

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
EYFS Knowledge	My body and Me 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	Weather and Seasons 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.	Kings and Queens Explore materials associated with crown jewels and compare to non precious natural and manmade materials	Transport and Moving 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.	Living and Growing 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)	The Sea 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.
EYFS 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
Disciplinary concepts where knowledge is collected, explored, understood and evaluated:	<i>Disciplinary concepts within our planning. Where this can be found in our EYFS curriculum:</i>					
Methods used to answer questions	<i>Perform simple tests and ask simple questions about what they see. (Aut – investigate who shadows are cast)</i>					
Using apparatus and techniques	<i>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)</i>					
Data analysis	<i>Use observations to make decisions. (Sum – observe different animals and make decisions about how to group them)</i>					
Using evidence to develop explanations	<i>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)</i>					
Year 1 Knowledge	The Human Body	Animals and their Needs	Seasons and Weather	Taking Care of the Earth	Plants	Materials and Magnets

	Naming parts of the body, Eyes and sight, Ears and hearing, touch, taste and smell, understanding sensory impairment	Wild and tame, taking care of pets, Baby animals (including humans), Describing and grouping animals	The four seasons, tools to record the weather , daily weather and weather forecasts, weather symbols, weather around the world, Floods and Hurricanes	The Earth's natural resources, Conservation of natural resources, logging, recycling, how pollution is caused and can be prevented	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	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. <i>(Spr – How is pollution caused and how can we find an answer?)</i> Recognise that questions can be answered in different ways. <i>(Aut – explore how animals can be grouped and that this can be done in different ways)</i>					
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	Gather and record data to help answer questions. <i>(Sum – magnetism, experimenting and observing what happens)</i>					

<i>develop explanations</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:	<i>Disciplinary concepts within our planning. Where this can be found in our Year 2 curriculum:</i>					
Methods used to	Ask simple questions and think about how to investigate to find a possible answer. (Sum – electricity – what conducts electricity?)					

answer questions	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 Knowledge	Cycles in Nature Life Cycles- The life cycle: birth, growth, reproduction, Butterflies life cycle Plants life cycle, amphibians life cycle, seasons, migration	The Water Cycle Evaporation, ground water, condensation and precipitation, water vapour in the air, clouds	Rocks, fossils and Soils Compare different types of rocks, investigate rock hardness, how fossils are made? What is soil, permeability	The Human Body Cells, organ systems excretory system, senses, taking care of your body, a healthy diet, vitamins and minerals	Light and Optics 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	Magnetism 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	Reproduce, fertilise, anther, pollen, ovule, mature, ripen, migrate, sprout, hatchling, frog - spawn, metamorphosis, hibernation	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 answer questions	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> 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>					
Year 4 Knowledge	Classification of Animals Cold-blooded or warm-blooded, vertebrates or invertebrates, classification groups, insect, arachnids, molluscs, animal research investigation	The Human Body The muscular system, the skeletal system, the nervous system, Eyes Ears	States of Matter Solids and liquids, gases, melting and cooling, evaporation and condensation, changes of state in the water cycle	Sound How sound travels, sound waves, speed of sound, pitch, intensity, how the ear works	Electricity Static electricity, electric current, electric circuits, and experiments with simple circuits closed circuit, open circuit, short circuit, conductors and insulators, electromagnets: how they work and common uses Using electricity safely	Astronomy The Big Bang theory, the Universe, our Solar System, Gravity, the moon and our galactic neighbourhood
Year 4 Vocabulary	Organism, vertebrate, invertebrate, spinal-column, exoskeleton, endoskeleton, cold blooded, warm blooded, insect, arachnids, molluscs, diversity	Skeleton, cranium, vertebrate, ligaments, tendons, cartilage, joints, marrow, muscles, voluntary, involuntary, nervous system, nerves, x-ray, tendons, contract, relax, ear/eye vocabulary	Solid, liquid, gas, state, particles, thermometer observation, fair test, evaporation, condensation, molecules water vapour, precipitation, transpiration	Vibration, compress, decompress, ear drum, pitch, volume intensity, speed, sound, barrier, high/low pitch, larynx, ear canal, ear drum, auditory nerve, anvil, stirrup	Electricity, sources, batteries, mains, rechargeable, fossil fuels, pylon, pollution, environment, wind turbine solar power, environment, hydroelectricity, energy efficient, cells, wires, bulbs, buzzers, circuit, battery, component, current, static, force, atom, electron, proton, neutrons, attract, repel, material, insulator, conductor, flow, electromagnet	Universe, galaxy, planet, star, Milky Way, expanding, Andromeda, orbit, rotate, axis, seasons, waxing, waning, crescent, gravity, force, tides, asteroid belt, inner planets, outer planets
Science Enquiry	Phizzi Light and Sound – Sound Circus	Phizzi Light and Sound – String Telephones	Phizzi Light and Sound – Can you hear me?	Phizzi Light and Sound – Investigating Pitch	Phizzi Electricity - Closing the Gap	Phizzi Earth and Space – Moon Phases or Keplers Laws (Year 5)
Disciplinary concepts where	Disciplinary concepts within our planning. <i>Where this can be found in our Year 4 curriculum:</i>					

knowledge is collected, explored, understood and evaluated:						
Methods used to answer questions	Ask relevant questions and using different types of scientific enquiries and methods to answer them. Identify differences, similarities or changes related to simple scientific ideas and processes.					
Using apparatus and techniques	Set up simple practical enquiries, comparative and fair tests. 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 – States of Matter investigation to show evaporation in the classroom and condensation on a cold can of drink from the freezer)</i>					
Data analysis	Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. <i>(Spr – Science Enquiry session – investigating pitch)</i> Gather, record, classify and present data in a variety of ways to help in answering questions.					
Using evidence to develop explanations	Use scientific evidence to answer questions and to support their findings. <i>(Aut – Classification of animals, using research to group animals eg. Exoskeleton, cold blooded)</i> Use their findings to write explanations using 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 – string telephones)</i> Use results to draw simple conclusions, suggest improvements and raise further questions.					
Year 5 Knowledge	The Human Body Circulation and Respiration. The circulatory system, the heart, what is blood and why do we need it? The lungs and smoking William Harvey's pioneering work	Chemistry Basic terms and concepts Atoms, properties of matter, cutting a cube, different kinds of atoms, atom elements and solutions.	States of Matter Compare and group states of matter Changing states of matter Research states of matter and how it changes using condensation, evaporation, freezing, boiling	Forces Gravity, Air resistance, water resistance and friction, pulleys, gears and levers	Life cycles and Reproduction Asexual reproduction, sexual reproduction, seeds, flowers, fertilisation, reproduction in animals, growth stages.	Meteorology Weather and climate, clouds, the atmosphere, how the sun and earth heat the atmosphere, air movement, wind direction, cold and warm fronts, forecasting the weather
Year 5 Vocabulary	Circulation, respiration, oxygenated, deoxygenated, arteries, capillaries, diaphragm, carbon dioxide, oxygen, nutrients, haemoglobin, platelets	Atom, particle, proton, neutron, electron, positive, negative, substance, element, properties, solution, solvent, soluble, insoluble, solute	Porous, weight, mass Newtons, gravity, density, mass, volume, solution, molecule, dissolve, solvent, solute, saturate, soluble, solution ,filtering, sieving, particles, magnetic, evaporation	Force, push, pull, increase, decrease, gravity, friction, air/water resistance streamline, variable, lever, pulley, gear, fulcrum, pivot	Asexual, non-sexual, reproduction, cell division, cloning, spores, regeneration corm, fern, moss, liverwort, tubers, propagation, artificial sepals, pollination, gamete, stamen, anther, filament, pollen grains, pistil, stigma, style, ovary, ovule, fertilisation, embryo, dispersed, digest, germination, photosynthesis, sperm, testes, ovaries, fertilisation, spawning,	Meteorology, meteorologist, layers, atmosphere, outermost, exospheres, thermosphere, mesosphere, stratosphere, troposphere, zone, ultraviolet radiation, meteors, ionosphere, heat energy, anemometer, prevailing winds, humidity, electrons, static electricity, tornadoes, updraft, downdraft, spiral, hurricane, low pressure, eye, cirrus, stratus, cumulonimbus

					zygote, uterus, fallopian tube, foetus, gestation gametes	
Science Enquiry	Phizzi Forces – Balloon race	Phizzi Forces - Slippery Shoes	Phizzi Forces -Planetary Landings	Phizzi Forces – Simple Machines	Phizzi Forces – Pendulum Swing	Phizzi Earth and Space Thermal Properties of materials
Disciplinary concepts where knowledge is collected, explored, understood and evaluated:	Disciplinary concepts within our planning. <i>Where this can be found in our Year 5 curriculum:</i>					
Methods used to answer questions	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. <i>(Spr – Forces – looking at air resistance, water resistance, friction and the science enquiry lesson – Simple Machine)</i>					
Using apparatus and techniques	Set up simple practical enquiries, comparative and fair tests. <i>(Spr – States of Matter – looking at condensation, evaporation, freezing and boiling)</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>(Sum – Science Enquiry session – investigation pendulum swing)</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 – looking at evidence that explains why smoking is bad for you)</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.					
Year 6 Knowledge	Chemistry Matter and Change Atoms, John Dalton and the Elements, The Periodic Table, Molecules, Compounds, Physical and chemical changes	Classification of Living Things Why classify – classification keys, Classifying organisms (the five kingdoms), cells, plant and animal cells, fungi, protists, prokaryotes, taxonomy, Latin names, micro-organism - vertebrates	Plants Revise the parts of plant, the lifecycle of a flowering plant, photosynthesis, vascular and non-vascular plants	Light and Electricity Travel of light, light sources construction of series circuits, components, designing useful circuits	The Human Body Human growth stages, adolescence and puberty, The human reproductive system, The endocrine system, glands, circulatory system	Evolution and Inheritance Fossils, adaptation, characteristics passing through generations, Mary Anning, Alfred Wallace, Charles Darwin, Darwin's sketches of finches
Year 6 Vocabulary	Atom, molecule, proton, neutron, electron, nucleus, periodic table, elements, neutral, compound, reversible, irreversible, reaction	Classification, organism, plant, animal, fungus, protists, prokaryotes, cell, nucleus, cytoplasm, mitochondria, vacuole, chloroplast, bacteria, chlorophyll	botanist, roots, stem, flower, carbon dioxide, chlorophyll, photosynthesis, xylem, phloem, transpiration, capillary action, stomata, vascular plant, non-vascular plant, stalk, leaves,	Light source, travel, straight line, reflect, reflection, shadow, opaque, transparent, translucent, voltage, circuit, component, variation	Growth stages, embryo, foetus, uterus, infant, puberty, metabolism, adolescence, hormones, glands, growth spurt, puberty, metabolism, adolescence, endocrine	Fossil, sedimentary, palaeontologist, adolescence, reproduction, fertilised, fallopian tubes, uterus, vagina, menstruation, sperm, testes, scrotum,

			pollination, fertilisation, seed dispersal, germination, moss, spores, germinate, eggs, sperm, fertilise, capsule, fronds, water, sunlight energy, sugars, starch, nutrients, moist, moss		system, duct glands, ductless glands, secrete, perspiration, puberty thyroid, pancreas, digestive system, insulin, diabetes, adrenal, adrenaline	penis, semen, urethra, chromosome, genes, genetic, variation, evolution, mutation, adaption, maladaptation, species, characteristics, evolve, generations
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:	Disciplinary concepts within our planning. <i>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>)					