regulations (hard, waterproof, smooth). Question Prediction Method, including fair test and variables Results	Assessment Head Start	Assessment Head start	Timeline of human development – recap, consolidate (includes recap of child – adult, which is covered in PSHE puberty sessions) Each child in the class gets a picture of a human at a different age. Place them down and then discuss the order. Adult addresses misconceptions.

	Chn. to make playdough into different shapes for the hulls of the boats. Which are harder / easier to push through water? Discuss concept water resistance + link to friction. Which boat type will be fastest? Discuss upthrust if the question is asked – why doesn't it sink? Prediction Method (objects in water and out; Newton Meter) Results Conclusion Guided with the above + CT / group filling in of aspects. Guided identification of fair test, independent variable and dependent variables. K: Water resistance is a type of friction. It is a contact force that acts when an object moves through water. It always acts against the direction of movement. Decreasing the surface area at the front of an object reduces the amount of water resistance. The more streamlined an object, the faster it will fall through water.	How do bicycle gears work? (more complex) What will happen if we add these gears to our bikes? Will we want to all be in a small gear or a large gear? Act out now being able to ride our bicycles and pull the meteorite. K: Mechanisms, such as levers, pulleys and gears, give us a mechanical advantage. A mechanical advantage is a measurement of how much a simple machine multiplies the force that we put in. The bigger the mechanical advantage, the less force we need to apply. Specific knowledge Year 5 Gears are toothed, interlocking wheels that can be place together to make a mechanism that provides a mechanical advantage. Linking gears of the same size does not provide a mechanical advantage. Linking different sized gears does create a mechanical advantage. Smaller gears rotate more	Increasingly independent writing up an experiment + understanding of science experiment terms.			Why do some people live longer? (if appropriate for class) Illness / genetics / health / injury

		quickly and are easier to turn but do not provide much force. Larger gears rotate more slowly and are harder to turn but provide more force. Gears are used in bicycles to make it easier to cycle uphill and faster to cycle on the flat.				
Week 6	PGL – If appropriate, recap the concepts of friction / gravity as participate in the activities.	Assessment Head Start	Scatter Graph Draw a scatter diagram of results from lesson 5. Scaffolded as required. Conclusion for session 5 experiment, based on results, including the graph.	Terms 3 and 4 can often be 5 weeks, so this is kept free to help ensure time for full coverage.	This term can often be 5 weeks, so this is kept free to help ensure full coverage. Trip to the National Space Centre to also occur this term.	Assessment Head Start

Class 3 Year B (Year 5 and 6)

Term and Cornerstone's Topic	T1 Sow, Grow and Farm	T2 Sow, Grow and Farm	T3 Groundbreaking Greeks	T4 Groundbreaking Greeks	T5 Darwin's Delights	T6 Hola Mexico!
Title and Year of NC Science programme of study (Links)	Sc5/2.1 Living Things and their habitats	Sc6/4.1 Light	Sc6/4.2 Electricity	Sc6/2.2 Animals including humans	Sc6/2.3 Evolution	Sc6/2.1 Living Things and their habitats (Y6 objectives)
Vocabulary	flowering plant Pollinated Asexual reproduction Bulbs tubers daffodil potato Runners spider plants strawberries blackberries amphibian mammal bird reptile insect vertebrate invertebrate characteristics dragonfly butterfly metamorphosis Venn diagram gestation	light sources travel straight lines solid object shadows torch hypothesis investigation independent variable Conclusion results dependent variable sun fair test periscope opaque transparent translucent	electricity electric current Thomas Edison Nikola Tesla Alessandro Volta alternating current direct current battery cell bulb wire open switch closed switch motor buzzer circuit voltage brightness	Circulate Circulatory System heart lungs blood vessels blood arteries veins oxygenated deoxygenated capillaries drugs alcohol misuse	Classify Classification Living thing Plant Animal Vertebrate Invertebrate Mammal Reptile Bird Fish Amphibian Parent Offspring Inheritance Variation DNA Inherited characteristics Acquired characteristics Adapt Adaptation Adapted Evolve Evolution Adaptation Environment Genetic mutation Evolve Evolving Adaptation Fossil Trace Mould + cast Preserved Amber Replacement Evolution Fossil record	Classify Classification Characteristic Specific Linnaean classification system Class Order Genus Species Kingdom Phylum Family Domain Dichotomous key Mammal Bird Fish Reptile Amphibian Insect Arachnid Annelid Mollusc Crustacean Echinoderm Tree (deciduous / coniferous) Grass Cactus Moss Flower (perennial / biennial) Organism Micro

						Micro-organism Bacteria Fungi Virus Protist
Working Scientifically Focus	Sc6/1.3 recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs labels Sc6/1.6 reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations oral / written explanations	Sc6/1.1 planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Year 5 secure LKS2 fair test + introduce independent variable; Y6 secure independent variable + identify dependent variables. Sc6/1.2 taking measurements, using a range of scientific equipment, with increasing accuracy and precision ruler Sc6/1.3 recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs diagrams and labels; tables; line graph Sc6/1.4 using test results to make predictions to set up further comparative and fair tests predictions Sc6/1.5 using simple models to describe scientific ideas Sc6/1.6 reporting and presenting findings from	Sc6/1.1 planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Year 5 increasingly confident with the aspects of scientific enquiry; Year 6 work towards planning own investigation/s Sc6/1.2 taking measurements, using a range of scientific equipment, with increasing accuracy and precision observation Sc6/1.3 recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs diagrams; tables Sc6/1.4 using test results to make predictions to set up further comparative and fair tests Sc6/1.5 using simple models to describe scientific ideas (how electricity / electrons flow)	Sc6/1.1 planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary increasingly confident and independent Sc6/1.2 taking measurements, using a range of scientific equipment, with increasing accuracy and precision weighing scales Sc6/1.3 recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs tables; if time (>5 weeks in term) bar chart Sc6/1.6 reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations increasingly independent oral and written (Year 6 aim to be independent written)	Sc6/1.7 identifying scientific evidence that has been used to support or refute ideas or arguments.	Sc6/1.1 planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary increasingly confident and independent Sc6/1.3 recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs classification keys Sc6/1.6 reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations increasingly independent oral and written (Year 6 aim to be independent written) Sc6/1.7 identifying scientific evidence that has been used to support or refute ideas or arguments. If time: How is a platypus classified? (also

		enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations guided oral and written	Sc6/1.6 reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations increasingly independent oral and written			scientific ideas have changed over time – NC, UKS2, science introduction)
Week 1	Flowering plant reproduction LQ: How do flowering plants reproduce? Identify male/female parts on their dissected flower. Have a look at and botanical illustrations and discuss why might use these rather than/alongside photos. Recap life cycle of a plant from year 3. Dissect a flower and name the parts. Pairs. Add to knowledge of sexual reproduction in plants: Or this video only Up to 3 min: Complete life cycle of a flowering plant diagram.	How does light travel? (Recap Y3 prior learning) Can we see in the dark? Does light come from our eyes? What are light sources? Recap fair test. What can we remember? Key vocab. What could we do to find out the answer to these questions? Guide as much as necessary. Use lesson powerpoint Question 1: Can we see in the dark? Questions 2: What are light sources? Question 3: Does light come from our eyes? Work through question 1, formally recording and experiments. Work through question 2, formally recording and experiments.	LQ: Do scientific ideas ever change over time? (Recap learning in Y4) Sort appliances into electrical and non-electrical then natural and man-made. In groups, sort the cards by date. Read them together once we have ordered them, making sure they are in chronological order. Take clear photos to stick into books. Answer the question in books: Do scientific ideas ever change over time? Use at least one example from today's lesson. Remember, the question is asking about scientific ideas, not inventions!	LQ: What is our circulatory system? Before this lesson – observe an animal heart. Recap LKS2 human body (skeleton, muscles, digestive system, teeth) Introduce vocabulary and parts of the circulatory system and watch this video. Label the parts of the circulatory system, using the words in the word bank. Heart lungs blood vessels blood arteries veins Finish by observing a real animal lung.	LQ: How can we classify living things? Children work in pairs. Recap what is a living thing / not a living thing. Are all these pictures of living things? Sort the pictures into plant / animal. Put the plants to one side. Sort the animals into vertebrates and invertebrates. Sort the invertebrates into hard and soft bodies (exoskeleton and not). Put the invertebrates back in the pot. Sort the vertebrates into mammals, reptiles, birds, fish, amphibians. Put the vertebrates to one side. At each point, recap what the characteristics are. Chn. to photograph their work.	LQ: What is classification? Chn. in mixed attainment groups. Give groups a handful of Haribo + a large whiteboard. Place the Haribo in a group at the top. Draw a circle around. Draw this going to two parts. Ask the chn. to split their Haribo into two groups. Groups share how grouped. Discuss vocab. – classify / classification / characteristics. Model use of during explanations. Can you classify them in another way into two groups? Split one of those groups into two groups.

	Pollinated by wind / insect table. Refer to lesson knowledge on allotment village as/if appropriate. K: Reproduction is the process of producing offspring and is essential for the continued survival of a species. There are two types of reproduction: sexual and asexual. Sexual reproduction involves two parents (one female and one male) and produces offspring that are different from the parents. Asexual reproduction involves one parent and produces offspring that is identical to the parent. Parts of a flower include the stamen, filament, anther, pollen, carpel, stigma, style, ovary, ovule and sepal. Pollination is when the male part of a plant (pollen) is carried, by wind, insects or other animals, to the female part of the plant (carpel). The pollen travels to the ovary, where it fertilises the ovules (eggs). Seeds are then produced, which disperse far away from the parent plant and grow new plants.	Discuss question 3. Y6 focus: ideas to plan own investigation K: Dark is the absence of light and we need light to be able to see. K: Light is a form of energy that travels in straight lines.			What does 'classify' mean? What is 'classification'?	Back to all together. Can they split them three ways? Can they sort those groups? Can you keep sorting them until there is only one in each group? Discuss if their characteristics overlap as misconception arises. Then give pics of plants / animals (may now need to push tables together + draw on tables as will need lots of space) Allow to sort and discuss. Then focus on groups who have done as below: Sort into plants / animals. Sort animals into vertebrates / invertebrates. Sort vertebrates into mammals / reptiles / fish / birds / amphibians. Sort invertebrates into hard / soft bodies + then (if ready) into annelids / echinoderms / insects (arthropods) / molluscs / crustaceans At each point groups share + discuss within their group + then sharing between groups. Groups to take photos. At end pic. Collage +

						then to annotate with their reasoning behind the groups. Groups to make notes on their diagrams so don't forget by Pic Collage time.
Week 2	Asexual plant reproduction LQ: How do non-flowering plants reproduce? Recap that sexual reproduction required two parents. Asexual reproduction requires 1 parent + some plants reproduce in this way. Some plants can reproduce in both ways (sometimes with human help). K: Flowering plants reproduce sexually. The flower is essential for sexual reproduction. Other plants reproduce asexually. Bulbs, corms and rhizomes are some parts used in asexual reproduction in plants.	Does light travel in straight or curved lines? Shadows—model with string. LQ: Why do shadows change size? Recap previous learning. All together, saying the sentences and filling in the missing words. Repeating if needed once teacher has clarified the answers. 5 mins to use a torch and explore making shadows. Discuss shape findings – will come back to others in later weeks. What is a hypothesis? Conduct investigation – guided, based on hypothesis? Incl. what an independent variable is. K: Shadows change shape and size when the light source moves. For example, when the light source is high above the object, the shadow is	LQ: How do you draw a diagram of a circuit? Recap Y4 circuits (Show picture of simple circuit) Why does this work to make the bulb light up? Stand in a circle and hold hands. One person have a torch and pretend to be a bulb. One person pretend to be the battery. Your joined hands are the wires. Model the electricity travelling around the circuit. Now, make a break in the circuit. Does it now work? Display symbols for circuit diagrams. Teach correct name for battery is 'cell' and show positive and negative electrodes. A battery is the scientific name for a collection of cells joined together. Model a circuit diagram of a simple circuit and	LQ: What is the function of all the parts in our circulatory system? Recap on previous vocabulary and learning. Brainstorm: How does the heart pump blood through the body? Look at a heart and find out how it pumps blood through the body – watch this video. Listen to each other's hearts through a stethoscope. Use the model circulatory system to answer and demonstrate the following questions: What does the blood travel through? Why does the blood need to travel around the body? Why does the blood need to travel around the body? – (It transports everything our bodies need to stay healthy: • Transports oxygen,	LQ: Are the offspring of living things the same as their parents? What is the same? (pics diff. breeds of horses) What is different? (same pic. Diff breeds of horses) Chn. to group the horses by breed in pairs. What are offspring? Match animal parent and offspring pics. (infant offspring and then adult offspring) Do the offspring look the same as their parents? Why do offspring not look exactly the same as their parents? DNA, inheritance Inherited characteristics Acquired characteristics	LQ: What is the Linnaean classification system? What do you remember? Different ways can sort based on specific characteristics. Scientists tend to use one specific method. Sort in the order you think they will go: Class Order Genus Species Kingdom domain Linnaean classification system: Answers to order go in. Add in phylum and family. Different ways to look at it: pyramid, vertical (up and down), sideways. Idea of more to less. Look at with specific example of the Grey Wolf. Link back to evolution in Term 5. 3 domains. 5 kingdoms. Model drawing (or filling in) a Linnaean classification chart.

		short and when the light source is low down, the object's shadow is long. Shadows always appear on the opposite side of the light source. A shadow is made when an object blocks the passage of light from a light source. A shadow is the same shape as the object that casts it because light travels in straight lines.	add in symbols to show additions reinforcing whether electricity would flow or not. Carry out group based investigations including diagrams: E.g. Would this circuit work? Draw a diagram of the circuit you would build; explain why it would or wouldn't work. What happens if you change the number of batteries? (Prediction then carry out) for basis of next week's lesson.	• transport hormones (chemical messengers – e.g. for puberty), • transport nutrients & water to different parts of our bodies; • transports waste (e.g. carbon dioxide) back out of different parts of our bodies; • helps protect the body from illness; helps keep the body at body temperature (37°C). How does oxygen get into our blood? How does waste (like carbon dioxide) get out of our blood? Children finish by labelling own diagram and/or writing an explanation with correct vocabulary.		Domain names in blue / purple. Kingdoms in yellow / orange and give them crowns. Use cards to add living things to the correct kingdom. (Hamilton Trust cards) Extension: phylums Mnemonic for remembering the order: King Philip Can Only Find Green Socks Scientific and common names
Week 3	Life cycles: insect and amphibian LQ: How similar are the life cycles of amphibians and insects? Recap amphibian, mammal, bird, reptile, insect, vertebrate, invertebrate. Pics + sort into these categories in groups, supported to discuss the characteristics as do so. Life cycles video: Focussing on amphibians and insects today.	Explore the size and shape of shadows. LQ: why do shadows change position? Recap previous learning. What happens to shadows outside? Why does the sun move over a day? Why do shadows change size over a day? – use learning from previous week. Why do the shadows change position over a day? Chn. investigate – incl. discussion about fair test, independent	LQ: How do you change the voltage in a circuit and what is the effect of this on a bulb or buzzer in the circuit?. Recap how a circuit works by watching the video. Current: This is the steady flow of electrons. This is measured in amperes (amps) Voltage: This is the force that makes the electric current flow.	LQ: How are water and nutrients transported around the body? Review digestive system: Why Do We Need Nutrients? Match the type of nutrient with the job that it does. (Class discussion) Watch the video and then act out what happens. How do nutrients get into our blood? • Food is first broken down into nutrients. • Nutrients are absorbed through the walls of our	LQ: What is adaptation and evolution? Book: Moth Read the book 'Moth'. Game to model concept: white + dark strips of paper (trees) + white + black cubes (moths). Pick them up and drop them on the trees. Any on the wrong colour get eaten. As the world becomes more polluted, more trees (paper) is dark. How does this alter which moths are eaten? Which are best adapted to survive?	LQ: How do we classify animals? Odd one out (consolidate what a mammal is) Mammals: bear, bat, whale, lemur, mouse Reptile: crocodile/alligator Use a dichotomous key and pictures of different cats to identify the name of each species. Briefly recap how animals are grouped. Recap how invertebrates grouped in more detail.

	Hand out some different life cycle diagrams (Hamilton Trust). Which are insects and which are amphibians? (esp. dragonfly) What is similar about all of the amphibian life cycles? Then label the frog lifecycle. Can they now use that vocabulary to label the other amphibian life cycles? Discuss same / different (CT types up). What is similar about all of the insect life cycles? Label the butterfly lifecycle. Can they now use this vocabulary to label the other insect life cycle. Discuss same / different (CT types up). Discuss metamorphosis. Table similarities and difference between insect and amphibian life cycles. (esp. dragonfly) A life cycle is the series of changes in the life of a living thing and includes these basic stages: birth, growth, reproduction and death. Mammals' life cycles include the stages: embryo, juvenile, adolescent and adult.	variable and dependent variable. Maya link video. K: Shadows change shape and size when the light source moves. For example, when the light source is high above the object, the shadow is short and when the light source is low down, the object's shadow is long.	This is measured in volts (V) The greater the voltage, the more current will flow. Show how different voltages are labelled on a circuit diagram. How does changing the number of cells in a circuit effect the brightness of a bulb? Let's investigate the hypothesis (what makes a good hypothesis – solid question, based on what you know so far/research, testable. Can there be independent and dependent variables in order to test fairly? Go back to previous prediction about number of bulbs? Now write a hypothesis: Remember – a hypotheses does not say 'I think…'. That is a prediction. A hypothesis just is a statement. (e.g. The more cells there are in the circuit, the brighter the bulb will be.) Session 2 Build and carry out the investigation set up in	intestines in a process called diffusion. • Once it is through the walls of our intestines, it travels through the capillaries and into our blood vessels. • The nutrients travel in our blood, through the circulatory system, to the different areas of the body. • When the nutrients reach parts of our body in which they are needed, they travel through capillaries to the part of the body and then into that part by diffusion (again). • Diffusion works by the nutrients travelling from where there are more of them, to where there are less of them. Conduct an experiment to find out what happens when nutrients travel (through diffusion) into the parts of our bodies where they are needed. • We will do this with jelly worms. • One group will investigate what happens when we chew food first. One group will investigate what happens when we don't chew food first. • This experiment will take a while to show results. We will check	Can the children re-tell the story of how the peppered moth adapted and evolved?	Watch this video Mixed attainment sheets. Known ones first. Worksheet characteristics of different groups of animals. Have been recapping over year. Mammals / birds / fish / reptiles / amphibians / insects / arachnids / annelids / molluscs / crustaceans / echinoderms LA: one with pics to support. If time: How would we classify the platypus? OR (depending on group) Can you design your own animal that your partner would be able to classify based on its characteristics?

	Amphibians' life cycles include the stages: egg, larva (tadpole), adolescent and adult. Some insects' (butterflies, beetles and bees) life cycles include the stages: egg, larva, pupa and adult. Birds' life cycles include the stages: egg, baby, adolescent and adult.		last session, using circuit diagram and hypothesis. Answer questions about the process of carrying out the investigation: Did you encounter any problems when making that circuit? Did you need to adapt your plan in any way? If you did, draw a diagram of the circuit you have not made to test this. How do you know if the bulb is the same, brighter, or less bright than your bulb from last week? Can you really remember it very clearly? Do you need to build any other circuits to really find out the answer? Draw a diagram of each circuit that you make. Record results in a table. Discuss questions: How did we make sure it was a fair test? What is the independent variable (the one thing we changed)? What is the dependent variable (the thing that changed because we changed the independent variable)? Model a conclusion: In conclusion, the results show that the greater	what we have found out tomorrow. • How does water get into our blood? Water does not need to be broken down first. Our bodies want to use it exactly as it is. • Water travels through the walls of our intestines by a process called osmosis. Conduct an experiment to find out what happens when water travels (by osmosis) into the parts of our bodies where they are needed. We will do this with coloured skittles.		

			the number of cells, the brighter the light bulb: there are more volts, which results in greater force and so a greater current flowing around the circuit. Mini-investigation for plenary: What do you think would happen if we kept adding more and more cells? 1.Write your prediction down. Remember to give a reason for your prediction. 2. The adult in your group will test this for everyone to see with one bulb. 3. Write down the results. What happened? 4. Write down your conclusion. Try to explain why this happened? Was your prediction correct?			
Week 4	Life cycles: mammals and birds LQ: How similar are the life cycles of mammals and birds? Recap amphibian, mammal, bird, reptile, insect, vertebrate, invertebrate. Pics + sort into these categories in	Why do shadows change position: (Line graph on shadow length data) Recap previous learning. What happens to shadows outside? Why does the sun move over a day?	LQ: How do you plan an experiment? Recap learning on fair testing/electricity so far. Plan an investigation based on the questions: Does the number of bulbs in a circuit affect	LQ: How do diet and exercise affect our bodies? Review and assess on learning so far: circulatory system, nutrients and fair testing. Sort images into healthy and unhealthy lifestyles.	LQ: Why do living things need adaptations that suit their environment? Adaptations Game Groups. Each person has an animal. One person is 'nature'. Go round each environment (biome/climate links).	LQ: How do we classify plants? Sort plant pics. In groups. Tree / grass / cactus / moss / flower Trees into deciduous and coniferous Flowers into perennial / biennial

	groups, supported to discuss the characteristics as do so. Life cycles video: Focussing on mammals and birds today. Hand out some different life cycle diagrams. Which are mammals and which are birds? What is similar about all of the mammal life cycles? Label a mammal life cycle (e.g.dog), using Hamilton Trust label cards. Can they use this terminology to describe the others? What is similar about all of the bird life cycles? Label a bird life cycle (e.g. duck) using Hamilton Trust label cards. Can they use the terminology to describe the others? Table of similarities and differences between mammal and bird life cycles. K: A life cycle is the series of changes in the life of a living thing and includes these basic stages: birth, growth, reproduction and death. Mammals' life cycles include the stages:	Why do shadows change size over a day? – use learning from previous week. Why do the shadows change position over a day? Chn. investigate – incl. discussion about fair test, independent variable and dependent variable.	how bright the bulbs are? Does the length of the wires in a circuit change the brightness of a bulb? Scaffold the process for children to plan as appropriate (See powerpoint) for prediction, hypothesis, method results and conclusion. Based on the results of your experiment, does anyone have any further questions they would like to investigate?	Review meaning of healthy diet using vocabulary: nutrients, balanced. Discuss and show the impact of a healthy diet on the body, using diagrams and watch this video Use the power point diagrams to discuss the following: What Counts as Exercise? Exercise is physical activity that requires effort, raises your heart rate and works your muscles. Describe two types of exercise: bone strengthening and muscle strengthening. What happens when we don't eat healthily and don't do enough exercise? • Our bodies won't get all the nutrients we need. This can mean: • We feel hungry more quickly. • We feel really energetic for a bit and then really tired soon after, instead of having a constant amount of energy.	Roll of dice gives element of chance for scores in finding water, food, protection from animals and protection from the environment. Nature will say whether to +/- from this dice score due to adaptations. Who wins for each environment? LQ: How can genetic mutations lead to an animal evolving into a different species (type) of animal? There are 4 players on each planet. Each person gets one of the species (type of animal). On each turn, you will roll the dice. This will give you a random genetic mutation, which adapts your animal. You can choose which animal will receive that adaptation. Your animal is fully evolved into a different animal when it has all the adaptations for another environment; it then moves there. The winner is the first person to have each of their animals fully adapted and evolved into a different animal, to live in each of the environments on Miss Pearce's planet.	Have pictures and names of trees in local environment. (or flowers) Go outside. Which can we find in our local environment? Have leaves / pics of leaves. Can we create a dichotomous chart for the trees (or flowers) that we found in our local environment? Adapt as appropriate.

	embryo, juvenile, adolescent and adult.			• We get ill more easily. • We feel more tired. • We get constipated more easily. • Our muscles are less strong or ache more easily. • Our skin, hair and nails are less strong. • We feel sadder. Support the planning of an investigation to find out in groups: What happens when blood travels through narrower vessels? Reinforce the process and use averages for their results. Each group to draw own conclusions.	Worked well as afternoons during SATS week.	
Week 5	Becoming Natural Scientists—describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird Option 1 Recap the life cycles looked at so far and what the identifying features of each are. Create a 4-way Venn diagram showing similarities and differences. In groups, on large pieces of paper. Colour coded circles.	How do we see? Periscopes Sc6/4.1b 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 Sc6/4.1c 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	LQ: How do you use your test results to make predictions to set up further comparative and fair tests? Review learning as last session. Children to follow the same process as last week (scaffolded as necessary) to conduct their own investigation to answer their own question from last week.	LQ: What are the effects of drugs and alcohol on the human body? Use the information in the adapted powerpoint to place the type of drug in the correct part of the diagram: Always OK, sometimes OK, Never OK. Sort out the cards to finish the diagram. If possible supplement with LCC visit on drugs and alcohol misuse/JPCSO.	LQ: How do we know about evolution? Read 'Grandmother Fish'. Concept of evolution. Act out as go. Look at evolution chart in the cover. How do we know about these living things from so long ago, that don't exist anymore? Fossils – types of fossil (modelling with jelly / ice / playdough) Look at pictures of fossils showing past + present	LQ: What are micro-organisms? Can be good and bad for you. Can't see them, but can see the effects. Question: What affects how micro-organisms multiply? Have you ever seen mouldy bread? What do you think makes it go mouldy faster / prevents it from going mouldy? Mixed attainment pairs. Children to decide on

	Which lifecycles are more similar / different? Chn. in groups + rotate round different activities to consolidate knowledge and vocabulary. 1. Sexual reproduction in plants. Use flowering plant fabric, Velcro poster to tell the story. 2. ID parts of an egg and their purposes. 3. Life cycle of amphibians. Use felt toys to show the life cycle / with laminated pieces / jigsaw life cycle of a frog / pages of a book. 4. Asexual reproduction in plants. Sort cards: raspberry plant for runner self germination; orange plant for grafting; taking a cutting 5. Life cycle of mammals. Order gestation cards shortest to longest. Can you spot any patterns? (size)	Recap previous learning. What is a periscope? How does a periscope work? What is the science behind the periscope? Likely will need to actually make the periscope in the last week, so the assessment can be earlier. Then, complete the opaque, transparent, translucent part. – I spy game.			forms. Children to identify similarities and differences – how do scientists know one is evolved from the other? Watch 'Dinosaurs: The Final Day' with David Attenborough. Worked well on the Friday after SATS.	what they are testing specifically. Create a question, prediction, method incl. ensuring it is a fair test and identifying variables. Support as required. Set up experiment. Collect results over the next week, then write conclusion. LQ: How do we classify micro-organisms? Pictures of different micro-organisms. Similarities and differences. How could we group them? Could you group them in another way? Look at how scientists group and name them. Bacteria Fungi Virus Protist Look at how each might link to their daily life. Look at on a Linnaean classification chart. Play 'What am I?' If time: Can you create a dichotomous key? Ada[t as necessary

Week 6	**Assessment – Head Start**	**Assessment – Head Start** **Year 6 – Head Start Progress topic 1**	**Assessment – Head Start**	**Assessment – Head start** **Year 6 – Head Start Progress topic 2**	**Assessment – Head start**	**Assessment – Head Start** **Year 6 Head Start Progress topic (3)**