


West Norfolk Academies Trust (Primary) – Curriculum Map – Science

Disciplinary concepts within Science are also in the Science Enquiry lesson in each half term which is in addition to the unit of work studied.

|  | Autumn 1 st | Autumn 2 nd | Spring 1 st | Spring 2 nd | Summer 1 st | Summer 2 nd |
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| Pre School Knowledge | <i>Friends and Family Using our body to move in different ways and looking at things that make us the same and things that make us different Learning simple healthy routines</i> | <i>Light and dark Identifying nocturnal creatures. Looking at things that make light. Making observations and predictions through playing with shadows, watching a candle melt and a sparkler</i> | <i>Stories Exploring materials and their properties via story themes like gingerbread man and goldilocks through different materials - dough, pastry, porridge and water, paper, card, sticks, stones using them to create gingerbread man</i> | <i>Are we there yet? Using rolling balls to explore force and distance balls travel. Observe bubbles floating through air and attempt to increase travel. Predict what will happen and talk about what did happen</i> | <i>Creatures Looking around the garden for creatures in the trees, leaves, ground, air. Observing their features and draw what they see. What haven't they found and why?</i> | <i>Seaside and rock pools Identify creatures from the sea and where they can be found on the beach. Look closely at shells for similarities and differences. Investigate floating and sinking</i> |
| Pre School Vocabulary | Eyes, hair, tall, bend, sit, skip, clap, draw, write, hop, run, bedtime, mealtime, toilet time, relaxing time | Fox, moth, badger, hedgehog, sun, shadow, torch, candle, wax, hot, melt, burn, firework | Soft, squashy, flexible, light, liquid, solid, stiff, bendy, solid, tough, rough, wood, stone, material | Roll, push, travel, speed, slow, slower, faster, blow, wave, float, air and wind | ladybird, insect, worm, animal, squirrel, hedgehog, mole, bird, apple tree, oak tree, plane tree, horse chestnuts, pigeon, blackbird | Fish, dolphins, sea birds, sanderlings, oystercatchers, starfish, cuttle fish, barnacle, transparent, limpet, sea horse, stingray, pollution, protect |
| Disciplinary concepts where knowledge is collected, explored, understood and evaluated: | <i>Disciplinary concepts within our planning. Where this can be found in our Pre School curriculum:</i> | | | | | |
| Methods used to answer questions | <i>Perform simple tests and ask simple questions about what they see. (Spr 1– explore materials – what are they made of? Do they float?)</i> | | | | | |
| Using apparatus and techniques | <i>Children explore, problem solve and predict. (Aut 2 use torches, pencil, paper to make simple test) Children can observe closely and say what they notice. (Sum 1 use magnifying glasses to look very closely at minibeast and say/draw what they see)</i> | | | | | |
| Data analysis | <i>Use observations to make decisions. (Spr 1 – observe effect on balls as they roll on slope and decide which have travelled furthest)</i> | | | | | |
| Using evidence to develop explanations | <i>Use observations to talk about the world around them and answer questions. (Au 1t – explore the body parts we have and how they are useful, link to how everyone keeps themselves healthy)</i> | | | | | |
| YR Knowledge | My body and Me <i>What body parts do I have and what do they do? Are our bodies all the same? Teach pupils and parents about health regular exercise healthy eating tooth brushing sleep routines keeping safe safety out and about limited screen times</i> | Weather and Seasons <i>Observe and interact with natural processes, such as ice melting (snow, ice, hail), a sound causing a vibration (thunder, instruments like a drum) Identify the sun as a light source and discuss how clouds can block the light to cast a shadow.</i> | Kings and Queens <i>Explore materials associated with crown jewels and compare to non-precious natural and manmade materials</i> | Transport and Moving <i>Compare forces used for movement in transport - e.g. hot air, wind power, pushing and pulling. Use magnets to explore forces and observe repulsion and attraction.</i> | Living and Growing <i>Name, group and describe some plants and animals' in our locality. Why is it important to grow plants and trees? Do animals always look the same? (life cycle of a butterfly compared to humans)</i> | The Sea <i>Identify causes of sea pollution and how we protect sea life. Look at the local lighthouse and discuss the way the light can be seen from a distance. Explore light travelling through transparent materials (torches, tissue, cellophane, card) discuss light and casting of shadows.</i> |
| YR vocabulary | Skull, lungs, heart, body, skin, blood, bones, vitamins, brain, confident, anxious, delighted | Light, dark, shadow, block, shade, transparent, opaque | Shiny, heavy, precious, golden, strong, natural, manmade, dense, light, flexible | Push, pull, force, attract, repulse, speed, brake, direction | Oak, birch, ash, beech, willow, oxygen, plum, apple, nettle, cow parsley, dandelion, clover | Creatures, starfish, cuttle fish, barnacle, transparent, limpet, sea horse, stingray, pollution, protect |

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| Disciplinary concepts where knowledge is collected, explored, understood and evaluated: | | <i>Disciplinary concepts within our planning. Where this can be found in our YR curriculum:</i> | | | | |
| Methods used to answer questions | | Perform simple tests and ask simple questions about what they see. (Aut – investigate who shadows are cast) | | | | |
| Using apparatus and techniques | | Children explore, problem solve and predict. (Sum – identify causes of sea pollution, explore the problem and think about how we can help) Children can observe closely and say what they notice. (Spr – use magnets to explore and observe repulsion and attraction) | | | | |
| Data analysis | | Use observations to make decisions. (Sum – observe different animals and make decisions about how to group them) | | | | |
| Using evidence to develop explanations | | Use observations to talk about the world around them and answer questions. (Aut – explore the body parts we have and how they are useful, link to how everyone keeps themselves healthy) | | | | |
| Year 1 Knowledge | The Human Body Naming parts of the body, Eyes and sight, Ears and hearing, touch, taste and smell, understanding sensory impairment | Animals and their Needs Wild and tame, taking care of pets, Baby animals (including humans), Describing and grouping animals | Seasons and Weather The four seasons, tools to record the weather , daily weather and weather forecasts, weather symbols, weather around the world, Floods and Hurricanes | Taking Care of the Earth The Earth's natural resources, Conservation of natural resources, logging, recycling, how pollution is caused and can be prevented | Plants what plants need to grow, the parts and functions of plants , food production, flowers and seeds, deciduous and evergreens, farming, crops, pesticides, harvest, from field to supermarket | Materials and Magnets What is magnetism , magnetic attraction, use of magnets, classification of materials, |
| Year 1 Vocabulary | Body, senses, sense organ, impairment, joints, vision, purpose, limbs, sight, parts of the eye, parts of the ear, taste buds, touch, smell | Wild, tame, pet, safe, kitten, puppy, omnivore, carnivore, herbivore, habitats, amphibians | Season, seasonal, spring summer, autumn, winter, wind, rain, sun, snow, axis, orbit, tilt, rain gauge, wind vane, thermometer, cloud cirrus, cumulus, stratus precipitation, forecast, predict, meteorologist hurricane | Care, earth, world, resources, natural, logging, flooding, pollution, energy, oil, gas, mining, renewable, non-renewable, limited, unlimited, logging, felled, deforestation, flooding, biodiversity, extinction, erosion, recycle, pollution, contamination | Environment, adapted, Tropical, plants, flowers, deciduous, evergreen, bushes, roots, anchor, absorb, Minerals, stem, leaves, energy transport, Seeds, reproduce, disperse, survive, gravity, Pepper pot, germination, shoot, prediction, aim, method, Rate, crops, pests, weeds, pesticide, Harvest, package, transport | Magnet, magnetic field, magnetism, magnetic, non-magnetic, attract, opposite, poles, force, pull, push, attract, repel, invisible force, object, passing through, prediction, results, conclusion, North & South Pole |
| Science Enquiry | Phizzi Light and. Sound-Bear Cave | Phizzi Electricity – Static Butterflies | | Phizzi problem Solving – Magnetic Fishing Game | | Phizzi Forces – Magnetic materials |
| Disciplinary concepts where knowledge is collected, explored, understood and evaluated: | | <i>Disciplinary concepts within our planning. Where this can be found in our Year 1 curriculum:</i> | | | | |
| Methods used to answer questions | | Ask simple questions and think about how to find an answer. (Spr – How is pollution caused and how can we find an answer?) Recognise that questions can be answered in different ways. (Aut – explore how animals can be grouped and that this can be done in different ways) | | | | |

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| Using apparatus and techniques | | Using simple equipment, children observe closely what they can see. <i>(Sum – magnetism, experimenting and observing what happens)</i> Perform simple tests to investigate. <i>(Sum – what plants need to grow)</i> Identify and classify. <i>(Aut – explore how animals can be grouped and that this can be done in different ways)</i> | | | | |
| Data analysis | | Using their observations and ideas, they suggest answers to questions. <i>(Spr – exploring seasons and the weather, suggesting ideas for flooding)</i> | | | | |
| Using evidence to develop explanations | | Gather and record data to help answer questions. <i>(Sum – magnetism, experimenting and observing what happens)</i> | | | | |
| Year 2 Knowledge | Living Things and the Environment A Habitats, meadow habitats, underground habitats, rainforest habitats, desert habitats, plants | Living Things and the Environment B Food chains, oceans and undersea habitats, deep ocean habitats, over fishing and habitat destruction and damage | The Human Body The skeletal and muscular systems, exercise, digestive system and healthy eating, circulatory system, nervous system, and preventing illness, germs, diseases, vaccinations, Edward Jenner (smallpox), Louis Pasteur (milk) | Matter - Solids, Liquids, Gases Concepts of atoms, states of matter, materials and their properties, suitability of materials for particular purposes, manipulation of materials | Electricity What is electricity, static electricity, safety, Circuits, conductive and non-conductive materials, | Astronomy Orbit and rotation, sun, moon, planets, stars, Earth, our solar system, what's inside the Earth, surface of the Earth, volcanoes, geysers, rocks and minerals |
| Year 2 Vocabulary | Living, habitat, adapt, environment, survive, damage, tropical, barren | Habitat, adapt, environment, food chain, producer, consumer, predator, prey, oceans, over fishing, deforestation, damage, ocean floor, ocean trench, sustainable, pollution | Bone, skeleton, joint, organs, x-ray, muscle, cardiac, heart, digestion stomach, oesophagus small /large intestine, mouth, tongue, nutrition, circulate, lungs, veins, arteries, oxygen, diet, balanced, bacteria, hygiene | Scientists, atoms, molecule, solid, liquid gas, magnify, microscope matter, bonds, expand, purpose, suitability, properties, magnetic, waterproof, absorbent, transparent, opaque | Electricity, energy, Appliance, battery store, Mains, wire, plug socket power station, generator pylon, underground electricity, static, plasma ball, lightning, current, charge, investigation, predict, results, conclusion, safety, dangerous, shock, caution, frayed, supervision, circuit, flow, + positive, negative, wire, clips, buzzer, light bulb, switch, motor, connect, disconnect, component diagram, symbol, conduct, conductor, insulate, insulator | Planet, solar system, orbit, rotate, axis, day, night, seasons, waxing, waning, new moon, crescent, constellation, layer, crust, mantle, core, volcano, eruption, pressure, lava, igneous, sedimentary, metamorphic, |
| Science Enquiry | Phizzi Forces- Floating and Sinking | Phizzi Forces- Floating and Sinking | Phizzi Sound and Light - Curtains | Phizzi Forces- Sinking Treasure | Phizzi Electricity – Closing the Gap | Phizzi Earth and. Space- Astonappy |
| Disciplinary concepts where knowledge is collected, explored, understood and evaluated: | | Disciplinary concepts within our planning. <i>Where this can be found in our Year 2 curriculum:</i> | | | | |

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| Methods used to answer questions | | Ask simple questions and think about how to investigate to find a possible answer. <i>(Sum – electricity – what conducts electricity?)</i> Recognise that questions can be answered in different ways and make predictions to answer questions. <i>(Aut – living things and the environment, how can we create food chains? How can we look after Earth?)</i> | | | | |
| Using apparatus and techniques | | Using simple equipment, children observe closely what happens in an experiment. <i>(Spr – states of matter, exploring properties eg. Magnetic, waterproof, transparent)</i> Perform simple tests to investigate a scientific question. <i>(Sum – electricity – what conducts electricity?)</i> Identify and classify using different criteria. <i>(Spr – states of matter, exploring properties)</i> | | | | |
| Data analysis | | Using their observations and ideas, they suggest answers to questions. Gather information from observations and explain what it shows. <i>(Aut – habitat study and what the habitat features can tell us about animals needs)</i> | | | | |
| Using evidence to develop explanations | | Gather and record data to help answer questions. <i>(Spr – states of matter, exploring properties eg. Magnetic, waterproof, transparent)</i> Answer questions with simple explanations. | | | | |
| Year 3 | Cycles in Nature | The Water Cycle | Rocks, fossils and Soils | The Human Body | Light and Optics | Magnetism |
| Knowledge | Life Cycles- The life cycle: birth, growth, reproduction, Butterflies life cycle Plants life cycle, amphibians life cycle, seasons, migration | Evaporation, ground water, condensation and precipitation, water vapour in the air, clouds | Compare different types of rocks, investigate rock hardness, how fossils are made? What is soil, permeability | Cells, organ systems excretory system, senses, taking care of your body, a healthy diet, vitamins and minerals | The speed of light, transparent and opaque objects, reflection, mirrors: plane, concave, convex, use of mirrors in telescopes and some microscopes, using prisms, using lenses | Magnets around us, lodestones, magnetic poles, magnetic field law of magnetic attraction, north and south magnetic poles, orienteering using a magnetised needle |
| Year 3 | Vocabulary | Evaporation, water vapour, cirrus clouds, cumulus clouds, stratus clouds, condensation, droplets, precipitation, ground water, humidity, particles, infiltration, solid, liquids, gas | Geologist, minerals, sedimentary, igneous, metamorphic, flint, chalk, organic matter humus, topsoil, subsoil bedrock, permeability | Cells, microscope, microscopic tissue organs, carbohydrates, proteins, digestive system, vitamins, minerals, tissue, teeth molars, premolars, canines, incisors, corrosive, chemicals, acid, saliva | Light source, prism, refraction, dispersed, reflect, reflective, unreflective, absorb, predict, investigate, retina, cornea, pupil, lens, iris, optic nerves, UVA rays, UVB rays, protect, transparent, translucent, opaque | Exert, force, attract, repel, contact forces, non-contact forces, magnetic field, magnetic force, North & South Poles, compass, magnetised, classify, predict, evaluate, variables, fair test, conclusion |
| Science Enquiry | Phizzi Forces – Magnetic Strength | Phizzi Forces – Making Contact | Phizzi Earth and Space – Space Soil (Year 4) | Phizzi Forces – Silppery Shoes | Phizzi Light and Sound- Sun Shadows or Periscope | Phizzi Forces -Attract or Repel |
| Disciplinary concepts where knowledge is collected, explored, understood and evaluated: | Disciplinary concepts within our planning. <i>Where this can be found in our Year 3 curriculum:</i> | | | | | |
| Methods used to | Ask relevant questions and using different types of scientific enquiries to answer them. <i>(Spr – comparing different types of rocks, how can they be grouped?)</i> | | | | | |

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| answer questions | Identify differences, similarities or changes related to simple scientific ideas and processes. <i>(Sum – Light and optics, how light changes if it is through transparent or opaque object, reflected off mirror, concave, convex surface)</i> | | | | | |
| Using apparatus and techniques | Set up simple practical enquiries, comparative and fair tests. <i>(Spr – Science Enquiry session – investigation slippery shoes)</i> Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. <i>(Spr – Science Enquiry session – investigation slippery shoes)</i> | | | | | |
| Data analysis | Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. <i>(Spr – Rocks and soils, investigating and recording what soil permeability is)</i> Gather, record, classify and present data in a variety of ways to help in answering questions. | | | | | |
| Using evidence to develop explanations | Use straightforward scientific evidence to answer questions and to support their findings. Use their findings to write explanations using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. <i>(Aut – Science Enquiry session – magnetic strength investigation)</i> Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. <i>(Sum - magnetism investigation)</i> | | | | | |
| Science Enquiry | Phizzi Light and Sound- Investigating Shadows | Phizzi Light and Sound – Sun Shadows | Phizzi Electricity – Spin yourself Silly | Phizzi Electricity – Christmas Lights | Phizzi Electricity – Turn it Up | Phizzi Electricity – Electrical Games |
| Disciplinary concepts where knowledge is collected, explored, understood and evaluated: | <i>Disciplinary concepts within our planning. Where this can be found in our Year 6 curriculum:</i> | | | | | |
| Methods used to answer questions | Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. <i>(Aut – Science Enquiry session – investigation investigating shadows)</i> | | | | | |
| Using apparatus and techniques | Set up practical enquiries, comparative and fair tests. <i>(Spr – Plants – looking at how water travels and capillary action)</i> Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. | | | | | |
| Data analysis | Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. <i>(Aut – Science Enquiry session – investigation sun shadows)</i> Using test results, make predictions to set up further comparative and fair tests | | | | | |
| Using evidence to develop explanations | Identify scientific evidence that has been used to support or refute ideas or arguments. <i>(Aut – Classification, exploring how animals are grouped and studying taxonomy and Carl Linnaeus)</i> Report and present findings from enquiries, including conclusions, causal relationships and explanations of a degree of trust in results, in oral and written forms such as displays and other presentations. Link evidence and conclusions to what we can learn about the wider world. <i>(Sum – Evolution and inheritance, linking Charles Darwin to knowledge about Victorians and exploring genes and DNS with what they know about what they have inherited)</i> | | | | | |