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SCIENCE LEARNING JOURNEY

Beit Shvidler Primary School

YEAR 6

TRANSITION TO SECONDARY

Electrifying!

We're Evolving

Classifying Critters

Super Scientists

Growing Up and Growing Old

Let's Get Moving

Let it Shine

Staying Alive

YEAR 5

Circle of Life

Out of this World

Brilliant Bubbles

Power It Up

Looking at States

Teeth and Eating

Living Things

What's That Sound?

YEAR 4

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Mirror, Mirror

Earth Rocks

How Does Your Garden Grow?

Food and our Bodies

Young Gardeners

YEAR 3

Move It

Material Monster

Healthy Me

Mini Worlds

YEAR 2

On Safari

Treasure Island

Polar Adventures

Celebrations

Who am I?

YEAR 1

Animals

Recycling

EYFS

Science

	Topic	Learning Objective	Vocabulary	Skills
Year 1	Who Am I?	Identify, name, draw and label the basic parts of the human body	Backbone, Ear lobe, Eye socket, Elbow, Hips, Joints, Ribs, Thigh, Tongue, Vertebrae, Nails	Identifying and classifying
	Celebrations Weather (cross-curricular link with Geography)	To distinguish between an object and the material from which it is made. To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. To describe the simple physical properties of a variety of everyday materials. To identify and describe the basic structure of a variety of common plants, including roots, stem/trunk, leaves and flowers. To observe changes across the four seasons To observe and describe weather associated with the seasons and how day length varies	Illuminate, Light source, Opaque, Reflect, Translucent, Transparent, Shadow, Sound, Source of sound, Vibration	To observe things using simple equipment. To identify and classify. To perform simple tests. To use observations and ideas to suggest answers to questions. To gather and record data to help in answering questions.
	Polar Adventures	To name animals that are birds, fish and mammals. To name common animals that are carnivores, herbivores and omnivores. To describe and compare different common animals. To describe the properties of everyday materials that are transparent, translucent, opaque, waterproof, flexible. To compare and group materials that are transparent, translucent, opaque, waterproof, flexible.	Arctic, Antarctic, Carnivore, Herbivore, Omnivore, Flexible, Waterproof, Habitat	To ask questions and recognise that they can be answered in different ways observing closely e.g. ice activities. To perform simple tests. To identify and classify different materials and animals. To use their observations and ideas to suggest answers to questions e.g. ice activities.
	Treasure Island	To identify and name a variety of plants. To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. To identify and name a variety of animals including fish, amphibians, reptiles, birds and mammals. To describe and compare the structure of a fish with humans and some other animals. To describe the simple physical properties of a variety of everyday materials.	Float, Island, Sink. Waterproof, Windproof, Evergreen	To ask simple questions and recognise that they can be answered in different ways. To observe closely, using simple equipment. To perform simple tests. To identify and classify. To use their observations and ideas to suggest answers to questions. To gather and record data to help in answering questions.
	On Safari	To identify and name a variety of common invertebrates. To identify and name a variety of common animals that are carnivores, herbivores and omnivores. To describe and compare the structure of a variety of common invertebrates.	Abdomen, Antennae, Detritivore, Food chain, Exoskeleton, Habitat, Head, Insect, Invertebrate, Thorax, Vertebrate	To ask simple questions and recognise that they can be answered in different ways. To observe closely. To perform simple tests. To identify and classify. To gather and record data to help in answering questions. To describe the simple physical properties of a variety of everyday materials.
	Holiday	To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.	Habitat, Sunburn, Marine biologist, Pollution	To ask simple questions and recognise that they can be answered in different ways. To observe closely, using simple equipment. To perform simple tests.

		To identify and name a variety of common animals that are carnivores, herbivores and omnivores. To describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) distinguish between an object and the material from which it is made. To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. To describe the simple physical properties of a variety of everyday materials. To describe and compare the structure of a fish with humans and some other animals.		To identify and classify. To use observations and ideas to suggest answers to questions. To gather and record data to help in answering questions.
Year 2	Healthy Me	To describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	Exercise, Healthy, Hygiene, Germ	To observe closely. To perform simple tests. To identify and classify. To use observations and ideas to suggest answers to questions. To gather and record data in answering questions.
	Materials Monster	To identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. To find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Material, Properties	To observe closely. To perform simple tests. To identify and classify. To use observations and ideas to suggest answers to questions. To gather and record data to help in answering questions.
	Mini Worlds	To notice that animals, including humans, have offspring which grow into adults. To explore and compare the differences between things that are living, dead, and things that have never been alive. To identify that most living things live in habitats and micro-habitats to which they are suited. To describe how different habitats provide for the basic needs of different kinds of animals and plants. To describe how animals obtain their food from plants and other animals. To use the idea of a simple food chain. To identify and name different sources of food.	Magnifying lens, Microscope, Observe	To observe closely. To identify and classify. To use observations and ideas to suggest answers to questions. To gather and record data to help in answering questions.
	Move It	To find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Bend, Pull, Push, Squash, Stretch	To observe closely. To perform simple tests. To identify and classify. To use observations and ideas to suggest answers to questions. To gather and record data to help in answering questions.
	Young Gardeners	To identify and name a variety of plants. To observe and describe how seeds grow into mature plants. To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. To identify and compare the suitability of a variety of everyday materials, including word, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	Bulb, Corms, Germinate, Properties, Root, Stem, Tuber	To ask simple questions and recognise that they can be answered in different ways. To observe closely, using simple equipment. To perform simple tests. To identify and classify. To use observations and ideas to suggest answers to questions. To gather and record data to help in answering questions.
	Little Masterchefs	To find out about and describe the basic needs of humans, for survival (water, food and air).	Hygiene	To observe closely. To perform simple tests. To identify and classify.

		To describe the importance for humans of eating the right amounts of different types of food, and hygiene. To observe and describe how seeds and bulbs grow into mature plants. To identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.		To use observations and ideas to suggest answers to questions. To gather and record data to help in answering questions.
Year 3	Earth Rocks			
	1.1 Hard Rock Café	To explore different kinds of rocks and their properties.	Mineral, Rock, Permeable, Crystals, Impermeable, Ore	To collect and record data from observations and tests.
	1.2 A Family Affair	To explore different types of rock families. To recognise that soil comes from rock.	Igneous, Magma, Sediment, Sedimentary, Humus, Names of some rocks, e.g. granite, marble, sand, clay, limestone.	To set up and carry out simple, practical activities and fair tests.
	1.3 Fantastic Fossils	To find out how fossils are formed.	Fossil, Extinct, Palaeontologist	To use results to draw conclusions and suggest improvements or new questions.
	Food and our Bodies			
	2.1 Food for Thought	To find out about healthy and balanced diets.	Nutrients, Protein, Fats, A balanced diet, Carbohydrates	To gather, record and present data in different ways.
	2.2 Funny Bones	To describe the basic parts of the skeletal system.	Skeleton, Exoskeleton, Femur, Humerus	To observe and compare animals with and without skeletons.
	2.3 We Like to Move It	To look at joints, and how bones and muscles help us move.	Contract, Relax, Muscle, Joint	To make systematic and careful observations.
	Mirror, Mirror			
	3.1 Time to Reflect	To describe the reflections when light is reflected from surfaces. To recognise that you need light in order to see things and that dark is the absence of light.	Dull, Shiny, Reflect, Mirror, Observation, Explanation, Light source	To record observations and make sense of them.
	3.2 Shadow Shapes	To recognise that light from the sun can be dangerous and that there are ways to protect their eyes. To describe how shadows are formed.	Shadow, Transparent, Translucent, Opaque, Description	To design and carry out a fair test.
	3.3 Magic Mirrors	To make a simple mirror and create a list of the key uses.	Mirror, Mesopotamia, Coating, Kaleidoscope, Timeline	To research and gather some key facts about how mirrors have been made over the centuries.
	How Does Your Garden Grow?			
	4.1 Plant Parts	To identify and describe the functions of the different parts of flowering plants – roots, stem, leaves and flowers. To investigate how water is transported within plants.	Root, Stem, Flower, Leaves	To set up simple practical enquiries.
	4.2 Long Live Plants	To explore exactly what plants need to live and grow, and how these requirements vary from plant to plant.	Veins, Germinate	To ask relevant questions and use different types of scientific enquiry to answer them.
	4.3 Flower Power	To explore the important role that flowers play in the life cycles of plants, from pollination to seed spreading.	Pollen, Pollination, Ovary, Sepals, Stamen, Carpel, Stigma, Style, Ovule, Petal	To record the findings using drawings and labelled diagrams.
	Opposites Attract			

	51. Magnetic Forces	To compare how things move on different surfaces. To notice that some forces need contact between two objects, but magnetic forces can act at a distance. To observe the forces that magnets produce.	Force, Magnet, Contact, Non-contact	To report and present findings from enquiries.
	5.2 Is It Magnetic?	To name some materials that magnets can attract and some they cannot.	Attract, Repel, Non-magnetic, Magnetic, Iron	To list at least ten uses of magnets in everyday life.
	5.3 Poles to Pole	To explain what a magnetic pole is and what it can do.	Pole, Magnetic North, Compass, Prediction	To predict whether two magnets will attract or repel each other.
Year 4	What's That Sound?			
	1.1 What a Racket!	To observe and name a variety of sources of sound. To notice that we hear with our ears. To identify how sounds are made, associating some of them with something vibrating. To find patterns between the volume of a sound and the strength of the vibrations that produce it. To identify similarities and differences between sounds made in different ways.	Vibration, Volume	To make systematic and careful observations, record findings, identify differences, similarities or changes. To carry out simple practical enquiries, comparative and fair tests, take systematic and careful observations, record findings, identify differences, similarities or changes.
	1.2 Turn It Up and Down	To recognise that sounds get fainter as the distance from the sound source increases. To identify patterns in data.	Volume, Vibration	To use results to form conclusions.
	1.3 Making Music	To explore various ways of making sounds with different pitches. To find patterns between the pitch of a sound and the features of the object that produced it. To use the instruments designed in class to play a recognisable tune.	Pitch	To use evidence to answer questions.
	Living Things			
	2.1 Guess who?	To explain how living things can be classified. To recognise how a simple key helps identify living things. To observe key features of living things.	Classify, Key, Organism	To ask questions that can be used to construct a key.
	2.2 Habitats	To examine invertebrates in their environment. To identify invertebrates with a simple key. To recognise that environments change. To understand some of the human impacts on specific habitats.	Habitat, Invertebrate, Insect, Millipede, Centipede	To make careful observations.
	2.3 Which Kingdom?	To understand that living things can be classified using a key. To be able to classify the five vertebrate groups based on physical features. To be able to classify plants as flowering or non-flowering. To devise and use a key to identify common trees from their leaves.	Vertebrate, Invertebrate, Insect, Mammal, Bird, Amphibian, Reptile, Fish, Flowering plant	To ask relevant questions in order to sort and classify.
	Looking at States			
	3.1 What's the Matter?	To compare materials. To group materials together, based on observations on them to recognise that	Solid, Liquid, Gas, Matter	To record what has been learnt in a variety of ways.

		some materials, for example water, may exist in solid, liquid and gas states. To make careful observations about how matter changes from solid to liquid. To read scales accurately.		
	3.2 Ziggy's Party	To observe that materials change state when they are heated and cooled. To recognise when these processes, called freezing, boiling and melting, take place. To measure and research temperatures in degrees Celsius. To explore patterns in freezing and melting.	Temperature, Thermometer, Melting, Freezing, Melting point, Freezing point	To use research skills to find out about temperature.
	3.3 Going Round In Circles	To recognise when evaporation and condensation take place. To explore what happens to a material that is evaporating or condensing. To identify the part played by evaporation and condensation in the water cycle.	Evaporation, Boiling point, Condensing, Water cycle, Boiling	To make careful observations and record these.
	Teeth and Eating			
	4.1 Tremendous Teeth	To classify and identify different types of teeth and their functions. To recognise why and how we must take good care of them.	Molar, Incisor, Canine, Enamel, Decay	To make observations and form conclusions.
	4.2 Have You Got Guts?	To describe the functions of parts of the human digestive system.	Digestion, Mouth, Oesophagus, Stomach, Small intestine, Large intestine, Anus, Nutrients, Energy	To make observations and record findings using scientific language and labelled diagrams.
	4.3 The Deadly and the Dead	To recognise what a food chain represents. To construct and interpret a variety of food chains. To identify producers, predators and prey.	Carnivores, Herbivore, Omnivores, Molars, Incisors, Canines	To report on findings including oral and written explanations, displays or presentations of results and conclusions.
	Power It Up			
	5.1 Living with Electricity	To identify common appliances that run on electricity. To classify and record appliances as mains or battery operated. To understand the difference between mains and battery-operated appliances. To understand that electricity can be dangerous.	Battery, Bulb, Mains, Rechargeable	To set up a simple practical enquiry. To make systematic and careful observations. To draw simple conclusions.
	5.2 Let's Make Circuits	To recognise what is needed in order to make a bulb light in a circuit. To recognise and name some of the components that can be used to make a circuit. To explore patterns produced by altering circuits, making comparative tests.	Cell, Bulb, Circuit, Components, Terminals, Wires, Switch	To use results to draw simple conclusions.
	5.3 Be Alarmed!	To recognise that some materials conduct electricity. To recognise that some materials do not conduct electricity. To use a simple circuit to create a device.	Conductor, Insulator, Circuit	To apply prior learning to a problem or question.
	Brilliant Bubbles			
	6.1 I'm Forever	To identify, observe and record variables that affect bubbles.	Diluted, Concentrated, Concentration, Sphere	To set up practical enquiries and fair tests.

	Blowing Bubbles (optional)			
	6.2 Sweetie Bubbles	To test how much air sweets contain. To carry out a survey to find the best tasting sherbet.	Melt, Estimate, Gas, Carbon dioxide	To evaluate an experiment, commenting on the design and data. To present survey results and consider further questions.
	6.3 Yeasty Bubbles	To plan and carry out a fair test.	Yeast, Ferment	To identify similarities, differences and changes in results from experiments.
Year 5	Out of This World			
	1.1 The Solar System	To learn how the planets in our Solar System are organised. To use mathematics to model the dimensions of our Solar System.	Solar System, Sun, Star, Planet, sphere	To plan different scientific enquiry to answer questions – research using secondary data.
	1.2 Meet the Scientists	To describe the movement of the Earth and Moon relative to the Sun in our Solar System.	Centric, Geocentric, Heliocentric, Timeline	To identify scientific evidence that has been used to support a theory.
	1.3 Night and Day	To describe the movement of the Moon relative to the Earth. To use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	Night-time, Daytime, Orbit, Time zone, sunrise, sunset	To use simple models to explain scientific ideas.
	Material World			
	2.1 Why Materials Matter	To identify the properties of a range of materials and explain their uses.	Hard, Tough, Strong, Rigid, Elastic, Plastic, Flexible, Electrical conductor, Thermal conductor, transparency, magnetic	To plan comparative or fair tests and then take accurate measurements and make accurate observations.
	2.2 Solutions	To explore making and separating mixtures.	Solution, Solute, Solvent, Dissolve, Evaporate, Mixture, Soluble, Insoluble, Filter	To use relevant scientific language to explain their ideas.
	2.3 Making Changes	To classify changes as reversible or irreversible.	Reversible/physical change, Irreversible/chemical change, Burning	To report and present findings from enquiries.
	Circle of Life			
	3.1 Make New Plants	Describe the life processes of reproduction in some plants.	Bulb, Pollination, Fertilisation, Sexual reproduction, Asexual reproduction	Taking measurements and presenting findings from enquiries.
	3.2 Animal Behaviour	To explain the differences in the life cycles of a mammal, an amphibian, an insect and a bird.	Larva, Gestation, Metamorphosis	To report and present findings from enquiries.
	3.3 Making Babies	To describe the life process of reproduction in some animals.	Sperm, Fertilisation, Internal fertilisation, External fertilisation	To report and present findings from enquiries.
	Let's Get Moving			
	4.1 Forces of Nature	To explain some of the effects of gravity.	Gravity, Weight, Newton, Non-contact, Isaac Newton, Galileo	To plan, carry out and explain fair tests.
	4.2 It's a Drag!	To observe a variety of forces that slows things down.	Friction, Air resistance, Water resistance, Force meter, Reliable	To set up, carry out and make sense of a variety of investigations.
	4.3 Magnificent Machines	To be able to explain how levers, pulleys, springs and gears transfer force and motion.	Lever, Spring, Gear, Pulley	To design and make machines that use levers, pulleys, springs and gears.

	Growing Up and Growing Old			
	5.1 Human Timeline	To describe some of the changes that happen as humans develop. To compare and analyse the gestation periods of different animals.	Pregnant, Gestation period	To record data, report and present findings.
	5.2 Growing Pains	To look at the changes that happen as we get older, including puberty/adolescence. To collect and compare data on average heights as we grow up.	Adolescence, Puberty, Menstruation	To plan different types of scientific enquiry – survey and record data using graphs. To plan different types of scientific enquiry to answer questions – research using secondary sources
	5.3 Getting Old	To describe the changes that happen to us as we enter old age. To consider the impact of living longer.	Arthritis, Life expectancy	To plan different types of scientific enquiry to answer questions – research using secondary sources
	Super Scientists			
	6.1 How Do Scientists Work?	To describe what a scientist is and the different ways in which they work. To describe the discoveries of some famous scientists.	Scientist, Timeline, Analyse, Pattern, Survey, Classified, Fair test	To plan different types of scientific enquiry to answer questions. To plan different types of scientific enquiry to answer questions – research using secondary sources.
	6.2 Crime Solvers	To carry out some forensic tests. To use forensic tests to solve a crime.	Forensic, Fingerprint, Chromatography, Microscope, DNA, Evidence	To identify scientific evidence that has been used to support or refute ideas or arguments. To record data and results, report and present findings, including conclusions, causal relationships and explanations.
	6.3 Spread the Word	To identify and choose good ways of letting others know about science in the news. To plan and organise a science fair.	Debate, Blog, News, Science fair	To report and present findings in oral and written forms such as displays and other presentations.
Year 6	Classifying Critters			
	1.1 Animalia	To understand how living things can be classified into groups scientifically. To know the difference between vertebrates and invertebrates. To observe similarities and differences and use them to classify living things.	Flora, Fauna, Vertebrate, Invertebrate, Insect, Mammal, Bird, Amphibian, Reptile, Fish	To decide on the best way to present evidence.
	1.2 Is It a Plant?	To know that fungi are one of the five kingdoms of living things. To find out what yeast needs to live. That moulds are a type of fungi, as is yeast. That microbes and fungi can be helpful and harmful.	Fungi, Mushroom, Toadstool, Fermentation, Microbe, Bacteria	To interpret observations and use them to develop explanations.
	1.3 Give Me Five	To explore the reasons for a classification system. To recognise that there are more than two kingdoms. To investigate ways in which plants can be classified.	Species, Genus, Organisms, Bacteria	To use classification keys To plan different types of enquiry – researching using secondary resources. To know about the life and work of a scientists – Carl Linnaeus.
	Staying Alive			
	2.1 Going Round in Circles	To recognise the parts of the circulatory system. To understand the function of some of the parts of the circulatory system.	Heart, Lungs, Blood, Oxygen, Vein, Artery	N/A
	2.2 Faster, Faster!	To understand the need for a healthy balanced diet. To investigate some effects of exercise on the body.	Heart, Lungs, Blood, Oxygen, Vein, Artery, Exercise	To take and record measurements. To present data in appropriate ways. To use evidence to support or refute an assertion.

	2.3 Health, Wealth and Happiness	To understand the need for a healthy balanced diet. To explain the effect of drugs on the body.	Addiction, Nicotine	To analyse data and suggest how it supports ideas about a healthy diet and lifestyle.
	We're Evolving			
	3.1 The Same but Different	To understand that although we are similar in many ways, there are also differences between people. To recognise that those differences include eye colour, hair colour, height and shoe size. To recognise that offspring resemble their parents in many features. To recognise that we inherit characteristics from our parents.	Variety, Inherited	To collect and present data in a variety of ways.
	3.2 Evolve or die!	To recognise that offspring are different from each other and their parents. To understand that animals best suited to their environment survive to breed and pass on their characteristics to their offspring. To recognise that this process is known as natural selection.	Evolution, Adaption, Natural Selection	To develop research skills and interpret data. To recognise that observations can be used to support ideas.
	3.3 Bury the Evidence	To understand that living things can change over time. To recognise that fossils provide information about some of those changes.	Fossil, Prehistoric	To identify scientific evidence that has been used to support ideas. To know about the life and work of a scientists
	Let it Shine			
	4.1 Going Straight	To recognise that light appears to travel in straight lines. To explain how a shadow is formed. To explore how to change the size of a shadow.	Light ray, Cornea, Pupil, Iris, Lens	To represent and report on findings. To take accurate measurements. To identify and manage variables in an investigation.
	4.2 Reflecting on Seeing	To apply the idea of how light travels to explain how we see things. To explore how light behaves at reflective surfaces.	Reflection, Symmetry	To present findings and conclusions from experiments. To use secondary sources to answer questions.
	4.3 Never a Dull Moment	To explore how light can be reflected and bent in various ways. To explore how white light can be split up. To recognise that light is made up of more than one colour.	Rainbow	To make observations and raise further questions to investigate.
	Electrifying!			
	5.1 Think Like an Electrician	To recall circuit symbols for cell, battery, switch, motor and buzzer. To construct simple circuits using bulbs, motors, buzzers and switches. To recognise and explain what is needed for a circuit to work.	Component, Cell, complete, Electrons	To present findings and conclusions.
	5.2 All Change	To recognise from a diagram whether a circuit will work. To represent circuits with symbols. To change components in a circuit and explain the patterns of change produced.	Fuse, Blow, Filament, Cell, Battery	To plan how to investigate an idea by managing variables.