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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)
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| **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.
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| **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
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| **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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