**CJS Science Overview**

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|  | **Autumn 1** | **Autumn 2** | **Spring** | **Summer 1** | **Summer 2** |
| **Year 3** | **Light**  1. Where does light come from?  2. How do we see things?  3. Who was Ibn Al-Haytham and what did he contribute to science?  4. What are reflections?  5. Why do we need to protect our eyes from sunlight?  6. How are shadows formed?  7. Do all materials cast shadows?  8. Why do shadows change?  9. End task – Fair test: How does the distance between a shadow puppet and a light source affect the size of the shadow? | **Rocks and soils**   1. Are all rocks the same? 2. What are the different rocks and how are they different? 3. Do rocks change? 4. Are rocks permeable? 5. How are fossils formed 6. What is soil 7. End task – Writing to inform about the different types of rocks and their properties | **Forces and magnets**   1. How do objects move or change shape? 2. How does the type of surface affect how an object moves on it? 3. What are magnets? 4. Are all materials magnetic? 5. How do magnets work? 6. Are all magnets the same strength? 7. End task – Writing to explain about magnetism. | **Plants**  1. What does each part of a food plant do?  2. What does each part of a flowering pant do?  3. What do plants need to grow?  4. Do all plants need the same conditions to flourish?  5. What happens when you water a plant?  6. How do seeds turn into plants?  7. How do plants reproduce?  8. End task - TBC | **Animals including humans**  1. What are the different types of food?  2. How can we eat healthily?  3. Do all animals eat the same food?  4. How do animals get the energy they need?  5. What are our skeletons for?  6. How do our muscles make us move?  7. Are all animals’ skeletons the same?  8. End task - TBC |
| **Working scientifically**  1.1  asking relevant questions and using different types of scientific enquiries to answer them  1.2  setting up simple practical enquiries, comparative and fair tests  1.3  making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers  1.4  gathering, recording, classifying and presenting data in a variety of ways to help in answering questions  1.5  recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables  1.6  reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions  1.7  using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions  1.8  identifying differences, similarities or changes related to simple scientific ideas and processes  1.9  using straightforward scientific evidence to answer questions or to support their findings. | | | | |

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| **Year 4** | **Sound**   1. What are sounds and how do we hear them? 2. How are sounds made? 3. Who was Alexander Graham Bell and what did he contribute to science? 4. What is the pitch of a sound and how can we change it? 5. How can we stop sound from being heard? 6. End task – Fair test: Which materials are the best sound insulators? | **Electricity**  1. Where does electricity come from and why do we need it?  2. Why is electricity dangerous?  3. Which circuit components are needed to make a bulb light up?  4. What could be stopping a bulb from being lit up in the circuit?  5. How can a buzzer be turned on or off in a circuit?  6. Which materials conduct electricity?  7. End task – Writing to explain: How can we make a bulb brighter in a circuit?  **Local habitat science journal – what is changing?** | **States of matter**  1. What are the differences between solids, liquids and gases?  2. How can we change a solid to a liquid?  3. How can we change a liquid to a solid?  4. How can we change how quickly a solid melts?  5. How can we change how quickly a liquid freezes?  6. Can we reverse scientific changes?  7. How can a solid behave like a liquid?  8. What happens when solids are added to water?  9. How can we separate a mixture of solids?  10. What is the water cycle?  11. End task -  12. Review of insecure concepts / deeper learning  **Local habitat science journal – what is changing** | **Animals including humans**  1. What happens to the food that we swallow?  2. What are teeth made of?  3. Are all teeth the same?  4. What’s the best way to look after our teeth?  5. How do animals get the energy they need?  6. End task -  7. Review of insecure concepts / deeper learning | **All living things**  1. What different types of living things are there?  2. How do scientists decide what group a living thing belongs to?  3. What’s the difference between a vertebrate and an invertebrate?  4. What types of invertebrates are there?  5. How do habitats change over time?  6. What is deforestation?  7. End task -  8. Review of insecure concepts / deeper learning  **Local habitat science journal – what is changing** |
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| **Year 5** | **Forces**  1. Who was Isaac Newton and what did he contribute to science? 2. How can we slow a falling object?  4. How can we prevent people from slipping over?  5. How can we measures force?  6. How are boats designed to s=combat water resistance?  7. How do pulleys / gears / levers work?  8. End task – Writing to explain: What would a world without forces be like? | **Properties and changes of materials**  1. In what ways can materials be sorted?  2. What happens to a solute when it is added to water?  3. How can we separate a solution?  4. Is every object equally hard?  5. What is the best materials to make a …?  6. Why do we make new materials?  7. Can changes be reversed?  8. End task - TBC  **Local habitat science journal – what is changing** | **Earth and space**  1. What is in in our solar system?  2. Are all planets the same?  3. Who was Nicolas Copernicus and what did he contribute to science?  4. In what ways do planets move?  5. What is special about the moon?  6. What do scientists think is the origin of the solar system?  7. How does day and night work?  8. How do sundials work?  9. End task - TBC  **Local habitat science journal – what is changing** | **Animals including humans**  1. How long do mammals develop in the womb?  2. How does a baby develop before it is born?  3. How do children develop throughout childhood?  4. What changes happen between childhood and adulthood?  5. How are men and women different?  6. What happens to humans in old age?  7. End task -TBC | **Living things and their habitats**  1. How do amphibians change in their lifetime?  2. How do mammals change in their lifetime?  3. How do insects change in their lifetime?  4. How do birds change in their lifetime?  5. How do plants change in their lifetime?  6. How do plants reproduce?  7. How do animals reproduce?  8. End task - TBC  **Local habitat science journal – what is changing** |
| **Working scientifically**  1.1  planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary 1.2  taking measurements, using a range of scientific equipment, with increasing accuracy and precision 1.3  recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs 1.4  using test results to make predictions to set up further comparative and fair tests 1.5  reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations 1.6  identifying scientific evidence that has been used to support or refute ideas or arguments. | | | | |

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| **Year 6** | **Electricity**   1. Where are circuits used? 2. How do scientists represent how circuits work? 3. How can we change the speed of a motor? 4. End task – Making a model of a fairground ride or motorised car. | **Light**  1. How can we see around corners?  2. How do our eyes make us see?  3. What is light?  4. How can we change shadows?  5. End task - TBC | **Evolution**  1. Who was Mary Anning and what did she contribute to science?  2. What do palaeontologists learn from studying fossils?  3. Who was Charles Darwin and what is his theory of natural selection?  4. How similar are offspring to their parents?  5. How have animals adapted over time?  6. How have plants adapted over time?  7. End task - TBC | **Animals including humans**  1. What is in our blood?  2. How is blood pumped around our bodies?  3. How does the heart work?  4. What makes our heart rate change?  5. How does alcohol affect our bodies?  6. How does smoking affect our bodies?  7. How does diet and exercise affect our bodies?  8. End task - TBC | **Living things and their habitats**  1. Who was Carl Linnaeus and what did he contribute to science?  2. What different vertebrates are there?  3. What different invertebrates are there?  4. What different arthropods are there?  5. Who was Louis Pasteur and what did he contribute to science?  6. Are all trees the same?  7. What living things are there in our local environment?  8. End task - TBC |
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