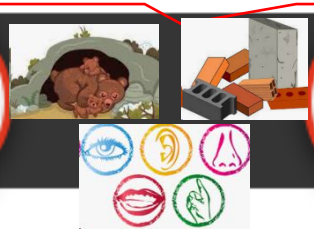
Understanding the World – learning about seasons; exploring our local area, including its habitats, animals that live around us and why. Planting seeds, learning about hibernation; exploring our senses and working with a range of materials.



Year 1 science
Seasonal changes; everyday materials; sensitive bodies; comparing animals; introduction to plants; and making connections.

Year R

Year 1

Year 2

Animals, including humans

Living things and their habitats

Plants

Materials

Energy

Year 3 science
Movement and nutrition; forces and magnets; rocks and soils; light and shadows; plant reproduction; and making connections

Year 2 science
Habitats; microhabitats; use of everyday materials; life cycles and health; plant growth; and making connections.

Year 3

Year 4

Year 4 science
Digestion and food; electricity and circuits; states of matter; sound and vibrations; classification and changing habitats; and making connections.

Year 5 science
Mixtures and separation; properties and change; Earth and space; life cycles and reproduction; imbalanced forces; human timeline; and making connections.

Year 6 science
Classifying big and small; light and reflection; evolution and inheritance; circuits, batteries and switches; circulation and exercise; and making connections.

Year 5

Year 6

Daven Primary School

EYFS	
Coverage	Children explore the natural world around them through daily continuous provision and weekly Welly Wednesday. Throughout the year, children will: • Create collages, with a range of natural and manmade materials • Explore the seasons, with their senses • Learn about nocturnal animals • Take part in the Great Big Bird Watch • Compare habitats of birds, and learn about hibernation • Explore materials e.g. frozen water and how it can melt • Watch daffodils bloom, plant seeds • Observe seasonal changes e.g. signs of spring • Find out about the importance of recycling and why some animals are endangered • Explore shadows • Find out how we can stay safe in the sun • Look at and learn about the life cycle of caterpillars
Development matters links	**Understanding the world**: Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary. Explore how things work. Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant and an animal. Begin to understand the need to respect and care for the natural environment and all living things. Explore and talk about different forces they can feel. Talk about the differences between materials and changes they notice. Describe what they see, hear and feel whilst outside. Understand the effect of changing seasons on the natural world around them. **Expressive arts and design**: Explore different materials, using all their senses to investigate them. Manipulate and play with different materials. Use their imagination as they consider what they can do with different materials. Make simple models which express their ideas.
ELG links	**The Natural World:** Explore the natural world around them, making observations and drawing pictures of animals and plants. Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. **Creating with materials:** Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function.

Oracy opportunities 	Explore would you rather questions to practise reasoning; using consensus circles to discuss scientific ideas which result in reaching a shared consensus; completing 'which one does not belong?' tasks to propose ideas, give reasons and provide evidence for their theories; speaking through 'always, sometimes, never, to generate ideas for collaborative talk and promote reasoning.					
YEAR 1						
Topic	**Forces, Earth and space: seasonal changes** Reflecting on their own experiences, children learn about the four seasons and the weather associated with each. Pupils explore how seasonal changes affect trees, daylight hours and our choices about outfits. They plan and carry out their own weather reports, considering the knowledge required for this job.	**Materials: everyday materials** Identifying the difference between objects and materials, children explore their surroundings to find examples of each. They work scientifically by planning tests, making observations and recording data. Pupils use results to answer questions and sort and group materials by their properties.	**Animals including humans: sensitive bodies** Familiarising themselves with the basic parts of the human body, children investigate their senses through stimulating experiences that highlight how we interact with the world around us. They develop an understanding of the importance of our senses and how science can support those who have lost sensory function.	**Animals including humans: comparing animals** Studying both local and global animals, children recognise common features and use this information to make comparisons and begin to classify animals. Pupils collect data by surveying class pets, to then explore ways in which this information can be recorded. They develop their understanding of classification by comparing the dietary habits of different animals and use their knowledge and imaginations to take on the role of a zookeeper.	**Plants: introduction to plants** Identifying the key features of a plant, children describe important structures and make comparisons between different plants. Pupils use investigative skills to record the growth of a plant over time and begin to reflect on factors that will affect its development. They begin to explore how plants are used by humans and grow their own herb garden.	**Making connections** Bringing together pupils' learning from multiple science units, helping them to make connections between the key concepts and skills.
Oracy opportunities 	Utilising a range of talk tactics; use of talking points to talk to share, compare and analyse ideas; use of concept cartoons to explore ideas and give reasons for opinions; learn to talk to inform; explore would you rather questions to practise reasoning; using consensus circles to discuss scientific ideas which result in reaching a shared consensus.					
YEAR 2						

Topic	**Living things and their habitats: habitats** Considering the life processes that all living things have in common, pupils classify objects into alive, was once alive or has never been alive. Pupils explore global habitats, naming plants and animals that can be found there. They learn how a range of different living things depend on each other for food or shelter. Pupils explore this further by creating food chains to show the sequence that living things eat each other for energy to grow and stay healthy.	**Living things and their habitats: microhabitats** Developing their understanding of scientific enquiry, pupils learn that scientists use a range of skills to answer questions. They discover that microhabitats provide what minibeasts need to survive and carry out a survey to find out where different minibeasts live in the school grounds. They practise asking scientific questions and follow a method to investigate which conditions woodlice prefer. Pupils explore the job role of a botanist by identifying flowering plants.	**Materials: use of everyday materials** Reflecting on their knowledge of different materials, children begin to explain why materials are used in certain contexts. They develop enquiry skills to investigate the properties of materials and explore the science of inventing new ones.	**Animals including humans: life cycles and health** Studying the life cycles of various animals, children learn what animals need to survive and how they change over time. Pupils collect data that allows them to observe changes in their peers, while also developing their ability to take measurements and record data. They consider the role of expert scientific knowledge in careers that inform people to make healthy choices.	**Plants: plant growth** Using their prior knowledge of important plant structures, children explain what factors are needed for successful growth and compare how those needs vary across different plants. They grow plants from seeds and bulbs to ascertain the needs for initial development and compare this to the survival needs of plants in later growth phases. Pupils take their own measurements and reflect on historical examples to understand how conclusions can be drawn.	**Making connections** **B**ringing together pupils' learning from multiple science units, helping them to make connections between the key concepts and skills.
Oracy opportunities	Utilising a range of talk tactics; use of talking points to talk to share, compare and analyse ideas; use of concept cartoons to explore ideas and give reasons for opinions; learn to talk to inform; explore would you rather questions to practise reasoning; using consensus circles to discuss scientific ideas which result in reaching a shared consensus; completing 'which one does not belong?' tasks to propose ideas, give reasons and provide evidence for their theories; speaking through 'always, sometimes, never, to generate ideas for collaborative talk and promote reasoning.					
YEAR 3						
Topic	**Animals including humans: movement and nutrition**	**Forces, Earth and space: forces and magnets**	**Materials: rocks and soils**	**Energy: light and shadows**	**Plants: plant reproduction**	**Making connections** Bringing together pupils' learning from

	Studying the human skeleton, children identify key bones and compare them to other animals explaining the role within the body. Pupils explore how changes in muscles result in movement and the implications these discoveries have in the scientific development of prosthetic limbs. They study how energy is used by the body, what constitutes a balanced diet in humans and how research contributes to nutritionist expertise.	Investigating the movement of vehicles on different surfaces, children learn about the impact of friction and compare uses and drawbacks. They broaden their experience in writing scientific methods and recording data as they investigate contact and non-contact forces. Pupils explore the properties of different magnets and use this to understand their uses.	Studying rocks and their properties, children learn that rock properties support classification and tell us about how rocks were formed. Pupils look at the work of palaeontologists to learn about how fossils form and use models to explain the rock cycle. They plan an investigation to test rocks for particular uses and form conclusions about which soil type is most suitable for UK farmers.	Identifying examples of luminous objects, children learn about how light travels around us and how that enables us to see. Children investigate reflection and shadow formation, creating their own shadow puppets and exploring how shadows can be used to entertain in the arts. They look at examples of pivotal scientific discoveries and the scientific methods that led to those successes.	Building on their prior knowledge of plant structures, children describe the functions of named parts and use evidence to explain their significance in plant development. Pupils investigate further factors that may affect the growth of plants and compete with their peers to disperse seeds in a variety of ways. They explore how seeds vary and define the type of plant they are studying, as well as looking at how seed shapes have inspired modern technologies.	multiple science units, helping them to make connections between the key concepts and skills.
Oracy opportunities	Utilising a range of talk tactics; use of talking points to talk to share, compare and analyse ideas; use of concept cartoons to explore ideas and give reasons for opinions; learn to talk to inform; explore would you rather questions to practise reasoning; using consensus circles to discuss scientific ideas which result in reaching a shared consensus; completing 'which one does not belong?' tasks to propose ideas, give reasons and provide evidence for their theories; speaking through 'always, sometimes, never, to generate ideas for collaborative talk and promote reasoning.					
YEAR 4						
Topic	**Animals including humans: digestion and food** Using models, children describe the function of key organs in the digestive	**Energy: electricity and circuits** Exploring appliances that use electricity in their setting, children learn how to work with electricity safely	**Materials: states of matter** Investigating the properties of solids, liquids and gases, children learn about the different states of	**Energy: sound and vibrations** Exploring different ways of producing sounds, children learn about the relationship between vibrations	**Living things and their habitats: classification and changing habitats** Identifying different ways living things can be grouped, children	**Making connections** Bringing together pupils' learning from multiple science units, helping them to make connections between

	system. Pupils identify the types of human teeth to create their own model and investigate factors that impact our dental health. They compare human teeth to other animals' and consider this in the light of prior knowledge about predators, prey and food chains. Children take on the role of a naturalist investigating animal faeces for clues about diet, digestion and dentition.	and build circuits. Pupils investigate electrical conductors and insulators and explore the relationship between the number of bulbs and bulb brightness. Real scenarios and historical discoveries inform children about scientific progression and home safety.	matter. They explore changes of state using relatable examples and use this to explain changes to water through the water cycle. Pupils investigate the relationship between temperature and rate of evaporation while broadening their experience of working scientifically.	and what they hear. They use examples of echolocation to develop their understanding of how sound travels between objects and investigate the role of insulation to protect our ears. Pupils explore how pitch and volume can be altered and make their own musical instruments to demonstrate these principles.	make classification keys to explore which grouping methods are most effective. Pupils study ways that habitats may change over time and understand that humans can have both positive and negative effects on their surroundings. They play the role of naturalists and review the impact of conservation programmes.	the key concepts and skills.
Oracy opportunities 	Utilising a range of talk tactics; use of talking points to talk to share, compare and analyse ideas; use of concept cartoons to explore ideas and give reasons for opinions; learn to talk to inform; explore would you rather questions to practise reasoning; using consensus circles to discuss scientific ideas which result in reaching a shared consensus; completing 'which one does not belong?' tasks to propose ideas, give reasons and provide evidence for their theories; speaking through 'always, sometimes, never, to generate ideas for collaborative talk and promote reasoning.					
YEAR 5						
Topic	**Materials: mixtures and separations** Pupils explore different types of mixtures and the different methods that can be used to separate them. They dissolve a range of substances, identify different solutions	**Materials: properties and change** Broadening their experience of the properties of materials, children investigate hardness, transparency and conductivity and consider how these properties influence	**Forces, Earth and space: Earth and space** Exploring some of the key celestial bodies in our solar system, children learn the names and compare their movements. Pupils discover the relationship between	**Living things and their habitats: Life cycles and reproduction** Studying different animals' life cycles, children learn about the significance of reproduction for a species' survival. Pupils calculate the probability of male	**Forces, Earth and space: imbalanced forces** Building on their knowledge of contact forces, children explore gravity, air resistance and water resistance in more depth and consider the effect of these	**Animals including humans: human timeline** Studying human development and changes, children identify key stages and consider what data may help determine if a child is growing normally.

	and investigate how temperature affects the time taken to dissolve. They design and create a water filter, sieve soil and evaporate solutions.	the uses of materials. They explore reversible changes, including dissolving and changes of state. Children compare these to irreversible changes, including rusting, burning and mixing vinegar and bicarbonate of soda.	the Earth's rotation and day and night, making models to represent their knowledge. They make their own sundials and consider how and why our ideas about the universe have changed so much over history	and female turtles hatching and grow plants to compare asexual and sexual reproduction. Pupils compare fertilisation across different animals and explore the needs of a foetus. Children narrate their own documentary in the style of an inspirational naturalist.	forces being imbalanced. They demonstrate key principles in the classroom and plan investigations to further their understanding of the effects of these forces. Pupils test their ideas using models and compete to build the most effective pulley system.	They describe how puberty affects girls and boys and produce graphs to record how gestation periods vary across different animals. **Making connections** Bringing together pupils' learning from multiple science units, helping them to make connections between the key concepts and skills.
Oracy opportunities	Utilising a range of talk tactics; use of talking points to talk to share, compare and analyse ideas; use of concept cartoons to explore ideas and give reasons for opinions; learn to talk to inform; explore would you rather questions to practise reasoning; using consensus circles to discuss scientific ideas which result in reaching a shared consensus; completing 'which one does not belong?' tasks to propose ideas, give reasons and provide evidence for their theories; speaking through 'always, sometimes, never, to generate ideas for collaborative talk and promote reasoning; learning how to debate scientifically.					
YEAR 6						
Topic	**Living things and their habitats: classifying big and small** Children broaden their knowledge of how vertebrates, invertebrates, plants and micro-organisms are grouped using shared characteristics. They discover how Carl Linnaeus developed the	**Energy: light and reflection** Proving that light travels in a straight line, children use this information to explain observations of reflection and shadows. They explore how our eyes allow us to see and how mirrors can be used in a variety of	**Living things and their habitats: evolution and inheritance** Studying patterns through families, children learn about characteristics that are inherited from parents and those that are environmental. Through the eyes of Darwin and Wallace,	**Energy: circuits, batteries and switches** Using their prior knowledge of electrical circuits, children learn to draw conventional circuit diagrams and use models to explain current and voltage. They make their own batteries, relate this	**Animals including humans: circulation and exercise** Studying the human circulatory system, children learn about the role of the heart, blood and blood vessels and use models to demonstrate their function. They play the role of healthcare	**Making connections** Bringing together pupils' learning from multiple science units, helping them to make connections between the key concepts and skills.

	Linnaean and binomial systems for classifying and naming living things. Pupils use and produce classification keys to sort and identify organisms.	ways. Pupils investigate factors affecting the size of shadows and the laws of reflection. Children apply what they have learned about light by exploring real-life uses of mirrors.	pupils understand how observations lead to theories and explore natural selection. Through modelling the variation and natural selection of Darwin's finches, they begin to explain how species evolve over time and incorporate fossil evidence that supports this theory.	to their knowledge of voltage and explore how battery research has impacted other scientific progress. Pupils investigate the use of switches and fuses and apply their electrical knowledge to design and produce their own electrical device.	professionals to diagnose patients and play games to explore how lifestyle choices affect our health. Pupils devise their own investigation to look at the relationship between exercise and heart and breathing rates, applying their knowledge of variables.	
Oracy opportunities 	Utilising a range of talk tactics; use of talking points to talk to share, compare and analyse ideas; use of concept cartoons to explore ideas and give reasons for opinions; learn to talk to inform; explore would you rather questions to practise reasoning; using consensus circles to discuss scientific ideas which result in reaching a shared consensus; completing 'which one does not belong?' tasks to propose ideas, give reasons and provide evidence for their theories; speaking through 'always, sometimes, never, to generate ideas for collaborative talk and promote reasoning; learning how to debate scientifically.					