Science Knowledge and Skills Coverage. (Year 6)

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| Content/  Knowledge | Animals Including Humans  I can identify the main parts of the human circulatory system and describe the function of the heart, blood vessels and blood.  I can describe the ways in which nutrients and water and transported within animals including humans.  I can recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. | | | | Electricity  To 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.  To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.  To use recognised symbols when representing a simple circuit in a diagram. | | | | Living things and Habitats  Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences including micro-organisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics. | | | | Light  Recognise that light appears to travel in straight lines.  Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. | | | |
| Scientific Enquiry | Icon  Description automatically generated  Icon  Description automatically generated  Screen Clipping  Icon  Description automatically generated | Identify parts of the body  Research Santorio and look for patterns.  Identify parts of the blood. | Screen ClippingIcon  Description automatically generatedScreen Clipping | Use research to support explanation  Conduct comparative test  Use research to support ideas. | Icon  Description automatically generatedIcon  Description automatically generatedIcon  Description automatically generated | Identify electrical components.  Notice patterns in my investigation.  Comparative tests. | Screen ClippingIcon  Description automatically generatedIcon  Description automatically generated | Fair test  Using research  Identify components | Icon  Description automatically generatedScreen ClippingIcon  Description automatically generated | Sort based on observable characteristics.  Classify and sort using classification keys.  Research genus and species. | Icon  Description automatically generatedIcon  Description automatically generatedScreen Clipping | Research animals to classify  Observe microorganisms over time.  Notice patterns. | Screen ClippingIcon  Description automatically generatedIcon  Description automatically generated | Look for patterns in how light is reflected.  Use SK and research to make a periscope.  Identify different parts of the eye. | Icon  Description automatically generatedScreen ClippingIcon  Description automatically generated | Look for patterns in observations.  Use SK about refraction to make predictions  I can look for patterns in how we see things. |
| Working Scientifically | Screen ClippingScreen Clipping  Icon  Description automatically generated | Use scientific diagrams  Take accurate measurements  Use labelled diagrams to explain | Icon  Description automatically generatedScreen ClippingIcon  Description automatically generatedScreen Clipping | Use models to explain my thinking  Plan investigation and record results.  Observe what happens using a model. | Screen ClippingIcon  Description automatically generatedIcon  Description automatically generated | Answer questions by investigating  Take accurate measurements  Develop predictions | Screen Clipping  Screen ClippingIcon  Description automatically generated | Present results in line graph.  Use diagrams to support explanation  Scientific diagrams. | Icon  Description automatically generatedScreen ClippingScreen ClippingScreen Clipping | Record in a table  Answer own questions. Use classification keys.  Raise questions about animals to group. | Icon  Description automatically generatedIcon  Description automatically generatedScreen Clipping | Observe and raise questions.  Predict how microorganisms will decay food  Evaluate effects of yeast. | Icon  Description automatically generatedScreen ClippingScreen Clipping | Use scientific models and labelled diagrams.  Use diagrams to support explanation.  Make careful observations. | Icon  Description automatically generatedIcon  Description automatically generatedScreen Clipping | Draw diagrams with accuracy  Make predictions based on SK.  Evaluate using scientific language |
| Ideas | 1- Children create own model of the heart and explain how it works using scientific language.  2- Circulatory drama. Create a pendulum swing to measure pulse rate.  Extra- heart dissection.  3-Explore heart location in animals. Children to make blood  4- Use picture of the heart to explain how blood flows in and out. Use skittles to demonstrate how nutrients are absorbed.  Understand why blood clots and the role of the platelets to form a scab.  5- Recap on healthy foods. Investigation into heart recovery rates.  6- Drugs and testing in sport, explore effects of smoking. Children create own smoking model. Explore importance of mental health. | | | | 1- Circuit investigations. Practical activities.  Electricity hazards.  2- Drawing electrical symbols. Will it work activity.  What is electricity investigation. Measuring bulb brightness using data logger and recording in Lux.  3- What is a cell/battery? Children to make own fruit batteries.  4- Investigation into voltage. Investigation into changing the sound of a buzzer in a circuit using knowledge of voltage.  5- Create a game for the fair using knowledge of simple circuits.  6- Children to create a toy using more complicated components e.g. propellers, motors. | | | | 1. Sort animals and leaves into broad groups.  2. Sort minibeasts, classify minibeasts using classification keys. Human classification.  3. Classification. Seven levels of Linnaeus System- Carolus Linnaeus. Different classifications based on Kingdom, Phylum, class, order, family, genus and species. Children classify animals using Linnaeus scale.  4. Quirky creatures. Specific descriptions using facts. Children to use classification system to create own creature.  5. Learn about different microorganisms and how they are classified using the system. Good and bad bacteria. Food decay. Edward Jenner and smallpox vaccine.  6. Learn about the effects of Yeast, yeast experiment. Make bread to show the effects of yeast. | | | | 1. Dark den/box practical. History of light. Light maze activity. Use prisms to spot colour spectrum.  2. Know how a periscope works, how light is reflected and make own periscope.  3. Identify light sources. Explore if the moon is a light source. How does the eye work, how do we see? Children will look at optical illusions. Children will observe how the pupil reacts to light. Draw and label the eye.  4. Explain how we see things using diagrams. Experiment with shadows and changing the size of the shadow. Shadow investigation answering specific questions.  5. Refraction activities. Children will make their own magnifying glass and understand what refraction is.  6. Children will explore how rainbows are formed. Children will consolidate the language of the unit. | | | |

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| Content/  Knowledge | Evolution and Inheritance  Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago  Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents  Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. | | | |
| Icon  Description automatically generatedScientific Enquiry | Screen Clipping  Screen Clipping  Icon  Description automatically generated | Use scientific evidence to support or refute arguments.  Explain research using scientific  knowledge and understanding.  Can identify patterns which can be found in natural environments. | Icon  Description automatically generatedScreen ClippingIcon  Description automatically generated | Draw conclusions when sorting and classifying.  Can present findings in oral and written form using research.  I can look for patterns when considering variation. |
| Working Scientifically | Icon  Description automatically generated  Icon  Description automatically generatedIcon  Description automatically generated | Use ideas from secondary sources to explain ideas.  Raise questions about a range of phenomena.  Develop predictions which can be found in natural environments. | Icon  Description automatically generatedScreen ClippingIcon  Description automatically generated | Use scientific reasons to make overall comparisons.  Use scientific diagrams to explain abstract concepts.  Describe and evaluate my own and other people’s scientific ideas |
| Ideas | 1- Children consolidate work on fossils and how they are formed. Children make own fossil and explain the process. Children create a guide or poster.  2- Children will learn about Charles Darwin and natural selection. Discuss evolution of birds through seed investigation.  3- Read Molliebird and design own Molliebird based on the changing environments. Use sweets and raisons to demonstrate natural selection.  4- Discuss how plants are adapted to their environments. Sort plant cards according to how they adapt and evolve.  5- Children will focus on how animals are adapted to different climates. Read peppered moth to demonstrate modern evolution. Create a stop motion or leaflet to show how animals are adapted to its environment.  6- Explore genetics and how characteristics are passed down the generations. Children to analyse family trees and write an explanation for how the Weasley family tree has similar characteristics. | | | |