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 |
| 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 |
| 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 |
| 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 |