Grange Moor Primary School

**Science Overview 2023 - 2024**

Science for KS1 and KS2 is taught in split age classes of Y1/2 Y3/4 Y5/6

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| **Reception – Knowledge and Understanding of the World** |
| **Unit One:** *Weather and Seasons***Substantive Knowledge to be taught*** Describe what clothes you need to wear in the rain
* Explain the differences between rain, ice and water
* Understand the role of clouds
* Understand wind direction
* Describe what causes wind
* Recall that wind is the movement of air
* Explain what snow is
* Understand that snow melts when the weather gets warmer
* Model and construct using different media
* Identify objects which are the same colour as the colours in the rainbow
* Understand how a rainbow is formed
* Investigate how to make a rainbow
* Understand seasonal changes
* Explain what happens during each season
* Describe what clothes you might need for each season
* Understand seasonal changes
* Explain what happens during each season
* Describe what happens to a tree during the four seasons

**Vocabulary****rain, snow, winter, summer, spring, autumn, wind, sun** | **Unit Two:** *Materials***Substantive Knowledge to be taught*** Identify something that is living
* Identify something that is non-living
* Explain what something living has to have
* Explain what happens to chocolate when it starts to melt
* Explain what happens to chocolate when it starts to become hard
* Describe some materials that change shape
* Use a mould to make an ice cube
* Explain how ice is formed
* Describe the best conditions for melting ice
* Explain which material is the most absorbent
* Explain which material is good for different clothing
* Complete a simple test
* Explain what I need to do to build the perfect sandcastle
* Measure accurately to compare
* Understand how to make a mixture

**Vocabulary****melt, wool, mirror, jumper, cold, freeze, ice, smooth** | **Unit Three:** *The Senses***Substantive Knowledge to be taught*** Identify key senses of the human body
* Describe what senses can help us to do
* Name which parts of the body are linked by senses
* Explain that different materials can make different sounds
* Make a simple musical instrument
* Explain how to change a sound being made
* Understand sound as vibrations
* Explain how I use my sense of hearing and sight
* Draw items from memory using clues from my senses
* Feel an object without seeing it and describe it in detail
* Describe the taste of something
* Understand the words feel and taste
* Identify key senses of the human body
* Describe what senses can help us to do
* Name which parts of the body are linked by senses

**Vocabulary****sight, taste, touch, sound, hear, noise, trumpet, eye** |
| **Unit Four:** *Food***Substantive Knowledge to be taught*** Understand the importance of staying healthy
* Describe a balanced diet
* Know the difference between healthy and unhealthy food
* Explain where eggs come from
* Understand stages of a chicken's life
* Name the parts of a chicken
* Understand how milk can be used to keep us healthy
* Explain what a cow produces
* Explain where milk comes from
* Follow instructions accurately
* Understand the process in making dough
* Use materials to shape and cut
* Identify if a fruit tastes bitter or sweet
* Use clues to identify a fruit
* Identify and describe a range of fruit
* Understand which vegetables grow overground or underground
* Name several types of vegetables
* Identify three different types of vegetables
* Follow verbal instructions to make a mixture
* Describe the changes the batter mix goes through as it starts to cook
* Explain how to measure

**Vocabulary****cow, pig, chicken, sheep, wheat, milk, cheese eggs** | **Unit Five:** *Forces***Substantive Knowledge to be taught*** Describe what happens when pushes and pulls oppose each other
* Suggest examples of pushes and pulls
* Identify if an action is a push or a pull
* Group objects based on whether they sink or float
* Explain what sink means
* Explain what float means

**Vocabulary****push, pull, fast, slow, sink, float, press, suck** | **Unit Six:** *Plants***Substantive Knowledge to be taught*** Explain why a plant is a living thing and what it needs to live
* Describe the features of a living thing
* Know the difference between a living and a non-living thing
* Explain the life cycle of a plant
* Label the key features of a plant
* Understand where plants come from
* Learn about how to look after plants

**Vocabulary****plant, seed, soil, water, stem, root, sunlight, garden** |
| **Year One and Two** |
| ***Unit One****: Exploring Everyday Materials 1 (Year 1)***Substantive knowledge to be taught*** Understand what a material is
* Identify a variety of everyday materials
* Describe everyday materials
* Understand that all objects are made from materials
* Identify what material an object is made from
* Understand that different objects can be made from the same material
* Give simple descriptions of everyday materials
* Describe the properties of everyday materials
* Explain why materials are chosen for particular objects
* Understand that some materials are natural and some are manmade
* Identify natural and manmade materials
* Understand that natural and manmade materials are used for different purposes
* Understand that some objects float and some objects sink
* Predict and identify if an object will float or sink
* Predict and identify if an object will float or sink and explain if my prediction was correct
* Understand that some materials soak up water
* Compare materials that are absorbent and not absorbent
* Understand that non-absorbent materials are used in objects that need to be waterproof

**Vocabulary****material, fabric, wood, plastic, metal, property, opaque, transparent** | ***Unit Two****: Exploring Everyday Materials 2 (Year 1)***Substantive knowledge to be taught*** Identify and name some materials used in building a house
* Describe the simple physical properties of materials used in building a house
* Understand the suitability of materials used in building a house
* Understand what waterproof means
* Know what materials are waterproof
* Understand why the roof of a house needs to be waterproof
* Understand that glass is transparent
* Understand why glass is used to make windows
* Explain why glass is the best material to use for windows and why other materials might be unsuitable
* Understand the properties of fabric
* Understand that a variety of materials are sometimes used to make one object
* Understand why specific materials are used to make furniture
* Understand that there are different types of fabrics
* Understand that different fabrics have different properties
* Understand that different fabrics have specific uses
* Identify and name a variety of everyday materials
* Describe the simple physical properties of a variety of everyday materials
* Explain the uses of materials and why they are suitable

**Vocabulary****strong, clay, brick, roof, slate, window pane, window frame, cotton** | ***Unit Three:*** *Animals, including Humans- All About Me (Year 1)***Substantive knowledge to be taught*** Identify the basic parts of the human body
* Identify the different parts of the human body
* Identify the different parts of the human body and explain what they are used for
* Understand that our eyes allow us to see
* Know the basic parts of the eye
* Know the basic parts of the eye and their functions
* Understand that our ears allow us to hear
* Know that our ears help us tell the direction sound is coming from
* Understand that sound is made up of vibrations
* Understand that our tongue allows us to taste
* Describe a range of different flavours
* Understand why our sense of taste is important
* Understand that our skin helps us to feel
* Know that our fingertips are sensitive to touch
* Understand that our sense of touch can identify different textures
* Know that our nose allows us to smell
* Understand that we can smell many different flavours
* Know that our sense of smell helps to keep us safe

**Vocabulary****head, body, brain, pupil, ear, sound, tongue, taste** |
| ***Unit Four:*** *Animals, including Humans 1- Growth (Year 2)***Substantive knowledge to be taught*** Understand the basic needs of animals, including humans
* Explain the basic needs of animals, including humans
* Explain how animals adapt and survive by ensuring their basic needs are met
* Understand what humans need to survive
* Explain what humans need to survive
* Know the difference between basic human needs and the things humans want
* Name the 5 food groups
* Sort food into the 5 food groups
* Explain why the 5 food groups are important for human health
* Understand the importance of a balanced diet
* Give examples of foods that form part of a healthy diet
* Understand that eating pre-cooked or processed food is not always a healthy choice
* Understand that exercising regularly is important for our health
* Know how exercise impacts our bodies
* Understand how regular exercise keeps us healthy
* Understand that we need good hygiene to remain healthy
* Explain how to have a good hygiene routine
* Explain how a good hygiene routine can stop the spread of germs

**Vocabulary****nutrition, healthy, protein, carbohydrate, dairy, fat, exercise, hygiene** | ***Unit Five:*** *Habitats (Year 2)***Substantive knowledge to be taught*** Understand that there are things that are living, dead or have never been alive
* Identify and classify objects into living, dead or never been alive
* Understand the 7 characteristics of living things
* Know the difference between a habitat and a microhabitat
* Identify and name a range of microhabitats
* Understand that living things depend on each other for survival
* Understand that living things need certain conditions to survive
* Design a microhabitat where living things could survive
* Explain why an animal may or may not be suited to certain conditions
* Understand that all animals need to eat to survive
* Find out what specific animals eat through research
* Ask diverse questions to find out what animals eat and where they find their food
* Explain what could affect a food chain
* Show how all animals and humans relate to each other in a food chain
* Describe what a food chain is
* Understand that food we eat comes from a natural source
* Identify different foods that come from the same natural source
* Explain how foods have changed from their natural source

**Vocabulary****reproduce, excrete, respire, habitat, microhabitat, survive, producer, consumer** | ***Unit Six:*** *Plants (Year 2)***Substantive knowledge to be taught*** Observe and talk about seeds and bulbs
* Draw the inside of a seed and a bulb
* Explain the difference between a bulb and a seed
* Set up an experiment to find out what plants need to grow
* Make a prediction
* Set up a fair test
* Understand that plants need space, water, sunlight and a suitable temperature to grow
* Explain how a plant makes its own food through the process of photosynthesis
* Explain that plants use carbon dioxide, sunlight and water to create glucose
* Understand the life cycle of a plant
* Produce a diagram to explain the life cycle of a plant
* Provide scientific explanations of the life cycle of a plant
* Record results and write a simple conclusion
* Compare the results to their prediction
* Explain why their plant did or did not thrive using the control plant as a comparison
* Identify and sort plants according to their habitats
* Describe what conditions might be like for plants in their habitats
* Explain how plants adapt to suit their environment

**Vocabulary****Photosynthesis, carbon dioxide, oxygen, glucose, pollination, germination, crop, forests** |
| **Year Three and Four** |
| ***Unit One:*** *Animals, including Humans (Year 3)***Substantive knowledge to be taught*** Know that there are 5 key food groups
* Explain how many portions of food from different food groups we should eat in a day
* Explain how food from each food group is essential for human growth and health
* Understand that food labels give information on the ingredients in food
* Understand that food labels help us make healthy choices
* Understand that food labels give in depth information about the different food groups within a product
* Understand that animals have different types of skeletons
* Identify which animals have an endoskeleton, exoskeleton and a hydrostatic skeleton
* Explain how animals’ skeletons help them to move and survive
* Explain the functions of the human skeleton
* Identify the main bones in the human body
* Explain the functions of the main parts of the human body
* Match animals to their skeletons
* Identify how animals’ skeletons have adapted to help them move in their environment
* Explain the functions of the bones within animal skeletons
* Understand that we have voluntary and involuntary muscles
* Become familiar with the names of some muscles in the human body
* Explain how muscles work

**Vocabulary****vitamin, mineral, nutrition label, balanced, endoskeleton, exoskeleton, radius, tibia, rib cage, spine, hamstrings, biceps** | ***Unit Two:*** *Scientific Enquiry (Year 3)***Substantive knowledge to be taught*** Give a prediction to a scientific question
* Pose a scientific question and give a prediction
* Design a scientific investigation with more than one variable and give a plausible prediction
* Take careful measurements and record results in a table
* Take careful, systematic measurements and record results in a table and, with support, use data to draw a graph
* Use data collected from an investigation to produce a graph to show results
* Write a method for a scientific investigation
* Write a comprehensive method for a scientific investigation and use it to carry out practical work
* Evaluate the effectiveness of the method after the practical investigation has been carried out
* Explain what happened during an investigation
* Explain what happened during an investigation and give scientific evidence to support the findings
* Explain scientifically the results of an investigation and suggest further lines of enquiry that could be tested
* Understand what a control test is
* Understand what a control test is and suggest variables to compare
* Understand what a control test is and carry out a fair test, varying only one aspect at a time
* Write a conclusion for a scientific investigation
* Write a conclusion for an investigation and use a scientific explanation to support the evidence
* Using results and the evidence gathered from an enquiry, pose a new question that further extends the investigation

**Vocabulary****scientific investigation, prediction, plausible, record, data, method, control experiment, equipment, enquiry, practical, conclusion, fair test** | ***Unit Three:*** *Forces and Magnets (Year 3)***Substantive knowledge to be taught*** Identify different types of forces
* Identify different types of forces and describe the effect they have on an object
* Identify different types of forces and explain how they impact the movement of an object
* Compare how things move on different surfaces
* Explain why some surfaces slow objects down
* Explain how friction can be increased or decreased
* Describe magnets as having two poles
* Name some different types of magnet
* Identify some everyday uses for magnets
* Understand how magnetic materials behave
* Identify a range of materials which are magnetic
* Compare and group materials based on their magnetic properties
* Observe how magnetic forces act at a distance
* Understand how magnetic forces can act at a distance
* Explain how magnetic forces act at a distance
* Understand what a compass is and how it works
* Understand what the four main compass points are
* Explain how a compass works

**Vocabulary****force, friction, motion, texture, magnet, attract, repel, magnetic field, non-contact force, magnetism, compass, orienteering** |
| ***Unit Four:*** *Plants (Year 3)***Substantive knowledge to be taught*** Plan and set up an experiment that compares the effect of different factors on the growth of a plant
* Set up a fair test
* Ask scientific questions and suggest different ways to answer them
* Identify the parts of plant
* Draw and label a diagram to show the parts of a plant
* Describe the functions of a flowering plant
* Understand how water is transported within plants
* Create an observational drawing to show how water is transported through a plant
* Describe how water is transported through a plant
* Identify the reproductive parts in a flower
* Explain the functions of the reproductive parts in a flower
* Explain how flowering plants reproduce
* Understand that seed dispersal is a way in which some plants reproduce
* Provide an explanation, both written and verbal, to show how plants reproduce
* Use scientific language to describe how plants reproduce
* Explain the results of an experiment
* Write up the results of an experiment
* Provide a conclusion using scientific language and diagrams

**Vocabulary****fertiliser, potassium, chlorophyll, photosynthesis, xylem, phloem, anther, filament, stomata, transpiration, pollen, nectar** | ***Unit Five:*** *Living Things and their Habitats- Conservation (Year 4)***Substantive knowledge to be taught*** Understand that ecosystems are affected by changes in the seasons
* Understand that habitats around the world experience different seasons which changes their ecosystem
* Understand that it is not just the seasons which cause ecosystems to change
* Understand human impact on the environment through deforestation
* Use scientific evidence to present your findings about deforestation
* Explore the measures humans can take to protect the rainforests
* Understand what air pollution is
* Explore what contributes to air pollution
* Identify the impact air pollution has on the environment and human health
* Understand how water pollution is caused
* Explain the impact of different kinds of water pollution
* Identify how to prevent water pollution
* Understand that it is important to conserve water
* Suggest ways to conserve water
* Explain how to conserve water and the consequences of water shortages
* Understand that there are ways humans can protect the environment
* Suggest ways in which humans can protect the environment
* Explain how humans can protect the environment in our everyday life

**Vocabulary****migrate, monsoon, deforestation, biodiversity, emissions, pollution, pesticide, contaminate, drought, fresh water, marine sanctuaries, conservation areas** | ***Unit Six:*** *Light (Year 3)***Substantive knowledge to be taught*** Identify light sources
* Understand the difference between natural and artificial sources of light
* Explain why certain objects are sources of light and why others are not
* Understand that sunlight can damage our skin and our eyes
* Observe the effectiveness of suncream as protection against the sunlight
* Using scientific evidence, explain the effectiveness of suncream as protection against the sunlight
* Understand that some objects are a light source and some are reflectors
* Identify materials that are good reflectors
* Explain why some materials are better reflectors than others
* Understand that a shadow is formed when an object blocks the light
* Explain how a shadow is formed when an opaque object blocks the light
* Understand that the size of a shadow changes when it is moved further from the light
* Understand that shadows change throughout the day
* Explain how shadows change throughout the day
* Explain how and why shadows change throughout the day
* Understand that the size and shape of a shadow can change
* Know how to change the size and shape of a shadow
* Explain why the size and shape of a shadow can change

**Vocabulary****light, reflect, vitamin D, ultraviolet rays, fluorescent, high visibility, shadow, ray, cast, position, shape, puppet** |
| **Year Five and Six** |
| ***Unit One****: Animals, including Humans (Year 6)***Substantive knowledge to be taught*** Describe the structure and function of the heart
* Identify oxygenated and deoxygenated blood
* Describe how blood moves around the heart
* Define the function of different blood vessels
* Explore issues surrounding restricted arteries
* Explain the movement of blood through the heart
* Describe and explain the composition of the blood
* Explain the function of cells within the blood
* Explain how water and nutrients are transported
* Accurately measure pulse
* Design an investigation associated with heart rate, diet and exercise
* Define and explain the importance of osmosis and diffusion
* Describe how lifestyle choices can affect health
* Define the uses of different drugs
* Describe the impact of drugs and alcohol on health
* Describe some drugs used to support the circulatory system

**Vocabulary****circulatory system, BPM, diet, pulse, oxygenated, deoxygenated, atrium, ventricle, vessel, valve, diffusion, osmosis** | ***Unit Two:*** *Changes of Materials (Year 5)***Substantive knowledge to be taught*** Describe how evaporation can be used to get the salt back from salty water
* Use the results of an evaporation experiment to explain which mystery liquid is a solution
* Suggest a method to recover the water from a salt water solution and explain why this method works
* Identify methods for reversing a physical change
* Describe how the method used to reverse a physical change works
* Evaluate the strengths and weaknesses of the method chosen and suggest improvements
* Name some irreversible changes
* Use observations to describe how you can tell an irreversible change has taken place
* Explain why the change is irreversible and what new products have been made
* Identify rusting as an irreversible change
* Plan an experiment to investigate rusting and include how to make it a fair test
* Explain why rusting is an irreversible change, why it is a problem and how to prevent it
* Identify the 3 factors a fire needs to burn
* Describe and explain 3 methods for extinguishing a fire
* Apply knowledge of the fire triangle to alternative extinguishing methods
* Predict best substances used to make the fizzy rocket
* Use experiment results to test a prediction and write a conclusion to show the best substances to make a fizzy rocket
* Use measuring equipment to suggest ways to improve the accuracy of the observations made in the experiment

**Vocabulary****Solute, solvent, reversible, evaporate, chemical change, effervescence, fair test, corrosion, combustion, extinguish, reaction, carbon dioxide** | ***Unit Three:*** *Forces (Year 5)***Substantive knowledge to be taught*** Explore the life and work of Isaac Newton
* Understand the influence gravity has on the universe
* Investigate the relationship between mass and gravity
* Understand how air resistance acts on objects
* Design and test parachutes, using averages to get more accurate results
* Draw an accurate diagram of the forces acting on a parachute and explain their purpose
* Understand how water resistance acts on objects
* Describe the forces acting on an object floating in water
* Identify the similarities and differences between air and water resistance
* Understand how friction acts on objects
* Accurately use a Newton meter to measure a force
* Describe ways of changing the size of a frictional force
* Name the forces acting on a range of objects
* Describe the effect forces can have on an object
* Explain how gears work and their purpose
* Create a set of interacting gears
* Notice patterns in the working of gears

**Vocabulary****Sir Isaac Newton, Gravity, Galileo Galilei, parachute, water resistance, streamlined, buoyant, upthrust, friction, newton, lever, pulley** |
| ***Unit Four:*** *Properties of Materials (Year 6)***Substantive knowledge to be taught*** Group materials according to their properties
* Carry out a fair and comparative test to group materials according to their properties
* Use results from a fair and comparative test to explain how the properties of materials enable them to be suitable for a specific task
* Identify materials that are thermal conductors
* Carry out a fair and comparative test to test the thermal conductive properties of materials
* Use results from a fair and comparative test to explain how the thermal conductive properties enable them to be suitable for a specific task
* Investigate the hardness of materials
* Carry out a fair and comparative test to test the hardness of materials
* Use results from a fair and comparative test to explain how the hardness of materials enables them to be suitable for a specific task
* Understand what the term dissolve means
* Investigate and identify which materials are soluble and insoluble in water
* Using results of the investigation, consider which solutions could be reversed
* Ask questions that explore the solubility of a solute
* Design an investigation that tests the solubility of a solute
* Present the findings from an investigation that tests the solubility of a solute
* Identify the different separation methods
* Describe the processes of different separation methods
* Explain the most effective separation methods for various materials

**Vocabulary****conductive, magnetic, thermal, conduction, hardness, force, dissolve, solute, solvent, substance, filtering, evaporation** | ***Unit Five:*** *Looking After Our Environment (Year 6)***Substantive knowledge to be taught*** Describe the difference between climate and weather
* Explain the effects of climate change
* Explain how planting trees can help reduce climate change effects
* Understand what recycling is
* Understand what happens to waste that is sent to landfill
* Suggest ways in which the school can reduce the amount of waste that is sent to landfill
* Understand the energy that the UK uses comes from
* Understand the difference between renewable and non-renewable energy
* Suggest ways to reduce the amount of energy used
* Understand what the Industrial Revolution was
* Observe what happens when combustion takes place
* Explain how the Industrial Revolution played a part in climate change
* Understand what COP is and what they want to do
* Understand what was agreed at the last COP meeting
* Suggest ways to make sure that COP targets are met
* Identify the effects of climate change of animals and habitats
* Analyse the data that has been collected
* Use data comparisons to predict future trends

**Vocabulary****weather, global warming, recycle, biodegrade, net zero, greenhouse gases, industrial revolution, combustion, COP, conference, species, habitat** | ***Unit Six:*** *Living things and their habitats (Year 6)***Substantive knowledge to be taught*** Explain how living things are classified by designing their own chart and comparing their size
* Describe how to classify a range of living animals and plants
* Identify ways to differentiate living things
* Explain a key feature or member of each animal kingdom
* Understand MRS GREN and how a living organism follows these rules
* Know that living organisms can be arranged into kingdoms
* Explain how different organisms can be classified using the Linnaean System
* Understand how an animal can be classified depending on its characteristics
* Use research to help classify a living organism
* Represent research and data in a creative way to summarise knowledge
* Know and explain that microorganisms are both helpful and harmful
* Understand that microorganisms are microscopic and cannot be seen with the naked eye
* Explain the difference between fungi and other organisms
* Outline the similarities between plants and fungi
* Identify that fungi are a separate kingdom to plants
* Describe, represent and present data about a living organism
* Describe and represent data about a member of the animal kingdom

**Vocabulary****Classification, microorganism, habitat, living organism, species, microscopic, ecosystem, kingdom, Linnaean System, cell** |

**Disciplinary Knowledge**

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|  | Planning and Communication and Sources | Enquiring and Testing and Obtaining and Presenting Evidence | Observing and Recording | Considering Evidence and Evaluating |
| Y1 | * draw simple pictures
* talk about what they see and do
* use simple charts to communicate findings identify key features
* ask questions
 | * test ideas suggested to them
* say what they think will happen
* use first hand experiences to answer questions
* begin to compare some living things
 | * make observations using appropriate senses
* record observations
* communicate observations orally, in drawing, labelling, simple writing and using ICT
 | * make simple comparisons and groupings
* say what has happened
* say whether what has happened was what they expected
 |
| Y2 | * describe their observations using some scientific vocabulary
* use a range of simple texts to find information
* suggest how to find things out
* identify key features
* ask questions
 | * use simple equipment provided to aid observation
* compare objects, living things or events
* make observations relevant to their task
* begin to recognise when a test or comparison is unfair
* use first hand experiences to answer questions
 | * put forward own ideas about how to find the answers to questions
* recognise the need to collect data to answer questions
* carry out a fair test with support
* recognise and explain why it is a fair test with help, pupil
* begin to realise that scientific ideas are based on evidence
 | * say what has happened
* say what their observations show and whether it was what they expected
* begin to draw simple conclusions and explain what they did
* begin to suggest improvements in their work
 |
| Y3 | * use pictures, writing, diagrams and tables as directed by their teacher
* use simple texts, directed by the teacher, to find information
* record their observations in written, pictorial and diagrammatic forms
* select the appropriate format to record their observations
 | * put forward own ideas about how to find the answers to questions
* recognise the need to collect data to answer questions
* carry out a fair test with support
* recognise and explain why it is a fair test
* with help, pupils begin to realise that scientific ideas are based on evidence
 | * make relevant observations
* measure using given equipment
* select equipment from a limited range
 | * begin to offer explanations for what they see and communicate in a scientific way what they have found out
* begin to identify patterns in recorded measurements
* suggest improvements in their work
* evaluate their findings
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| Y4 | * record observations, comparisons and measurements using tables and bar charts
* begin to plot points to form a simple graph
* use graphs to point out and interpret patterns in their data
* select information from a range of sources provided for them
 | * with help, pupils begin to realise that scientific ideas are based on evidence
* show in the way they perform their tasks how to vary one factor while keeping others the same
* decide on an appropriate approach in their own investigations to answer questions
* describe which factors they are varying and which will remain the same and say why
 | * carry out measurement accurately
* make a series of observations, comparisons and measurements
* select and use suitable equipment
* make a series of observations and measurements adequate for the task
 | * predict outcomes using previous experience and knowledge and compare with actual results
* begin to relate their conclusions to scientific knowledge and understanding
* suggest improvements in their work, giving reasons
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| Y5 | * record observations systematically
* use appropriate scientific language and conventions to communicate quantitative and qualitative data
* select a range of appropriate sources of information including books and the internet
 | * use previous knowledge and experience combined with experimental evidence to provide scientific explanations
* recognise the key factors to be considered in carrying out a fair test
 | * make a series of observations, comparisons and measurements with increasing precision
* select apparatus for a range of tasks
* plan to use apparatus effectively
* begin to make repeat observations and measurements systematically
 | * make predictions based on their scientific knowledge and understanding
* draw conclusions that are consistent with the evidence
* relate evidence to scientific knowledge and understanding
* offer simple explanations for any differences in their results
* make practical suggestions about how their working methods could be improved
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| Y6 | * choose scales for graphs which show data and features
* effectively identify measurements and observations which do not fit into the main pattern
* begin to explain anomalous data
* use appropriate ways to communicate quantitative data using scientific language
 | * describe evidence for a scientific idea
* use scientific knowledge to identify an approach for an investigation
* explain how the interpretation leads to new ideas
 | * measure quantities with precision using fine – scale divisions
* select and use information effectively
* make enough measurements or observations for the required task
 | * make reasoned suggestions on how to improve working methods
* show how interpretation of evidence leads to new ideas explain conclusions, showing understanding of scientific ideas
 |