Isleham C of E School Progression of Scientific Enquiry Skills

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| Scientific Enquiry Objective (Reception) | Termly Topics Where the objective will be taught |
| Shows an interest in their lives and those of personal significance (40 – 60 months Enjoys joining in with family customs and routines.)Knows what makes them similar and unique. (30 – 50 months Knows some of the things that make them unique, and cantalk about some of the similarities and differences in relation to friends or family.)Talks about how things work. (30 – 50 months Talks about why things happen and how things work.) | Autumn 1- All About Me |
| Recognises and describes special events and joining in with them significance (40 – 60 months Enjoys joining in with family customs and routines.)They understand differences in different families (30 – 50 months Knows some of the things that make them unique, and cantalk about some of the similarities and differences in relation tofriends or family.)Comments about what they have seen/discovered in the world places (40 – 60 Months Looks closely at similarities, differences, patterns and change.) | Autumn 2- Our Cool World |
| Shows an interest in different occupations (30 – 50 months Shows interest in different occupations and ways of life.)Melting/freezing and floating/sinking (30 – 50 months Talks about why things happen and how things work.) | Spring 1- Superheroes and Villains |
| Understands growth and decay (30 – 50 months Developing an understanding of growth, decay and changes over time.)Shows a concern for living things. Life cycle of a chick. (ELG Children know about similarities and differences in relation to places, objects, materials and living things.)Looks at pattern and change in the environment (ELG They talk about the features of their own immediate environment and how environments might vary from one another.) | Spring 2- Into the Woods |
| Know about similarities/differences with environments/materials/living things/ Life cycle of a frog, (ELG Children know about similarities and differences in relation to places, objects, materials and living things) | Summer 1- Mad About Minibeasts |
| Make observations of animals and plants and explain why some differences have occurred (ELG They make observations of animals and plants and explain why some things occur, and talk about changes.) | Summer 2- Animal Fair |

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| Scientific Enquiry Objective | Termly Topics Where the objective will be taught |
|  | Year 1 | Year 2 |
| Explore the world around them and raise their own simple questions | Each term | Each term |
| Experience different types of science enquiries, including practical activities | Autumn 1 – MaterialsAutumn 2 – Seasonal Changes | Autumn 1, Autumn 2 – materials, Summer 1 – plants, Summer 2 – Healthy living |
| Begin to recognise different ways in which they might answer scientific questions | Each term | Autumn 1, Autumn 2 - materials |
| Carry out simple tests | Autumn 1 – materialsSpring – Animals including humans | Autumn 1, Autumn 2 – materials, Summer 1 – plants, Summer 2 – Healthy living |
| Use simple features to compare objects, materials and living things and, with help, decide how to sort and group them (identifying and classifying) | Autumn 1 – materials, Spring – Animals including humans, Summer 1 – plants, Summer 2 – seasonal change | Autumn 1, Autumn 2 – materials, Spring – Animals and living thingsSummer 2 – healthy living |
| Ask people questions and use simple secondary sources to find answers | Spring – Animals including humans | Spring – Animals and living things |
| Observe closely using simple equipment with help, observe changes over time | Spring – animals including humans, Summer 1 – plants, Summer 2 – Seasonal change | Spring – animals and living things, Summer 1 - plants |
| With guidance, they should begin to notice patterns and relationships | Summer 1 – plants, Summer 2 – seasonal changes | Spring – Animals and living things,Autumn 1, Autumn 2, - materials, Summer 1 – plants, Summer 2 – healthy living |
| Use simple measurements and equipment (e.g. hand lenses, egg timers) to gather data | Summer 1 - plants | Autumn 1, Autumn 2 – materials, Summer 1 – plants, summer 2 – healthy living |
| Record simple data | Autumn 1 – materials, Autumn 2 – seasonal changes, Summer 1 - plants | Autumn 1, Autumn 2 – materials, Spring – Animals and living things, Summer 1 – plants, summer 2 – healthy living |
| Use their observations and ideas to suggest answers to questions Talk about what they have found out and how they found it out | Autumn 1 – materials, Autumn 2 – Seasonal changes, Summer 1 - plants | Autumn 1, Autumn 2 – Spring – Animals and living things, Summer 1 – plants, Summer 2 – healthy living |
| With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language | Autumn 1 – materials, Autumn 2 – seasonal changes, Spring – animals including humans, Summer 1 - plants | Autumn 1 and Autumn 2 – materials, Summer – plants, Summer 2 – healthy living |
| Scientific Enquiry Objective | Termly Topics Where the objective will be taught |
|  | Year Summer - States of Matter | Year 4 |
| Raise their own relevant questions about the world around them | Autumn 2 - Light and ShadowSpring - RocksSummer 1 - Plants | Every Term |
| Should be given a range of scientific experiences including different types of science enquiries to answer questions | Autumn 1 : Forces and magnets, Autumn 2 - Light and shadowSpring - RocksSummer 2 - Animals including humans | Every term |
| Start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions | Summer 2 - Animals including humans | Autumn 2 - Living things and their habitats, Summer - States of Matter |
| Set up simple practical enquiries, comparative and fair tests Recognise when a simple fair test is necessary and help to decide how to set it up | Autumn 1 – forces and Magnets, Autumn 2 - LightSpring - RocksSummer 1 - Plants | Spring 1 - Electricity, Spring 2 - Sound, Summer - States of Matter |
| Talk about criteria for grouping, sorting and classifying; and use simple keys | Autumn 1 – forces and MagnetsSpring - Rocks, Summer 1 - Plants | Autumn 1 - Teeth and Digestion, Autumn 2 - Living things and their habitats |
| Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations | Summer 2 - Animals including humans | Every term |
| Make systematic and careful observations Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used | Autumn 1 – forces and Magnets, Autumn 2 - Light and ShadowSpring - Rocks | Autumn 1 - Teeth and Digestion, Spring 1 - Electricity, Spring 2 - Sound, Summer - States of Matter |
| Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them | Autumn 2 - Light and Shadow Summer: Plants | Autumn 2 - Living things and their habitats, Spring 2 - Sound |
| Take accurate measurements using standard units learn how to use a range of (new) equipment, such as data loggers / thermometers appropriately | Autumn 2 - Light and Shadows | Spring 2 - Sound, Summer - States of Matter |
| Collect and record data from their own observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help to make decisions about how to analyse this data | Autumn 1 – Forces and Magnets, Autumn 2 - Light and shadowSpring - RocksSummer 1 - Plants | Every term |
| With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions | Autumn 2 - Light and shadowSummer 1 - Plants | Autumn 1 - Teeth and Digestion, Spring 1 - Electricity, Spring 2 - Sound, Summer - States of Matter |
| Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions | Autumn 2 - Light and ShadowSpring - RocksSummer: Animals including humans | Every term |
| With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done. |  Autumn 2 - Light and ShadowSummer: Plants | Autumn 1 - Teeth and Digestion, Spring 1 - Electricity, Spring 2 - Sound, Summer - States of Matter |

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| Scientific Enquiry Objective | Termly Topics Where the objective will be taught |
|  | Year 5 | Year 6 |
| Use their science experiences to explore ideas and raise different kinds of questions | Autumn – Properties/Changes of Materials.Spring – Forces | Every term |
| Talk about how scientific ideas have developed over time | Spring – Earth and SpaceSpring – ForcesSummer – All Living Things and Habitats | Autumn 2 – Electricity, Spring 1 – Evolution and inheritance |
| Select and plan the most appropriate type of scientific enquiry to use to answer scientific questions | Autumn – Properties/Changes of Materials.Spring – Forces. | Autumn 1 – Light, Autumn 2 – Electricity, Spring 2 – Living things and their habitats, Summer – Animals including humans |
| Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why | Autumn – Properties/Changes of Materials.Spring – Forces. | Autumn 1 – Light, Spring 2 – Living things and their habitats, Summer – Animals including humans |
| Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment | Autumn – Properties/Changes of Materials.Summer – All Living Things and Habitats. | Spring 1 – Evolution and inheritance, Spring 2 – Living things and their habitats,  |
| Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact | Spring – Earth and SpaceSummer – All Living Things and Habitats. | Spring 1 – Evolution and inheritance,  |
| Make their own decisions about what observations to make, what measurements to use and how long to make them for | Autumn – Properties/Changes of Materials.Spring – Forces. | Autumn 1 – Light, Autumn 2 – Electricity, Spring 2 – Living things and their habitats, Summer – Animals including humans |
| Look for different causal relationships in their data and identify evidence that refutes or supports their ideas | Autumn – Properties/Changes of Materials.Spring – Forces. | Autumn 2 – Electricity, Spring 2 – Living things and their habitats, Summer – Animals including humans |
| Choose the most appropriate equipment to make measurements with increasing precision and explain how to use it accurately. Take repeat measurements where appropriate. | Autumn – Properties/Changes of Materials.Spring – Forces. | Autumn 2 – Electricity, Spring 2 – Living things and their habitats, Summer – Animals including humans |
| Decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs | Autumn – Properties/Changes of Materials.Spring – Forces. | Autumn 1 – Light, Autumn 2 – Electricity, Summer – Animals including humans |
| Identify scientific evidence that has been used to support or refute ideas or arguments | Spring – Earth and Space.Spring – Forces.Summer – All Living Things and Habitats. | Spring 1 – Evolution and inheritance |
| Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas, use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results | Autumn – Properties/Changes of Materials.Spring – Earth and Space.Spring – Forces. | Autumn 1 – Light, Autumn 2 – Electricity, Spring 2 – Living things and their habitats, Summer – Animals including humans |
| Use their results to make predictions and identify when further observations, comparative and fair tests might be needed | Autumn – Properties/Changes of Materials.Spring – Forces. | Autumn 2 – Electricity, Spring 2 – Living things and their habitats, Summer – Animals including humans |