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|  | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
| Foundation | **Understanding the World**  **The Natural World**  **Me and My Family**  **Questioning and Enquiring: Asking questions.**  **Scientific Knowledge: Observe seasonal changes.**  **Vocabulary: Simple scientific language.**  Discussions about their families and their homes  Autumn Leaves and conkers available for exploration  Daily discussions about the weather and seasons. | **Understanding the World**  **The Natural World**  **Winter Wonderland**  **Observing, measuring, pattern seeking: Observe changes over time.**  **Vocabulary: Use some simple scientific language.**  Explores ice and water and talk about the changes I have noticed.  Beginning to develop an understanding of growth, decay and changes over time.  Ice experiments.  Fruit Decay experiments. | **Understanding the World**  **The Natural World**  **Aliens**  **Questioning, enquiring and planning: Ask simple questions.**  **Observing, measuring pattern: Use simple observations and ideas.**  **Small world role-play moon/space landing**  **Make an alien – what would they be like? Different humans?**  **Construction area**  **Investigation table**  **Gardening area** | **Understanding the World**  **The Natural World**  **People Who Help Us**  **Observing, measuring, pattern seeking: Observe patterns and relationships.**  **Vocabulary: Use some simple scientific language.**  Describe what I see, hear and feel whilst outside.  Recognise some environments that are different to the one in which they live.   Understand the effect of changing seasons on the natural world around them.   Enjoy reading books to find out about changes and growing.  Garden observation – signs of spring  Non-fiction books about seasons (investigation table) | **Understanding the World**  **The Natural World**  **On the Farm**  **Observing, measuring, pattern seeking: Use simple observations and suggest answers to questions.**  **Vocabulary: Use some simple scientific language.**  Explore the natural world around them, making observations and drawing pictures of animals and plants.    Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.   Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter  Changing seasons – what happens on a farm at different times of the year? | **Understanding the World**  **The Natural World**  **Water/the Sea**  **Questioning and enquiring: Ask simple questions.**  **Observing, measuring, pattern seeking: Use simple observations and ideas. Observe simple changes over time.**    Explore the natural world around them, making observations and drawing pictures of animals and plants.    Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.   Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.  Virtual Aquarium Tour  **Make smoothies, cheese straws, picnic for the beach**  **What do sea creatures eat?**  **Discuss the care of the environment – litter at the beach and in the oceans.** |
| Year 1 | **Travel and Transport**  1) Can you sort vehicles by the materials they are made from?   Identify and classify objects with support  - Distinguish between an object and the material it is made from  - Begin to compare and describe materials  - Use comparative language with support .  2) Which vehicle will travel the fastest?  - Perform simple tests with support  - Observe closely  - Use observations and ideas to suggest answers  - Begin to say what happened in an investigation  3) How many objects will the boat hold before it sinks?  - Perform simple tests  - Observe closely  - Gather and record data to answer questions  - Begin to talk about whether they were surprised by the results | **Seasons/plants**  1)Do all leaves change colour in Autumn?  - Identify and name common plants including deciduous and evergreen trees.  2) What do plants need to grow?  - Identify and describe the basic structure of common flowering plants.  3)  **Can you name and describe the parts of a flower?**  - Identify and describe the basic structure of common flowering plants. | **Senses**  1) What are the five senses and which body part do we use for each of them?  Name the five senses: touch, sight, smell, hearing, taste  Know what my senses do  Know which body parts I use for each sense.  2) **How can we use other senses if our sight sense is taken away?**  Observe what it is like to observe without sight  Record information  Use observations and ideas to suggest answers  To begin to say what happened in an investigation  Begin to say what they may change about their investigation .  3) **How can we use our touch sense to identify different objects?**  Perform simple investigation  Observe closely  Gather and record data to answer questions  Begin to talk about whether they were surprised by the results.  4) **Which foods are salty sweet bitter or sour?**  Explore sense of taste  Recognise things as salty sweet bitter or sour.  5) **Which mystery smell is that?**  Make observations about different smells  Make comparisons about smells  Carry out a simple test  To begin to say what happened in an investigation .  6) **What bone/ body part is that?**  Identify, name, draw and label parts of the human body. | **Animals**  **1)** What do you already know about animals?  To use simple features to compare living things.  2)How can we sort animals into different groups?  Identify different animals  Begin to classify different animals  Start to comparing animals  Describe the features of animals  Know how to sort and group animals  3)What do different animals eat?  Understand that animals have different diets  Perform simple tests  Observe closely  Use notes and clues to answer questions  Predict  Begin to talk about whether they were surprised by the results.  4)What are carnivores, herbivores and omnivores?  Identify, classify and name some animals that are Carnivores, Herbivores and Omnivores.  5) How can we tell animals apart?  Describe and compare the structure of a variety of common animals.  6)Which group does an animal belong to?  Identify and classify animals by suggesting groups they may belong to. | **The Weather (Planning to be reviewed. No BQs on planning – these are put in by SL from theme of lesson and may be changed)**  1)What do I know about the weather?  Generate questions about weather.  Bring to the lesson facts they already know about the weather  2)How can we measure rainfall?   Use simple measurements and equipment to collect data.  3)What is a puddle?  Explore properties of water  Observe how puddles change over time  Measure and observe the changes in puddles over time  Make predictions  Raise questions about puddles and the weather.  4) What happens to puddles over time?  Perform exploration into puddles  Observe closely the changes in depth and length of puddles  Gather and record data   Begin to talk about whether they were surprised by the results.  Discuss findings  Begin to use scientific language.  5)Why do shadows change?  Know that shadows change during the day .  Know that the day length changes each day and varies from season to season. | **Superheroes (Planning to be revamped – this is overall theme. No BQs on planning – these are by SL from theme of lesson and may be changed.)**  1)How can we mend our umbrella?  **Working Scientifically**  Begin to observe and identify, compare and describe with some support.  Begin to use simple features to compare objects, materials and living things and with help, decide how to sort and group them.  Use their observations and ideas to suggest answers to questions  **Everyday materials:**  Distinguish between an object and the material from which it is made  Identify and name a variety of everyday materials  Describe the simple physical properties of a variety of everyday materials  2) Which materials are waterproof?  **Working Scientifically**  Observe closely, using simple equipment  Perform simple tests with support.  Gather and record data with some adult support, to help in answering questions.  Begin to record simple data.  Begin to record and communicate their findings in a range of ways.  Show their results in a simple table that the teacher has provided.  Begin to say what happened in their investigation.  3)Which is the best waterproof material?  **Working Scientifically**  Use their observations and ideas to suggest answers to questions  **Everyday materials:**  Distinguish between an object and the material from which it is made  Identify and name a variety of everyday materials  Describe the simple physical properties of a variety of everyday materials  4)Does our umbrella work in the wet?  **Working Scientifically**  Use their observations and ideas to suggest answers to questions  Begin to talk about what they have discovered and how they found it out.  Begin to say what happened in their investigation.  Begin to talk about whether they were surprised by their results or not.  Begin to talk about what they would change about their investigation.  **Everyday materials:**  Distinguish between an object and the material from which it is made  Identify and name a variety of everyday materials  Describe the simple physical properties of a variety of everyday materials  5) What did we discover from our umbrella investigation?   Use some simple scientific language.  Begin to use some science words.  Use comparative language with support.  **Everyday materials:**  Distinguish between an object and the material from which it is made  Identify and name a variety of everyday materials  Describe the simple physical properties of a variety of everyday materials . |
| Year 2 | **Animals including Humans**  1)How does a chick change and grow?  Label each stage of the cycle from egg to chicken. Observe, measure, identify patterns .Make close observation of feathers and eggs and draw  2). How will I change as I grow up?  Understand how babies change over time what similarities they may have.  3) What do I need to survive?  Describe what is needed for animals, including humans, to stay alive. Use own lives to think about these needs.  4) How does exercise make me feel? Describe in context words describing activity; perform simple tests; take measurements and log data from physical activity.  5) What food group does this healthy or unhealthy food belong in?  Recognise what is healthy and not healthy; know about varied food groups in diet;  locate information to identify when something is healthy or unhealthy.  6) What’s in a healthy lunchbox? ( REVISITED IN TERM 3 WITH HEALTHY PICNIC WHERE CHILDREN WILL BE ASKED TO MAKE FOOD AND EVALUATE IT.)  Understand when a group of food items is healthy or unhealthy; know why things are healthy or unhealthy; know what is suitable for different people/ages and design a lunch box accordingly. | **Living Things and Their Habitats**  1)Is it dead or alive?  Classify and group :to know that it is difficult to to tell the difference between each category. Research: What can we use to help us know where to categorise something.  2)Where and what will I find in a microhabitat?  Question and enquire : to explore the world around us Observe and seek :explore the school grounds on the hunt for microhabitats.  Observe closely using simple equipment. Scientific knowledge and vocabulary:to describe what they have seen and learnt about microhabitats.  3)How many main habitats are there in the world?  Scientific knowledge and vocabulary To describe what they have seen and learnt about habitats To know the difference between a microhabitat and a larger habitat.  Scientific knowledge Name different habitats around the world. Research Use different sources to find out about habitats and what might live there.  Knowledge and vocabulary: to describe what they have seen.  4)Why do animals live where they do?  Research:use different sources to find out about habitats and what might live there.  Conclusions : research creatures in larger habitats and ask: why do these living things live there?  Record findings :create dioramas of different habitats and label with research information.  5)Who is top of the food chain?  Vocabulary Understand that, in a healthy habitat, all living things depend on each other in different ways. Use comparative words to describe food chains. Scientific knowledge Accurately describe each stage of the life cycle.  6)Where would a bug like to live?  Scientific knowledge and research Use knowledge of habitats and where they have read about suitability of habitats for different animals . | **Uses of Everyday Materials.**  **1)**What will help me to soak up this water?  **FOR LESSONS 1 TO 4**  Scientific knowledge - understand how everyday materials can be used for more than one thing and for the same thing. ;Understand why the properties of materials make them suitable or unsuitable for particular purposes.  Observe and measure -observe closely using simple equipment.; use observations to suggest answers to questions.  Record and report ;record simple data and record findings.  Conclusions ;make conclusions about properties of materials from investigation.  **2)**Can every material be used to absorb liquid?  **3)**What material will keep me dry?  **4)**What makes an object good for printing?  **5)**Why is my crayon bendy?  Scientific knowledge - understand how everyday materials can be used for more than one thing and for the same thing. ;understand why the properties of materials make them suitable or unsuitable for particular purposes.  Investigating :erform simple tests Say what happened in  the investigation. Understanding: know that science can sometimes be dangerous when trying to find out about scientific terminology.  **6)**What material can change shape and why does this happen?  Scientific knowledge :explain scientifically how materials become solid, liquid, waterproof-able, etc ; answer questions using specific vocabulary explaining the mould ability and changeability of materials by twisting, bending, melting, etc  Vocabulary: use simple scientific language and terminology  Conclusions : make simple statements about materials and their properties using what they have found out from a range of investigations. | **Everyday materials and how they can change.**  **1)**Which ball would be best to play basketball with?  **THESE CAN BE APPLIED TO ALL OF THE LESSON IN THIS UNIT** Scientific knowledge: understand how everyday materials can be used for more than one thing and for the same thing.;understand why the properties of materials make them suitable or unsuitable for particular purposes.; recognise that squashing, bending and stretching can change shapes of solid objects made from some every day materials.  Vocabulary : use scientific language and words in context. Questioning and enquiring : ask questions and recognise that they can be answered in different ways. Observing, measuring, pattern seeking Observe closely using simple equipment Use observations and ideas to suggest answers to questions. Investigating Perform simple tests. Discuss their ideas about how to find things out. Recording and reporting Gather and record data to help.  **2)**Which fabric will stretch the most?  **3)** What can bend without breaking?  **4)** Is this material going to last a long time?  **5) and 6)**  What paper will hold my car for the longest? | **Plants**  1)What are the parts of a tree called?  Questioning Observing :begin to recognise that these questions can be answered in different ways.  Observe closely using simple equipment .  **2)** How can I help this seed grow?  Record and report: gather and record data to help in answering questions. Record simple data.  **3)**  What is the life cycle of a plant?  Scientific knowledge : observe and describe how seeds and bulbs grow into mature plants.  4)What does my plant need to survive?  Recording and reporting: Observe closely, using simple equipment. Use observations and ideas to suggest answers to questions.  **5)** What will stop my plant growing?  Research To use simple secondary sources to find answers.  **6)** Why do plants grow differently?  Conclusions: say what happened in their investigation. Talk about whether they were surprised by their results or not. | **Plants (continued)**  **7)** Do seeds all look the same? Identifying , grouping and classifying Observe and identify, compare and describe.  8) How do seeds travel?  Research To use simple secondary sources to find answers.  9) What part can I eat ?  Identify and classify. Observe and identify, compare and describe. Use simple secondary sources to find answers.  Can find information from books and computers with support. |
| Year 3 | **Plants**  1)What are the different parts of a plant?  Describe the functions of different parts of plants.  2) What does a plant need for life and growth?  Explore the requirements of plants for life and growth.  Setting a fair test, variables, controls, prediction, observations.  3) What are the different parts of a flower?  Identify the different parts of a flower and understand their function.  4) What is the life cycle of a flowering plant?  Explain the life cycle of flowering plant.  5)How are   seeds dispersed?  Explain different methods of seed dispersal eg. dropping, eating, carrying, shaking, bursting.  6) How does water get transported inside a plant?  Observe the way in which water is transported within plants.  Setting a fair test, variables, controls, prediction, observations.            . | **Forces and Magnets.**  1) On which surface will the car travel the furthest?  Compare how things move on different surfaces.  2) Which objects are magnetic?  Sort materials by their magnetic properties.  3) What can we find out about magnets?  Investigate properties of magnets with a series of investigations.  Working Scientifically:  Predicting  Controls  Variables  Recording  Analysing  Concluding  Fair Test  4) What did we find out about magnets?  Describe properties of magnets from discussion of activities and investigations from Session 3.  5) Do all magnets have the same magnetic  strength?  Investigate different strengths of magnets.  6) Can you design a game which uses magnets?  Make a game using magnets – consolidation of knowledge from previous sessions. | **Animals including Humans: Muscles and Skeletons.**  **1)** What is the job of a skeleton?  Explain the jobs that a skeleton does - support, movement, protection.  2) What bones are in the human body?   Name some of the bones in a human body- Observe the skeleton of a human body.  Identify larger bones in the body (eg skull, bones etc.)  3) How are the skeletons of vertebrates similar/different from each other?  Compare the skeletons of other vertebrates.  4) How can skeletons be classified?  Classify other types of skeletons.  5) How do our muscles help us move?  Explain how muscles help us move.  6) How do humans and animals get the nutrients they need?   Explain how humans and animals get the nutrients they need. | NO SCIENCE TOPIC FOR THIS HALF TERM. | **Rocks and Fossils**  1) What are the features between different types of rocks?  Describe and compare different types of rock.  2) What different ways can we sort rocks into groups?  Sort different rocks into groups:  begin to see a pattern in their observations;begin to record findings using scientific language;   begin to use notes to help to decide how to record findings;  begin to compare and group according to behaviour or properties based on testing; use secondary sources to investigate rocks; begin to use scientific language.  3) **What is soil made from?**  Recognise that soils are made from rocks and organic matter.  4) **What is a fossil and where do they come from?**  Understand what fossils are and how they are formed.  5) **What rocks are in the environment  around school?**  Examining rocks in the immediate environment.  6) **What have I learnt about rocks and fossils?**   Consolidation -creating a poster demonstrating knowledge of rocks and fossils. | **Light and Shadow**  1) What is the purpose of light when seeing things?  Recognise that light is needed to see things, and that darkness is the absence of light.  2) What happens when light shines on a reflective surface?  Notice that light is reflected from surfaces; make predictions; record measurements using own scale;set up a simple practical enquiry, comparative and fair test.  3) How can you change the direction of light?  Notice that light is reflected from surfaces; investigate how to change the direction of light.  4) What is a shadow?  Recognise that shadows are formed when the light from a light source is blocked.  5) What makes a shadow change size?  Find patterns in the way that the size of shadows  change.  Investigate what happens when   the distance between the object and the light source is changed.  6)What makes a shadow change size at different times in the day and why?  Find patterns in the way that the size of shadows changes.  7) Why do we need to protect our eyes from the sun?  Recognise that light from the sun is dangerous and that there are ways to protect the eye from the sun’s rays. |
| Year 4 | **States of Matter**  1)What are the different states of materials and how can we sort them?  Askrelevant questions, using different types of scientific enquiries to answer them. Make systematic and careful observations.  Report on findings from enquiries, including oral explanations.  Use straightforward scientific evidence to answer questions or to support their findings.  2) What is a gas?  Answer questions about gas using evidence from scientific enquiries and to record findings using drawings.  3)Do some materials change when they are heated or cooled?  Understand, through practical tasks, that materials change state when they are heated or cooled and to describe this process using scientific language.  Read the temperature from a thermometer, including those below zero.  4)Does Water disappear on a hot day?   Ask a question about evaporation and set up a practical enquiry that will provide the scientific evidence to answer it.  5) What is the water cycle?  Know that water moves in a cycle due to changes in temperature causing the water to change from one state to another.  6) Presentation to an audience  Present learning in the role of a science expert, to visitors of the ‘Science Fair’. | **Electricity**  **1)** What is electricity and what is it used for?  Identify common appliances that run on electricity.  2) Is electricity always safe?  Identify dangers associated with electricity in the home and begin to recognise that these are often associated with materials that are good conductors.   Design and make an electrical safety poster.  3) How can I make a circuit?  Construct a simple circuit, identifying the basic parts and to label a diagram of the circuit.   Predict if different ‘circuit’ layouts will light a bulb, and then test predictions.  4) Does every material conduct electricity and why is this important?.  Open and close a circuit with a switch and predict and test which other materials could be used to conduct electricity.  Record findings and draw conclusions about materials used to make electrical circuits, and materials used to keep us safe from electrical circuits.  5 and 6) Can I make a light up Christmas card with a working light?  Construct a simple series electrical circuit, including cells, wires, LEDs and a switch in context of a light-up Christmas card. | **Sound**  **1)** What sounds can I hear around school? How are these sounds made?  Ask and answer questions about the sounds that can be heard and begin to consider how sounds are made.  2) How do we hear things?  Explain that sounds are made when an object vibrates and that we hear sounds when vibrations travel from a source through a medium to our ears. Recognise why sounds get fainter when you are further from the source of the sound.  3) What does the pitch of a sound mean?  Begin to understand that sounds can vary by pitch and volume and to explore how to change sounds that an instrument can produce.  4) How do we hear sounds?  Use knowledge about the world to ask and answer questions about the hearing of humans and other animals. Understand that sound travels slower than light.  5) How can I make a sound quieter?  Investigate sound-proofing materials by planning and conducting a fair test, considering all the variables and how to record the results.  Design functional and appealing ear-defenders for young people to wear at music concerts.  6) How can we investigate sound?  Answer questions about the results of the investigation into sound reduction and demonstrate understanding of sound, including how it is made and how it travels.  Evaluate product and consider what improvements they could make. | **Animals including Humans**  **1)** What is the human digestive system?  Identify and name parts of the human digestive system.  2) What parts make up our digestion system?  Explain the functions of the digestive system.   Use scientific evidence to answer questions.  3) Why aren’t all teeth the same?  Identify the types and functions of teeth.   Identify similarities and differences related to scientific ideas.  4) How can we find out how and why teeth decay?   Ask scientific questions and choose a scientific enquiry to answer them.  Create an enquiry or test.  5) Do different liquids affect teeth in different ways?  Make careful observations, appropriately record  results and use them to develop further investigations.  6) What are the different parts of a food chain?  Construct and interpret food chains. | **Living things and their Habitats**  **1)** How do we know if something is alive?  Understand characteristics of living things and begin to consider that living things can be grouped in a variety of ways.  2) Which animals live in the local environment?  Ask questions about the local habitats and observe and record the living things in the local area.  3) How can we sort animals in to different groups?  Observe features of living things and sort them into different groups.  Create a branching database.  4) How do scientists understand differences between animals?  Know that scientists are able to classify living things by closely observing them.  Look at the work of artist Levon Biss and record details of local living things using close observational drawings.  5) Can we spot small details to help classify insects?  Observe tiny details that help scientists to further classify living things and to record these details in a careful drawing of insects.  6) Can we make a branching database to identify animals?  Create and use a classification key to name a variety of living things in the wider environment.  Explain to a younger audience how to group living things and to lead them in a questioning game. | **Living things and their Habitats – Environmental Changes**  1) How has our local environment changed?  Consider how the local environment has changed and why these changes may have happened.  Discuss positives and negatives of a proposed change to the local environment.  2) How do changes in the environment impact on animals?  Consider some of the natural changes that could happen to an environment and understand what some living things can do to survive such changes.    3) Is the temperature in the environment important?  Use a simple enquiry to demonstrate the effect of a greenhouse and relate this to climate change.  Draw a graph of temperatures recorded over time.  4) What impact do changes to the environment have?  Recognise that changes to an environment can be dangerous to living things.  Begin to understand what can be done to reverse some of the changes.  5) What changes can we make to help the environment?  Plan positive changes to a local environment and use evidence to answer questions about why they are making the changes.  6) How can individuals help with environmental change?  Know that if an environment changes it can be dangerous to living things and to explain why.  Explain to others why the changes to the local area are being made. |
| Year 5 | **Lifecycles**  1)How do plants reproduce?  Understand the process of sexual reproduction in plants. Explain sexual and asexual reproduction in plants. Identify the function of the parts of a flower. Describe different methods of pollination.  2) Why can some plants reproduce asexually?  Understand how asexual reproduction occurs in plants. Identify advantages and disadvantages of sexual and asexual reproduction in plants. Explain different ways to make new plants.  3)Are all animal lifecycles the same?  Understand the process of reproduction in mammals. Describe features of different groups of mammals. Describe and compare the life cycles of different mammals  4)Why is Jane Goodall important to chimpanzees?  Describe the process of reproduction and the life cycle of a mammal by exploring Jane Goodall’s work with chimpanzees.  5)What does metamorphosis mean?  Describe the differences in the life cycles of an amphibian and an insect by understanding differences between complete and incomplete metamorphosis.  6)Do all animals start from an egg?  Compare life cycles of plants, mammals, amphibians, insects and birds. Identify the stages of a bird’s life cycle. Identify the similarities and differences between different plant and animal life cycles. | **Materials and their properties.**  **1)**What makes materials different from each other?  Describe the properties of a given material. Explain the uses of different materials, based on their properties. Sort and compare materials according to their properties.  **2)** How can we select materials for a specific purpose?  Identify thermal conductors and insulators. Explain what thermal conductors and  insulators are. Plan and conduct an investigation into thermal conductors and insulators. Give reasons for the uses of thermal conductors and insulators.  **3)**Which materials are electrical conductors?  Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic by investigating the best electrical conductors.  **4)**Do soluble materials disappear?  Describe dissolving. Explain the difference between melting and dissolving. Identify materials which will dissolve in water. Investigate factors which affect the speed of dissolving.  **5)**What can we use to separate mixtures of materials?  Identify different ways materials can be mixed together. Use sieving, filtering, evaporating and other processes  to separate mixtures of materials. Know which processes to use to separate mixtures.  **6)**What happens in irreversible reactions?  Can identify irreversible chemical changes; explain irreversible chemical changes; describe new materials created in irreversible chemical changes. | **Scientists and Inventors**  **1)**What does a naturalist and animal behaviourist do?  Researching using the internet and other sources. Begin to identify which secondary sources will be most useful to research their ideas. Begin to select and use correct scientific vocabulary.  **2)** How do CSI technicians help to solve crimes?  Use knowledge of solids, liquids and gases to decide how mixtures might be separated in the context of using chromatography to solve a ‘crime’.  **3)**What is the connection between Eva Crane and bees?  Describe the life process of reproduction in some plants and animals in the context of Eva Crane’s research into the life cycle of bees.  **4)** How do we classify materials by their properties?  Compare and group everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets in the context of finding materials appropriate for a particular use.  **5)**Are the proportions of the Vitruvian Man accurate?  Plan scientific enquiries to answer questions (in the context of checking the accuracy of the pr5)oportions described in da Vinci’s Vitruvian Man.)  **6)**Was Stonehenge constructed as a calendar?  Identify evidence to support or refute ideas in the context of theories surrounding alignment of the stones at Stonehenge and its original use. | **Space**  **1)** What do we want to know about Space?  Record current knowledge of the topic. Separate opinion from fact.  2) How do we know that the Sun, Earth and Moon are spherical?  Describe the Sun, Earth and Moon as approximately spherical bodies by understanding how this knowledge has been attained. Identify scientific evidence used to support or refute  ideas or arguments in the context of how ideas changed from a flat earth view.  3) What is the order of the planets from the Sun?  Describe the movement of the Earth, and other planets in the Solar System, relative to the Sun.  4) How do the planets move around the Sun?  Describe the geocentric and  heliocentric theories of planetary movement. Identify scientific evidence used to support or refute ideas or arguments in the context of the shift from heliocentric models of the solar system to geocentric models.  **5)** What causes there to be night and day?  Use the idea of the Earth’s rotation to explain day and night and the apparent movement of the Sun across the sky. Examine why the sun appears to move and the arguments for the Earth’s rotation. Identify scientific evidence that has been used to support or refute ideas or arguments in the context of the evidence for the Earth’s rotation.  **6)** Why is it night in some places when it is day in others?  Predict night and day in different places on Earth. Report and present findings from enquiries, including conclusions, in oral and written forms such as displays and other presentations. | **Forces**  **1)**Is a force always a push or a pull?  Know that unsupported objects fall towards the Earth because of a force identified as gravity. Understand that in addition to gravity, other forces act on objects. Know that when forces are balanced, an object is stationary. Understand that when forces on an object are unbalanced, the object moves.  **2)**How did Isaac Newton discover gravity?  Know that gravity is a force pulling objects towards the centre of the Earth. Begin to take accurate and precise measurements using standard units. Begin to identify scientific evidence that has been used to support or refute  ideas. Know the importance of Isaac Newton in the wider development of scientific discovery.  **3)**How does air resistance affect movement?  Identify the effects of air resistance.  Begin to plan different types of scientific enquiries to answer questions, including identifying and controlling variables where necessary.  Begin to recognise how to set up comparative and fair tests and explain which variables need to be controlled and why. Begin to draw conclusions based on their data and observations and use scientific knowledge to explain the findings.  4)Why is it more difficult to move through water than air?  Explain the effects of water resistance. Identify streamlined shapes and know the effect this has. Adapt an object to minimise the effects of water resistance on it.  **5)**How does friction act on moving objects?  Explain the effects of friction on a moving vehicle. Investigate the effects of friction created by different materials  6)How do levers, pulleys and gears make our lives easier?  Explain how different mechanisms work. Investigate a simple mechanism. Design own mechanism for a given purpose. | **A Lifetime of Change – humans and other animals.**  1)What changes as a human being gets older?  Identify that there are different types of reproduction. Identify that human reproduction is sexual reproduction. Name and organise the specific stages of human development.  2)Is there a link between height and weight in babies?  Describe the changes as humans develop to old age. Select and use correct scientific vocabulary. Begin to choose the best way to present data. Begin to record data and results of increasing complexity using tables, bar and line graphs.  3)What are the main changes in puberty?  Know that puberty is a stage in human development. Identify the physical changes at puberty in both sexes.Consider changes during puberty in different species and discuss differences.  4)How does aging affect human beings?  Explain own ideas of what identifies old age.  Make suggestions about changes that occur in old age and classify them.  Describe the changes in old age relating them to scientific effects of ageing.  5)What is the gestation period?  Describe the changes as humans develop to old age. Begin to report and present findings from enquiries. Begin to choose the best way to present data.  6)Is there a link between gestation period and life expectancy?  Know what gestation period and life expectancy relate to.  Make appropriate choices to present data. Use data presentations to identify correlation/ causal relationships between two data sets. Make informed conclusions from the evidence, based on relationship between two data sets. |
| Year 6 | **Electricity**  1)How have we come to learn about electricity and how to use it?  Identifying scientific evidence that has been used to support or refute ideas or arguments (in the context of the major discoveries made by scientists in the field of electricity.)  2)How can I draw circuit diagrams using scientific symbols?  Use recognised symbols when representing a simple circuit in a diagram.  3)What Difference Do the Volts Make?  Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.  4)What question will I choose to investigate?  Select an appropriate scientific enquiry to investigate. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.  5)How can I record the results of an investigation and draw a conclusion?  Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. 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  6) How has my investigation led me to make new predictions and how will I test these?  Use results to make new predictions and plan and conduct a further investigation. | **Light**  1)How does light help us to see?  Explain how we see things and recognise that light appears to travel in straight lines.  2) How can we see around the corner?  Explain that objects are seen because they give out or reflect light into the eye.  3) How can we bend light?  Understand that refraction alters the direction of the light.  4) What happens when a visible light passes through a prism?  Understand how a prism affects a ray of light and explain what this tells us about the visible spectrum.  5) How does light enable us to see colours?  Investigate and understand how light enables us to see colours.  6) Do shadows have the same shape as the object that casts them?  Investigate the relationship between light sources, objects and shadows by using shadow puppets. | **Living Things and their Habitats.**  **1)** How can a selection of leaves be classified?  Select the most appropriate ways to answer science questions using different types of scientific enquiry – grouping and classifying.  **2)** How can we devise our own classification system?  Give reasons for classifying plants and animals based on specific characteristics.  **3)** What classification group does my animal belong to?  Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences including plants and animals.  **4)** Is the microorganism helpful or harmful?  Understand how science is useful in everyday life.  **5)** ENQUIRY What are the factors which cause mould to grow on bread?  Select a variable to investigate and use this to construct a question.  **6)** Which conditions caused the most mould growth?  Make scientific observations, take regular measurements and to consistently record results. Draw scientific conclusions from observations /results. | **Animals Including Humans**  **1)** Why are the four main systems in our body important?  Recap on previous learning about systems in the human body – skeletal, digestive and muscular and why they are important. Introduce the circulatory system.  **2)** Why can the heart be described as the most important pump we have?  Identify and name the main parts of the circulatory system and describe the functions of the heart, blood vessels and blood.  **3)** Why could we describe blood as the body’s river system?  Carry out a practical simulation to explain the role of the different parts of the circulatory system in transporting nutrients and water in the body. Explain the function of the different parts of blood.  **4)** What do our bodies need for a healthy lifestyle?  Understand what a healthy lifestyle consists of and how to achieve it.  5) and 6) What is the impact of drugs and alcohol on our bodies?  Understand the difference between legal and illegal drugs; describe the parts of the body affected by drugs, alcohol and smoking; explain how scientific evidence can change ideas.  **7)Investigation:** How can we investigate the impact of exercise on heart rate?  Understand what a pulse is and how to take one. Decide on the most appropriate type of investigation. Carry out a fair test. Write a report about the findings that includes a conclusion. Consider degree of reliability of results. | **Evolution and Inheritance.**  **1)** What will your puppy offspring be like?  Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.  **2)** How are living things adapted to suit their environment?  Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.  **3)** How might adaptation lead to evolution?  Make a set of observations and draw conclusions.  Begin to identify more abstract ideas and how these ideas help understanding of how the world operates.  4) How does the fossilisation process occur?  Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.  **5)** What can we learn about palaeontology?  Know that fossils give us some information about animals and plants that lived millions of years ago.  6) How might humans evolve in the future?  Understand how human beings have evolved and that adaptations can have disadvantages as well as advantages. | NO SCIENCE TOPIC FOR THIS HALF TERM. |