Becoming a Scientist at Wellstead

Colour
What will happen if…?

Scientific Enquiry: Look for patterns when colour mixing
Observation over time - colour change.
Colour absorbency over time.

Working Scientifically: Ask how and why questions
Show curiosity and question why things happen.
Observe and describe what they see using everyday language.

Outcomes:
Name different colours
Explore mixing colours

Ourselves
Who am I and what happens when I grow up?

Scientific Enquiry: Identify parts of the body, look for patterns, identify senses.

Working Scientifically: Observe parts of the body, explain ideas clearly, record learning in a table.

Outcomes:
Name basic body parts
Know that we look different as we get older.
Describe people who are familiar to them
Know how to take care of themselves.

Longitudinal Study: The Natural World and Changes in Seasons
What are seasons?

Scientific Enquiry: Identify each season, observe a tree over time through the seasons, use ID charts to find out about seasons, identify each season and classify things in the correct season, use the pictures from stories to learn about seasons, identify and classify between different seasons.

Working Scientifically: Draw pictures to explain what happens in each season, make careful observations about the changes in the seasons, explain what happens in each season, make simple predictions about which seasons things belong in, ask questions to help with understanding, evaluate own learning and demonstrate own knowledge of seasons.

Outcomes:
Understand that there are four seasons
Name the four seasons
Use some scientific words to describe their environment and link it to the season they are in.
Draw their own ideas about their own environment and things that they like to do in each season.
Describe the changes between each season and describe why some things belong in certain seasons.

Celebrations
Key Question

Scientific Enquiry: Identify shapes and features of a spider, look for simple patterns, patterns, observe over time, comparative test.

Working Scientifically: Observe features of a spider, explain ideas, plan a simple test, predict what will happen, evaluate snow, record results in a simple bar chart.

Outcomes: Name and describe animals that live in different habitats, talk

Fairy Tales
Why wouldn't the Gingerbread Man want to go in the river?
Why wouldn't the cow want to eat him?

Scientific Enquiry: Identify different liquids and materials, carry out simple tests.

Working Scientifically: Make careful observations, ask and answer simple questions, plan simple tests.

Outcomes: Name the materials they are using and say why they are using them, talk about the basic properties of materials and why it is suited for a purpose, observe changes in their natural world and say why it is different

Animals
Does every type of animal live everywhere?

Scientific Enquiry: Identify where animals may live in the world, look for patterns between the animal and its environment, observe what happens to the temperature over time with and without insulation, research facts about a chosen animal, identify different animals and use observations to move like different animals.

Working Scientifically: Notice similarities and differences within the seasons, make sensible predictions about where animals may live, explain in simple terms how animals adapt to their habitat, ask questions to help research facts about an animal, apply their knowledge of animals through movement.

Minibeasts and Growing
What happened to the Hungry Caterpillar?

Scientific Enquiry: Identify the stages of a caterpillar, observe a plant growing over time, use research to identify insects, identify parts of a minibeast, notice changes, observe their habitat over time.

Working Scientifically: Make careful observations, test out their ideas, record their findings, interpret their findings using a model, record using their chosen method, talk about their learning when creating their habitat.

Outcomes: Identify the various stages of the life cycle of a caterpillar /butterfly. Identify foods that are grown and come from plants.
Identify any of the things a plant needs to grow. Identify parts of an insect.
Use relevant scientific language.

People Who Help Us
Who can help me?

Scientific Enquiry: Make observations over time, know why we must brush our teeth, understand the roles of people who help us, compare different materials, look for similarities and differences in people's appearance when describing, identify patterns and prints.

Working Scientifically: Test out ideas to find out new things, explain why it is important to clean our teeth, ask questions about why firefighters need to stay fit and healthy, make basic predictions, give detailed descriptions and record results using pictures, use observation skills to solve problems.

Outcomes: Identify the people that can help them, identify ways to and why they need to keep their teeth clean, identify what is needed to cause a fire and what to do in the event of one, identify the skills/role of the police, use observational skills for a purpose.

Keeping Healthy
How can I be healthy?

Scientific Enquiry: identify different ways to keep healthy, observe how germs spread over time, identify simple patterns, identify different emotions.

Working Scientifically: record ways to keep healthy, notice how germs are spread, predict what will happen to their body if they exercise, describe and draw different emotions.

Outcomes:
Identify ways to keep healthy,
Understand why we need to stay clean
Know how some germs can make them ill.
Understand what a dentist's role is.
Understand why it is important to have a clean environment.
Understand that they need to eat different foods.
Understand why it is important to exercise.
Understand the importance of sleep and identify different emotions.

Under the Sea
What can you see under the sea?

Scientific Enquiry: Identify animal habitats, identify the parts of a fish, carry out a comparative test, identify patterns, find out about what a deep sea-ecologist does.

Working Scientifically: Ask simple questions, group using observation skills, make simple predictions, draw pictures using observation skills, make careful observations.

Outcomes:
Identify animal habitats under the sea.
Group fish based on observations.
Understand why things float or sink.
Make observations of plants and animals.
Label basic fish anatomy

Intent

Our science curriculum provides the foundations for pupils' conceptual understanding of the world around them. Through building up a body of key knowledge, investigative skills and precise vocabulary, pupils should be empowered to ask relevant questions and seek the answers by setting up and carrying out enquiries and making systematic observations to draw out their conclusions. Scientific concepts should be easy to learn and difficult to forget, sparking pupils' curiosity so that they engage with natural phenomena. This will help pupils to understand that they can have a positive impact on the world around them.

Becoming a Scientist at Wellstead

1 Autumn 1 Materials

How can we describe and sort materials?

Scientific Enquiry: Identify materials and classify, classify based on how they feel.

Working Scientifically: Use observations to classify, record in a table, ask and answer questions.

Outcomes:
Label a picture/diagram of an object made from different materials.
Describe the properties of materials

1 Autumn 2 Seasonal Changes

What happens when the seasons change?

Scientific Enquiry: Identify 4 seasons, look for patterns in colours, observe formation of crystals, compare results to research on rain, simple comparative test, identify different clouds.

Working Scientifically: Labelled diagrams, evaluate test and suggest improvements, ask simple questions

Outcomes:
Name four seasons and identify when in the year they occur.
Observe and describe weather in different seasons.
Describe days being longer in summer and shorter in winter.
Present data in tables, charts and compare seasons

1 Autumn 2 Set Up Longitudinal Study

How do seasons affect the weather?

Scientific Enquiry: Observe changes across the four seasons, observe and describe weather associated with the seasons, observe rainfall, wind direction and temperature over time and look for patterns, use charts to show changes in data, identify and classify between different seasons.

Working Scientifically: Ask simple questions and recognise that they can be answered in different ways, observe closely, using simple equipment, perform simple tests, identify and classify. use their observations and ideas to suggest answers to questions, gather and record data to help answer questions.

Outcomes: Go outside and look at the weather, suggest how to dress a teddy or doll appropriately for the current weather conditions, understand the symbols used by weather forecasters, create weather forecasts about the weather at school, observe and discuss changes in the weather, understand the day length changes each day and varies season to season, investigate shadows and their shapes, talk about rain and how it affects our lives, understand how to record the rainfall over a period of time, understand that wind direction is measured by a wind sock, observe wind direction over time and notice any patterns between rainfall and wind, understand that warm and cold weather, including snow, can be specific to different seasons, understand that air temperature changes with the seasons, and that usually

1 Spring 1 Animals

What are the main parts of the human body?
Are all our features the same?

Scientific Enquiry: Identify parts of the body, compare features, explore senses, comparative tests.

Working Scientifically: Observe features of the human body, ask questions, make comparisons and give reasons, carry out tests to compare and classify, make predictions using senses.

Outcomes:
Describe the key features of named animals.

1 Spring 2 Materials

Which material works best?

Scientific Enquiry: Identify materials, classify materials, compare suitability of materials, patterns in test results.

Working Scientifically: Use observations to classify, record in a table, ask and answer questions, simple tests, make predictions on best materials, evaluate test.

Outcomes: Describe the properties of materials.
Sort materials using their properties.

1 Summer 1 Animals

Is it an amphibian? What's a mammal?

Scientific Enquiry: Spot patterns between groups of animals, identify and classify animals, compare, group and sort animals, comparative tests.

Working Scientifically: Observe features of animals, ask questions, make comparisons and give reasons, carry out tests to compare and classify, venn diagrams.

Outcomes: Name a range of animals which includes animals from each of the vertebrate groups. Label key features on a picture/diagram.
Describe the key features of named animals.

1 Summer 2 Plants

How can a seed so small become a tree so tall?
Why do leaves fall off trees?

Scientific Enquiry: Find out how different fruits grow, observe seeds over time, identify plants in the environment, identify and classify parts of a plant, identify and classify leaves. observe leaves over time.

Working Scientifically: Make careful observations, explain how a seed grows, draw and label a plant, label parts of a plant, ask yes and no questions to classify, make simple predictions.

Outcomes: Name trees and other plants they see regularly.
Describe key features of the trees and plants e.g. shapes of leaves/colour of the flower/blossom. Point out trees which lost their leaves and those who keep them all year. Point to and name parts of a plant. Use simple charts to

2 Autumn 1 Living Things and Habitats

What is a biome?

Scientific Enquiry: Identify and classify objects, identify habitats, research facts about animals, look for patterns in data, find out what animals eat.

Working Scientifically: Ask questions, record observations, draw basic conclusions, use tables and pictograms, interpret results, communicate findings.

Outcomes: Find a range of items which are dead / living, name plants/animals which live in different habitats and micro habitat, talk about the features of the animal/plant and how they are suited to the habitat, talk about what the animal eats, construct a food chain using simple diagrams.

2 Autumn 2 Materials

What makes some materials more suitable than others?

Scientific Enquiry: Compare and group materials, identify materials, use research for understanding, comparative tests, notice patterns between materials.

Working Scientifically: Identify and classify materials, label diagrams, draw basic conclusions, carry out simple comparative tests, predict best material, evaluate findings of tests.

Outcomes: Name an object, say what material it is made from, identify properties and make a link between property and use. Whilst changing the shape of an object can describe the actions used. Use suitable vocabulary. Simple tests relevant to properties. Describe similarities and differences in materials.

2 Spring 1 Animals Including Humans

What do animals and humans need to survive?

Scientific Enquiry: Look for patterns in animals, observe life cycles over time, research facts about animals, identify foods animals eat.

Working Scientifically: Identify animals and offspring, ask simple questions, communicate findings, communicate findings about animals.

Outcomes: Sequence the stages of a baby. Observe these changes.
Describe how animals change as they get older.
Develop understanding of how insects change (more than a butterfly) through lifecycle diagrams. Explain what humans and other animals need to survive.

2 Spring 2 Plants

How do seeds and bulbs grow into mature plants?

Scientific Enquiry: Identify and classify parts of a flower, observe over time how plants grow, identify plants using observations / identify plants in the environment, use a Venn diagram to sort and classify,

Working Scientifically: Label parts of a flower, make observations on how a plant grows, use a Venn diagram to sort and classify, identify plants using observations.

Outcomes: Describe how plants that have grown from seeds and bulbs have developed over time. Spot similarities and differences between bulbs and seeds.

2 Summer 1 Animals Including Humans

How can humans keep healthy and why is this important?

Scientific Enquiry: Identify foods animals eat, set up comparable tests, identify and classify foods, look for patterns in how germs spread, use research, observe over time, revise, research and recall.

Working Scientifically: Sort food into groups and record, use art to represent food groups, plan and carry out tests, make simple predictions, evaluate tests, communicate using models, answer questions using scientific knowledge.

Outcomes: Describe how to keep clean and healthy. A good understanding of the food plate and understands 'a healthy balanced diet'. Adapt a menu to substitute food from the eat well plate. Understands the effect of exercise on the body.

2 Summer 2 Plants

What if we water a plant with lemonade?
What do plants need to grow and stay healthy?

Scientific Enquiry: Observe plants over time, carry out comparative tests, record observations over time, look for patterns, look for patterns in tests, use research, recap key concepts.

Working Scientifically: Make basic predictions, carry out simple tests, evaluate tests, communicate clearly how plants grow, ask questions to investigate, observe plants in different climates, record results using accurate measurements, evaluate learning,

Outcomes: Describe how plants that have grown from seeds and bulbs have developed over time. Identify plants that grew well in different conditions.

Becoming a Scientist at Wellstead

3

Autumn 1 Rocks and Soils
What do you think when you hear the word 'ROCK'?

Scientific Enquiry: Compare and group materials based on their properties, classify rocks based on their properties. carry out comparative tests to rank rock properties, research and learn about Mary Anning, use research and models to help demonstrate their learning, make careful and systematic observations over time.

Working Scientifically: Make careful observations and identify similarities and differences, record classifications in a table, Venn or Carrol diagram, record results in a table, interpret the process of fossilisation using models and pictures, ask questions to deepen their learning about rock formation, set up tests to answer questions.

Outcomes: Name some types of rock and give physical features of each. Explain how a fossil is formed.
Explain that soils are made from rocks and also contain living/dead matter. Classify rocks in a range of ways using scientific vocabulary. Test properties of rocks. Identify plant/animal matter in soil, test water retention of soils.

3

Autumn 2 Animals Including Humans
Why do we have a skeleton?

Scientific Enquiry: Research the bones in the skeletal system, identify and classify parts of the skeletal system, identify bones in the body and the hand, look for patterns in how each part of the hand moves and make adjustments, identify and classify animals into vertebrate and invertebrates, look for patterns in results, use secondary sources to find out about muscles, research the nutritional values of foods by reading data, look for patterns and compare nutritional values, identify and classify foods.

Working Scientifically: Locate and label the bones in the body, answer questions about the uses of our bones, record using labelled drawings and scientific language, evaluate design and suggest improvements, make careful observations to sort animals into groups, make predictions from questions raised, use scientific language to discuss ideas, record results in a table/bar chart, evaluate my learning using scientific language

Outcomes: Name the nutrients found in food. State that to be healthy we need to eat the right types of food to give us the correct amount of nutrients. Name some bones that make up the skeleton giving examples that support, help them move or provide protection. Give similarities and differences between skeletons. Describe how muscles and joints help them to move. Classify food groups (high/low nutrients), answer q's about nutrients in food, use data to look for patterns.

3

Spring 2 Forces and Magnets
How do Maglev trains work?

Scientific Enquiry: Group and identify forces based on observations, research John McAdam to create own road surfaces, sort and classify materials into magnetic and non-magnetic, carry out a fair test using magnets, spot patterns in my drawings and explain what is happening using magnetic fields, use research and secondary sources to aid my explanations.

Working Scientifically: Observe different forces evaluate my choices and suggest further improvements, predict whether materials are magnetic or not, plan a fair test, record my Use findings using scientific drawings. use models to explain findings.

Outcomes:
Give examples of forces in everyday life. Give examples of objects moving differently on different surfaces. Name a range of magnets and show how the poles attract and repel. Draw diagrams using arrows to show the attraction and repulsion between the poles of magnets. Use results to describe how objects move on different surfaces. results to make predictions. Use some classification to know some metals are not magnetic. Use test data to rank magnets.

3

Summer 1 Plants
How is water transported within plants and what is pollination?

Scientific Enquiry: Identify parts of the plant, carry out a comparative test, make observations over time, use research and my own scientific knowledge to explain the process, look for patterns, identify and classify different seeds.

Working Scientifically: Record my findings using labelled scientific diagrams, plan a comparative test, interpret my findings using scientific knowledge, explain in detail what pollination is, evaluate my seed spinner, look carefully at seeds.

Outcomes: Explain the function of the parts of a flowering plant. Describe the life cycle of flowering plants, including pollination, seed formation, seed dispersal and germination. Give different methods of pollination and seed dispersal, including examples. Explain observations made during investigations. Look at features of seeds to decide on method of dispersal.

3

Summer 2 Light
What can you see when there is absolutely no light? / Why do we need light?

Scientific Enquiry: Compare how different materials react to light, identify patterns in my results to answer questions, observe what happens over time, spot patterns in results to answer questions, look for patterns in results, I can observe a shadow over time. carry out a fair test and control variables, look for patterns in the size of the shadows.

Working Scientifically: Raise questions when exploring materials and light, make predictions based on scientific questions, set up practical comparative tests using my own ideas, record my results in a table, interpret my results and report on patterns found, evaluate my test and suggest improvements, observe what happens when an object is moved closer to a light source.

Outcomes: Describe how we see objects in lights and can describe dark as the absence of light. Know it is dangerous to look at the sun. Define transparent, translucent, and opaque. Describe how shadows are formed. Predict what materials will be more/less visible.

4

Autumn 1 States of Matter Including the Water Cycle
How do some materials change shape?

Scientific Enquiry: Compare and group materials together depending on their properties, look for patterns in observations, construct a fair test to investigate melting points, observe what happens when a liquid changes to a solid, carry out a fair test and identify change and measure factor.

Working Scientifically: Make careful observations and identify similarities and differences, make predictions using straightforward evidence and observations, use a thermometer to take accurate measurements, interpret what they have observed using their own scientific knowledge, set up tests to answer questions, record using diagrams what they know about the water system.

Outcomes: Name properties of solids, liquids and gases. Give everyday examples of melting and freezing, evaporation and condensation. Describe the water cycle. Give reasons to justify why something is a solid liquid or gas. Give examples of things that melt/freeze and how their melting points vary from their observations, give the melting points of some materials. Using their data, can explain what affects how quickly a solid melts. Measure temperatures using a thermometer. Explain why there is condensation on the inside of the hot water cup but on the outside of the icy water cup. From their data, explain how to speed up or slow down evaporation. Present their learning about the water cycle in a range of ways e.g. diagrams, explanation, model.

4

Autumn 2 Electricity
What is electricity and can we survive without it?

Scientific Enquiry: Identify electrical components and classify appliances. identify patterns in my observations, conduct a comparative test, identify the properties of materials, find out about different scientists and energy sources, know how electricity has developed over time.

Working Scientifically: Record my work using labelled drawings, make predictions using scientific language, interpret my results using my scientific knowledge, identify the properties of different materials, pose scientific questions, record how electricity can help us.

Outcomes: Name the components in a circuit. Make an electric circuit. Control a circuit using a switch. Name some metals that are conductors. Name materials that are insulators. Communicate structures of circuits using drawings, incorporate a switch, describe how a switch works.

4

Spring 1 Animals Including Humans (digestion and teeth)
What would it be like to have no teeth?

Scientific Enquiry: Identify the organs of the digestive system and use models to explain thinking, identify the different teeth and know their function, identify and compare similarities and differences in human and animal teeth, set up a comparative test to show effects of tooth decay, observe tooth decay over time, research animal food chains to find out what animals eat, identify foods animals eat to classify, identify patterns.

Working Scientifically: Observe the similarities and differences in human/animal teeth, interpret and present learning of digestive system through models, set up own test to see the effects of different liquids on tooth decay, make predictions based on scientific knowledge of liquids to decay teeth, record results in a table and bar graph, ask questions to find out what animals eat, evaluate learning.

Outcomes: Sequence the main parts of the digestive system and draw them onto a human outline, describe what happens in each part of the digestive system. point to three different types of teeth in their mouth and talk about what each is used for, demonstrate journey of food through body, explain teeth in animals and identify if they are carnivores, herbivores or omnivores.

4

Summer 1 Living Things and Their Habitats
What is classification?

Scientific Enquiry: Identify animals and classify into different groups, identify similarities and differences in human characteristics, find patterns in mini beast habitats, identify animals and classify into groups, research endangered animals and the effects of changing environment.

Working Scientifically: Observe characteristics of living things, identify similarities and differences characteristics, gather and record data in a table, record observations from scientific enquiry, ask relevant questions to classify things, use evidence to answer questions and present findings, record findings about endangered species.

Outcomes: Identify that animals and plants can be classified in a number of possible ways including vertebrates and invertebrates, flowering and non-flowering plants. Ask yes/no characteristic questions to classify a small number of living things. Name living things in a range of habitats, giving key features that helped identify them. Give examples of how an environment may change both naturally and due to human impact. Use classification keys to identify unknown plants and animals.

4

Summer 2 Sound
How might we investigate which sound frequencies travel the furthest?

Scientific Enquiry: Identify how sounds are made, conduct a fair test to establish the best string phone, spot patterns in results into how well sound travels, H/W- research how hearing aids work, pattern seek to make conclusions, carry out a pattern seeking enquiry, set up a fair test, look for patterns in results.

Working Scientifically: Observe vibrations which cause sound, measure distance to nearest cm, set up tests to create the best string phone, record results in a table and spot patterns, record sound measured in DB in a table. Produce line graph, evaluate musical instrument based on sound and knowledge of pitch, observe how sounds are created, set up own tests and record results, set up own tests / ask questions based on animal ear shapes.

Outcomes: Describe different types of objects producing different sounds and know that sound is produced by vibration in the object. Describe sounds travelling through different mediums such as air, water, metal. Find patterns between pitch and volume and the features of the object producing it. Recognise that sounds get fainter as the distance from the sound source increases. Demonstrate how to increase/decrease pitch and volume.

Becoming a Scientist at Wellstead

5 Autumn 1 Forces

How and why do things move?

Scientific Enquiry: Research the effects of gravity and Sir Isaacs equipment, observe over time how many times a pendulum swings, conduct a fair test to explore the effects of air resistance on a falling object, conduct a comparative test to investigate water resistance, conduct a fair test to investigate friction, look for patterns in their results.

Working Scientifically: Observe different forces and measure the force using different equipment, set up a test to change the speed of a pendulum, interpret and communicate results from data using scientific vocabulary, plan different types of enquiry to answer a question, take measurements using a range of scientific equipment, record results in a table.

Outcomes: Demonstrate the effect of gravity acting on an unsupported object. Give examples of friction, water resistance and air resistance. Give examples of when it is beneficial to have high or low friction, water resistance, and air resistance. Can demonstrate how pulleys, levers and gears work.
investigations involving dissolving and non-reversible change

5 Autumn 2 Properties of Materials

Can all materials be recovered once their shape has been changed?

Scientific Enquiry: Identify different materials and classify based on their properties, identify the properties of different materials based on whether it will dissolve, make observations over time, compare how reversible and irreversible materials act when heated and cooled, notice patterns in their results, learn about famous scientists and what major discoveries they have made.

Working Scientifically: Evaluate my test, make predictions about which materials are soluble and insoluble, use scientific language and illustrations to discuss, communicate and justify ideas, make careful observations when heating solutions, plan my own test based on how materials react with one another, record results in a table

Outcomes: Explain everyday uses of material e.g. how bricks, wood, glass are used in buildings. Explain what dissolving is, giving examples. Name equipment used for filtering and sieving. Use knowledge of liquids, gases and solids to suggest how materials can be recovered from solutions or mixtures by evaporation, filtering or sieving. Describe simple reversible and non-reversible changes to materials, giving examples. Create chart/table grouping materials using properties. Suggest appropriate material for purpose. Explain results from

5 Spring 2 Fossils, Prehistoric Life and Geological Time

What is Evolution and how do we know it happened?

Scientific Enquiry: Revisit Rocks and soils key vocab definitions sedimentary, igneous, metamorphic, skeletons, endo and exo skeletons, structure of plants, plant reproduction.

Working Scientifically: Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations, identifying scientific evidence that has been used to support or refute ideas or arguments, the method of scientific classification,

Outcomes: recognise that fossils provide information about living things that inhabited the Earth millions of years ago, understand that most fossils are not the bones or shells of dead creatures but mineral deposits left behind, understand different categories of fossils and some key palaeontological terms, summarise some of the early history of Palaeontology and create a dinosaur timeline, understand different categories of fossils and some key palaeontological terms, recognise and describe the family groups of dinosaurs.

5 Summer 1 Space and Gravity

e moon a light source, can the sun harm us and how do we know the Earth is spherical?

Scientific Enquiry: Identify and classify planets, identify and classify planets, observe changes over time, use research and secondary sources to find out about the moon, look for patterns in day light hours, conduct a fair test where variables are controlled.

Working Scientifically: Raise questions and suggest reasons for similarities and differences, use measurement to represent planets in a model, record my work using scientific diagrams and labels, use a model to discuss, communicate and justify scientific ideas using scientific vocabulary, present results in a variety of ways to answer a question, plan own tests and control variables.

Outcomes: Show the movement of the Earth and moon, using diagrams. Explain the rotation of the Earth and how this causes night and day. Explain evidence gathered about the position of shadows in terms of movement of the Earth. Explain how a sundial works. Explain why we have time zones.

5 Summer 2 Living Things and Their Habitats

Are all life cycles the same? / Are all animals pregnant for the same amount of time?

Scientific Enquiry: Identify patterns that might be found in the natural environment, identify and classify different life cycles, use secondary sources to research naturalists and behaviouralists, report and present findings from research, plan and carry out a fair test accurately, look for patterns when considering gestation periods of animals.

Working Scientifically: Use oral and written forms to report conclusions, present data in a variety of different ways to help answer my questions, ask relevant questions and find ways to answer them, make accurate and relevant predictions, suggest next steps based on the weakest aspects of the enquiry, record results using a bar chart and explain the results.

Outcomes:
Describe the lifecycles of mammals, amphibians and insects using diagrams.
Can describe similarities and differences between them.

5 Summer 2 Animals Including Humans

Why do we have belly buttons?

Scientific Enquiry: Look for patterns in gestation periods, notice changes over time, use research and own subject knowledge to order stages of human development, identify changes in the human body, research and use subject knowledge to help others, research and use subject knowledge to help others.

Working Scientifically: Make predictions on gestation periods, record data using scatter graphs, make careful observations as we grow older, record learning using scientific diagrams, interpret findings to help others, evaluate their learning

Outcomes: Explain the changes that take place in boys and girls during puberty. Explain how a baby changes physically as it grows and also what it is able to do.

6 Autumn 1 Living Things and Habitats

Why do scientists classify things?

Scientific Enquiry: Sort based on observable characteristics, classify and sort using classification keys, research genus and species, research animals to classify, observe microorganisms over time, notice patterns.

Working Scientifically: Record in a table, answer own questions, use classification keys, raise questions about animals to group, observe and raise questions. predict how microorganisms will decay food, evaluate effects of yeast.

Outcomes: Give examples of animals in the five vertebrate groups and some of the invertebrate groups. Give key characteristics of the five vertebrate groups and some invertebrate groups. Give examples of flowering and non-flowering plants. Use classification keys to identify unknown plants and animals. Create classification keys. Give a number of characteristics that explain why an animal belongs to a particular group.

6 Autumn 2 Evolution and Inheritance

What is evolution and how does it happen?
What is extinction and how do we know that extinct species used to exist?

Scientific Enquiry: Use scientific evidence to support or refute arguments, explain research using scientific knowledge and understanding, identify patterns which can be found in natural environments, draw conclusions when sorting and classifying, present findings in oral and written form using research, look for patterns when considering variation.

Working Scientifically: Use ideas from secondary sources to explain ideas, raise questions about a range of phenomena, develop predictions which can be found in natural environments, use scientific reasons to make overall comparisons, use scientific diagrams to explain abstract concepts, describe and evaluate my own and other people's scientific ideas

Outcomes: explain the process of evolution.
Can give examples of how plants and animals are suited to their environment, give examples of how an animal or plant has evolved over time e.g. penguin, peppered moth. Give examples of things that lived millions of years ago and the fossil evidence to support this, identify where offspring are not identical to their parents.

6 Spring 1 Light

How can we see? How are rainbows formed? Can we change the shape of a shadow?

Scientific Enquiry: Look for patterns in how light is reflected, use SK and research to make a periscope, identify different parts of the eye, look for patterns in observations, use SK about refraction to make predictions, look for patterns in how we see things.

Working Scientifically: Use scientific models and labelled diagrams, use diagrams to support explanations, make careful observations, draw diagrams with accuracy, make predictions based on SK, evaluate using scientific language

Outcomes: Draw a diagram of the circulatory system, label the parts and annotate it to show what the parts do. Explain the positive and negative effects on diet, exercise, drugs and lifestyle on the body.

The science of today is the technology of tomorrow.

The good thing about science is that it's true, whether or not you believe in it.

6 Summer 1 Electricity

Can you make a battery from lemons?
Which fruit or vegetables make the best batteries?

Scientific Enquiry: Identify electrical components, notice patterns in my investigation, comparative tests, fair tests, using research, identify components.

Working Scientifically: Answer questions by investigating, take accurate measurements, develop predictions, present results in line graph, use diagrams to support explanation, Scientific diagrams.

Outcomes: Make circuits to solve particular problems e.g. how to make the doorbell louder. Carry out fair tests exploring changes in circuits. Make circuits that can be controlled. Understand electricity symbols and draw circuits. Understand how switches work. Understand electrical hazards. Understand how cells/batteries work. Understand voltage.

6 Summer 2 Animals Including Humans

What is the impact of diet and exercise on the body and what might athletes need more of?

Scientific Enquiry: Identify parts of the body, research Santorio and look for patterns, identify parts of the blood, use research to support explanation, conduct comparative tests, use research to support ideas.

Working Scientifically: Use scientific diagrams, take accurate measurements, use labelled diagrams to explain, use models to explain my thinking, plan investigation and record results, observe what happens using a model.

Outcomes: Draw a diagram of the circulatory system, label the parts and annotate it to show what the parts do. Explain the positive and negative effects on diet, exercise, drugs and lifestyle on the body.