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|  | | **Autumn 1** | | | **Autumn 2** | | | **Spring 1** | | | **Spring 2** | | | **Summer 1** | | | **Summer 2** | | |
| **Reception** | | **Weather and Seasons**   * learn about rain, ice, water * describe why the air moves * know about snow and melting * learn about rainbows * seasonal changes that happen in spring and summer * seasonal changes that happen in autumn and winter | **Insects**   * learn about insects and invertebrates live and where they live | | **Health and safety**   * know how to stay safe around electricity * learn about home and what you need * know the people you can trust * learn about first aid * importance of washing hands   (pshe links) | **Our body**   * learn about the parts of the body and their function: arms, legs, chest, hands, feet, eyes, nose * describe ears, mouth, hair | | **Machines**   * know different types of transport * know that machines help to make jobs easier * learn about non-living things * know changes of the body since a baby * we have similarities and difference but being unique | **Plants**   * learn about living things that are plants * learn about plants are where they come from * how to look after plants | | **Space**   * rocket is used to travel to space * a star is a huge ball of gas * name planets including Jupiter, Venus, Uranus | **Materials**   * things can change shape * melting * materials that act like a mirror * know how water changes * learn where a knitted jumper comes from (sheep to jumper) * usefulness of wool and what happens to wool when it gets wet | | **Food**   * diet and how to keep healthy * know fruit and vegetables * chickens and eggs * cows and milk * measuring and ingredients (easter/lent) * flour and wheat (Chinese new year) | **Animals**   * know where an animal lives and what it needs – breaths eats, drinks, makes home, has babies * know where a bird lives and what it needs – food, protection, keeps dry * know what animals live on a farm * know that dinosaurs roamed the earth | | **Forces**   * know what happens when you push or pull something * know which things sink and swim (float) | **Consolidation**  **And Assessment** | |
| **Year 1** | | **Animals including Humans – About Me**   * Human skeleton - skull, joint * Human organs – brain, heart, lung, limb * Body parts – arm, foot, knee, leg * 5 senses, nose = smell, eye = sight, hand = touch, ear = hearing, tongue = taste | | | **Animals including Humans – Animals**   * Bird – young born in eggs, feathers, warm-blooded * Fish – scales, fills, live in water, cold-blooded * Reptile – young born in eggs, cold-blooded * Amphibians – young born in eggs, cold-blooded, lives in water and on land * Mammal – young born live, warm-blooded, fur * Herbivore (deer, giraffe), carnivore (tiger, shark), omnivores (bear, hedgehog) * Classification of animals – vertebrates (has a back bone) | | | **Exploring Everyday Materials 1**   * Natural and manmade objects * Objects floating and sinking * Objects which absorb water and repel water * Fabric, metal, wood, plastic * Examples of objects made from materials – shirt, bolts, chair, bottle * Meaning of opaque and transparent | | | **Exploring Everyday Materials 2**   * Materials which are suitable to use to build a window – glass/plastic * Cotton – trousers, t-shirt, jacket, bag * Clothing for Wet weather – rain jacket, waterproof trousers, wellies, rubber gloves * For a house: bricks, timber frame, breeze block * Objects suitable in windy weather: windsock, windbreaker, wind turbine, wind toy, windmill * Absorbent materials – sponge, cloth | | | **Plants**   * Wildflowers are not planted by a person * Deciduous trees drop their leaves every year * Evergreen are trees that keep their leaves all year round * Understand a seed to a seedling, young adult plant * Label a tree - leaf, branch, trunk and roots * Label a plant – flower seeds, leaf, stem and roots | | | **Seasonal Changes**   * Appropriate clothing to wear in all 4 seasons * Months which fall into each season e.g. June July august is summer * Seasons of the year are summer, spring autumn and winter * Months of the year | | |
| **Year 2** | | **Uses of Everyday Materials**   * Wood – window frames, furniture, buildings, floors * Metal – furniture, buildings, statues, pipes, jewellery * Plastic – containers, toys, bags, pipes * Brick – walls, floors * Rock – roads, garden paths, floors, kitchen tops * Paper – toilet roll, writing paper, newspaper, cardboard * Glass – drinking glasses, windowpanes, television screens * Forces – pull, bend, drag, carry push, squash | | | **Animals including Humans 1 – Growth**   * Examples of - Precooked food, processed food, fresh food, frozen food, tinned food * Packaging traffic light code for nutrition values * Daily needs of a human – a place to live, food, water, air, sleep, hygiene and exercise * Food pyramid – fats/oils, meat/fish, milk/cheese/dairy, fruits/vegetables, bread/cereal | | | **Habitats from Around the World**   * Microhabitats – insects include: snails, worms, ants, centipedes, millipedes and butterflies; keep the microhabitat healthy. * Food chain – depend on each other to survive. Worms depended on plants, birds need worm as food source. * Habitats (animals and food eaten) pond, mountain, ocean desert, woodland and rainforest | | | **Living Things and their Habitats**   * Food chains, producer, predator (The grass is eaten by the rabbit, the rabbit is eaten by the fox) * Microhabitats – in a flower, in a log, under a leaf, under a log * Habitats – woodland, farmland, pond, costal, desert, mountain * Living – breathe, eat, grow, move, reproduce and hav3e sense * Dead – something that was once living thing. * Non-living – something that has never been alive. | | | **Plants**   * Plants need: water to their roots, right temperature, sunlight to make their own food, room to grow. * A plant germinates when it starts to grow. * Seeds need the right conditions: soil, water, air and the right temperature. * Plants starts as seeds or bulbs then seedlings. * Plants grow fruits and flowers and produce seeds. * The plant pollinates the seeds into the soil the process starts again. | | | **Animals including humans 2 – life cycles**   * Human life cycle – toddler, child, teenager, adult, old age * Chicken life cycle – egg, hatching, chick, adult chicken * Butterfly life cycle – eggs, caterpillar, pupa, butterfly * Frog life cycle – eggs (female lays eggs which are fertilised by the male), embryo (after 2-25 days the tadpole hatches from egg), tadpole (grows front legs: uses nutrients in tail as food), tadpole with 2 legs (grows fins and hind legs), froglet, adult frog (easts insects instead of plants 2-4 years it becomes an adult frog and can lay eggs) | | |
| **Year 3** | | **Rocks and Soils**   * Soil: air (oxygen, carbon dioxide, nitrogen), organic matter (living and dead plants and animals), water (air and water fill the gaps between particles of soil), minerals – broken down rock. * Chalk, flint, marble, limestone, sandstone, granite. * Igneous rock – far underground the temperature hot that rock melts into liquid (molten rock). When the liquid is underground it is called magma, when cooled forms igneous. * Metamorphic rock – formed under the surface of the earth from change (metamorphosis) that occurs under intense heat and pressure. * Sedimentary rock – form under the sea, broken piece settle then layers build up and pressure turns this sediment into rock. * Fossils – creature dies>covered in sediment, decomposes>sediments become rock, skeleton is pressed, earth movements raise layers of rock to surface>rock erodes exposing fossil | | | **Forces and magnets**   * Attraction, - opposites attract, north and south pole * Repulsion – same poles repel, north to north * Magnets have a magnetic field that some types of metal stick to like iron but not copper and aluminium. * The earth is a giant magnet with a north and south pole, large amount of iron-rich molten rock under the surface, the magnet field stretches into space * A compass works to align with the earth’s magnetic field. | | | **Animals Including Humans**   * Human skeleton: cranium, mandible, scapula, rib cage, vertebrae, radius, pelvis, coccyx, femur, patella, tibia, fibula * Animal skeletons * 5 food groups~ protein, carbohydrates, fatty acid, minerals, vitamin * Human muscles: neck traps, shoulders, chest, triceps, biceps, forearms, side abs, abs, upper back, lower back, glutes, quadriceps, hamstrings, calves | | | **Plants**   * Parts of a flower: petal, pistil (stigma, style, ovary, ovule), Stamen (anther, filament), Sepal, stem * Parts of a plant: root (absorb water), stem (transports water to leaves – evaporation causes more water to be sucked up the stem), fruit (the part of the flowering plant that contains seeds), flower, leaf * Seed disposal – wind (dandelion), expulsion (milkweed), animals (tomatoes, blackberry), water (coconut) * Plant Life cycle: seed, germination, sprout, seedling, tree, flowers, tree with fruit, fruits with seeds (starts again) * Photosynthesis: water, carbon dioxide, sunlight is needed, oxygen and sugar (glucose) is released | | | **Light**   * Shadows are caused when light is blocked by an opaque object. Larger shadows when the object is closer to light source because it blocks more of the light. * Mirrors reflect light so they create a clear image. Images in mirrors appear to be reversed. * Light travels in straight lines, when light hits an object it is reflected. If the reflected light hits our eyes we can see the object. * Regular reflection – light reflects off a flat surface, irregular reflection – light reflects off an uneven surface. * Reflective surfaces and materials reflect light better than others. * The sun can be dangerous, don’t look directly at it. | | | **Scientific enquiry**   * Scientific method: observation, question, hypothesis, experiment, analysis, conclusion * Fair test, variable, control equipment * Comparative/fair testing, research, observation over time, pattern-seeking, identifying, grouping and classifying and problem solving * pH scale – test acidity and alkaline of liquid. | | |
| **Year 4** | | **States of Matter**   * everything in our universe is made of matter, solid/liquid/gas. * Solid: strong bonds with fixed shape * Liquid: weaker bonds, more energy, can change shape. * Gas: really weak bonds, spread out and move more freely. * Changes of state – heated or cooled, melting and freezing (0degrees), boiling (100degrees). * Different substances have different melting, freezing and boiling points. * Condensation **–** when vapour (gas), touches a cold surface, the particles lose energy and the bonds become stronger, turning the gas into a liquid. * Evaporation – heating liquid water increased particles energy and bonds become weaker, turning int a gas. The hotter the temperature, the faster the rate of evaporation. | | | **Sound**   * When objects vibrate, a sound is made. Sound waves travel to ear. * Sound waves travel to the ear and make ear drums vibrate. Messages are sent to brain, recognises sound. * Pitch is how high or low a sound is. High pitch has a high frequency – sound source vibrates many times a second. * Volume – how loud or quiet. Quieter sounds = smaller amplitude and less energy (smaller vibration), louder sounds bigger amplitude, more energy. * Closer the sound source, the louder the sound. | | | **Electricity**   * Conductors: allow electricity to pass through e.g. steel, copper * Isolators do not allow electricity to pass through so it will not be a complete circuit e.g. wood, plastic * Simple circuit, loop that allows an electrical current to pass through. * Be able to explain why circuits will or will not light up a bulb * Draw symbols for electrical components: lamp, switch, motor, buzzer, battery, LED, 2 x diode | | | **Animals including humans - Food and Digestion**   * The digestive system: mouth/teeth, oesophagus, small intestine, large intestine, rectum, anus. * Types of teeth: incisor (cutting), canine (tearing), premolar(grinding), molar (crushing and girding) * Herbivores (horses)mainly use for incisors and molars * Carnivores (lion) mainly use canines and incisors and don’t have molars * Omnivores (humans) use all three * Food webs – shows interconnection of food chains * Food chains are linear and start with a produced and end with a predator | | | **Living Things and their Habitats**   * habitats and their features * classification keys – a series of questions that determine an organism’s physical characteristics. * Classification – sued to identify fan unknown organism or a way to categories groups of similar organisms. * Venn diagrams – another way to classify * Adaptations for survival | | | **Living Things and their Habitats – Conservation**   * Natural and human changes to the environment * Environmental changes –   seasons change, nature reserves, landslides, flooding, forest fires, water treatment plant, oil spills.   * Negatives: deforestation, littering, pollution, air pollution, rubbish * Positives: protecting endangered species via conservation projects, cleaning water, recycling, creating nature reserves | | |
| **Year 5** | | **Forces**   * Forces in actions – have a counter force; driving force: friction, gravity: air resistance, paddling force: water resistance * Pulleys – a wheel over which a belt, rope or chain is pulled to lift or lower a heavy object. * Leaver – a bar that rotates around a point make it easier to lift a heavy load. * Gears/cogs – toothed wheels that mesh together, rotate in opposite directions * Mass measured in grams/kilograms * Weight is how much force is needed to pull an object, measured in Newtons. * Sir Isaac Newton developed theory of gravity * Galileo conducted experiments to test mass. | | | **Earth & Space**   * Planets – Copernicus developed heliocentric theory = sun at the centre of solar system, four inner planets rocky terrestrial planets, four outer gas giants. * Moon phases – moon orbits earth in an oval pattern whilst spinning on its axis, sun illuminates moon, creates shadow of the earth creates phases. * Earth spins on its axis and completes full rotation 24 hours. * Earth orbiting the sun 365 days, when it is rotating it creates day and night. * Sun – a burning ball of gas which appears to move across the sky during the day – the movement is actually due to earth’s orbit around the sun. | | | **Properties of Materials**   * Heating causes water to evaporate, leaving the solid (salt) behind * changes of state – solid to liquid – ice and water (heading), liquid to solid (freezing), liquid to gas (evaporation), gas to liquid (condensation) * chemical reactions are irreversible * Reversible changes can be reversed using cool, heat, sieve and evaporation (physical change can be changed back) | | | **Changes of Materials**   * Properties of materials include conducts, insulates, transparent, waterproof, durable, magnetic * Metal conducts * Wood and plastic insulate * Dissolves (soluble), coffee sugar, salt, jelly * Doesn’t dissolve (insoluble) pepper, sand, wax * Separating – sieving, filtering, magnetism, evaporating | | | **Living Things and their habitats**   * Reproduction in plants – contain both male and female cells. Some need to be pollinated in order to be fertilized. Others use asexual reproduction to reproduce. * Common flower parts: stigma, style, stamen, petal, sepal, ovary. * Mammals reproduce and birth live young, either placental, monotreme or marsupial. * Birds and reptiles lay eggs and incubates them until ready to hatch. They are looked after by the mother before leaving the nest. * Metamorphosis: Amphibians are born underwater, complete metamorphosis as adults and can live and breathe on land. * Metamorphosis is a change in body from and habits during the life cycle. * David Attenborough and Jane Goodall. | | | **Animals including Humans -**  **Human Life Cycle**   * Human Gestation Period – foetus develops inside the female. * Human young (0-3years) – are dependent: need milk, have poor muscle control, need lots of sleep, cannot control toileting. Toddlers beginning walking between 1-2 years. * Human Youngsters(4-11years) – walk, eat and toilet independently. * Human adolescents (12-21 years) – puberty hormones cause physical, mental and emotional changes e.g. hair, greasy skin/spots, mood swings * girls: hips broaden, breasts develop, menstruation starts, boys: shoulders broaden, musclier, hair, penis and scrotum develop, voice breaks. | | |

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