

Science Knowledge and Skills Grids

| Science Knowledge and Skills | Year 1 | Year 2 | Year 3 |
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| Planning and predicting | <ul style="list-style-type: none"> Suggest what might happen. Suggest simple ways to test ideas. | <ul style="list-style-type: none"> With help suggest ideas to find things out With help, make predictions Think about how to collect evidence Think about and discuss whether comparisons and tests are fair or unfair. | <ul style="list-style-type: none"> Respond to suggestions With help put forward ideas about testing Make predictions Suggest what simple equipment may be needed. With consider what constitutes a fair test With help plan and carry out a fair test. |
| Investigating and observing | <ul style="list-style-type: none"> Make observations using appropriate senses. Explore using the 5 senses. Make simple comparisons and groupings. | <ul style="list-style-type: none"> Make observations and comparisons using simple equipment, following simple instructions. Use first- hand experience and simple information sources to answer questions. | <ul style="list-style-type: none"> Make observations and comparisons. Take measurements using standard units e.g length, time, volume. |
| Recording, analysing, and evaluating | <ul style="list-style-type: none"> Communicate findings in simple ways. Collect evidence to try to answer a question. | <ul style="list-style-type: none"> Record findings in simple ways. Including tables, graphs etc. Say whether what happened was what was expected. | <ul style="list-style-type: none"> Communicate findings in a variety of ways. Say whether what happened was what was expected and draw simple conclusions Look for naturally occurring patterns and relationships. |
| Questioning and sources of information. | <ul style="list-style-type: none"> Explore the world around them and raise their own simple questions. With help begin to recognise ways that they might answer scientific questions. Ask people questions to find answers. | <ul style="list-style-type: none"> Explore the world around them and raise their own simple questions. Begin to recognise ways that they might answer scientific questions. Ask people questions and use simple secondary sources to find answers. | <ul style="list-style-type: none"> Raise their own relevant questions about the world around them. Start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions. Recognise when secondary sources might help to answer questions that cannot be answered through practical investigations. |
| Suggested scientific vocabulary | <p><u>Subject Matter Specific Vocabulary (Y1 and Y2)</u></p> <ul style="list-style-type: none"> Evergreen Deciduous Root, stem, seed Flower. Canopy, trunk Fish, amphibians, reptiles Birds, mammals Carnivores, herbivores Omnivores Nose, ear, mouth Hands, feet , torso Head, skull Wood, plastic, glass Metal, water, rock Flexible, hard Soft, absorbs Seasons <p><u>Suggested sentence starters and key scientific vocabulary to show progression in classroom discussions (by year group):</u> T:\Curriculum\Curriculum Leaders 2019\Science 2019-2020 Subject Leader File\RESOURCES\Vocabulary - to show progression</p> | | <p><u>Subject Matter Specific Vocabulary (Y3 and Y4)</u></p> <ul style="list-style-type: none"> Roots, stem, leaves, flowers Air, light water Nutrients, transported Life cycle Pollination, seed, formation Seed dispersal Nutrition Skeleton's, muscles Fossils, trapped Protection Organic Absence Surfaces Reflected, opaque, transparent translucent Forces, Magnetic, attract, repel, poles <p><u>Suggested sentence starters and key scientific vocabulary to show progression in classroom discussions (by year group):</u> T:\Curriculum\Curriculum Leaders 2019\Science 2019-2020 Subject Leader File\RESOURCES\Vocabulary - to show progression</p> |

| Science knowledge and skills | Year 4 | Year 5 | Year 6 |
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| Planning and predicting | <ul style="list-style-type: none"> Recognise why it is important to collect data to answer questions. Suggest questions that can be tested. Put forward ideas about testing and make predictions. With help, consider what constitutes a fair test | <ul style="list-style-type: none"> Recognise that scientific ideas are based on evidence and creative thinking. Make predictions based on scientific knowledge. Suggest methods of testing, including a fair test and how to collect evidence. Select suitable equipment from a given range. | <ul style="list-style-type: none"> Consider how scientists have combined evidence from observations and measurements with creative thinking to suggest new ideas and explanations for phenomena. Make predictions based on scientific knowledge and understanding. Suggest methods of testing, including a fair test and how to collect evidence, ensuring it is sufficient and appropriate. Select suitable equipment based on prior knowledge. |
| <u>Investigating and observing</u> | <ul style="list-style-type: none"> Make relevant observations and comparisons. Make measurement using standard units, including: temperature, time, force and length. Begin to understand why measurements should be repeated. With help, carry out a fair test, recognising and explaining why it is fair. | <p><u>In addition to Lower KS2 Skills</u></p> <ul style="list-style-type: none"> Carry out a fair test, explaining why it is fair. Understand why observations and measurements need to be repeated. Observe changes over periods of time. | <p><u>In addition to Lower KS2 Skills</u></p> <ul style="list-style-type: none"> Carry out comparative and fair tests identifying key factors to be considered. Make a variety of relevant observations and measurements using appropriate apparatus correctly. Decide when observations and measurements need to be checked, or repeating to give more reliable data. |
| Recording, analysing, and evaluating | <ul style="list-style-type: none"> Explain what the evidence shows in a scientific way and whether it supports predictions. Suggest improvements in their work. | <ul style="list-style-type: none"> Communicate findings in a variety of given ways, with support, including: tables, bar charts and graphs, with the use of ICT as appropriate. Identify trends and patterns in tests and offer explanations for these. Draw conclusions and communicate them in appropriate scientific language Suggest improvements in their work, giving reasons. | <ul style="list-style-type: none"> Communicate findings in a range of chosen ways, including: tables, bar charts and graphs, with the use of ICT as appropriate. Identify trends and patterns and results that do not appear to fit a pattern. Draw conclusions and communicate them in appropriate scientific language. Make practical suggestions for improving methods in their work. |
| Questioning and sources of information | <ul style="list-style-type: none"> Raise their own questions about the world around them. make their own decisions about the most appropriate type of scientific enquiry Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations. | <ul style="list-style-type: none"> Use their science experiences and with support, explore ideas and raise different kinds of questions. Recognise which secondary sources will be most useful to research their ideas and select information from these. | <ul style="list-style-type: none"> Independently use their science experiences to explore ideas and raise different kinds of questions. Recognise which secondary sources will be most useful to research their ideas and select information from these, separating opinion from fact. |
| Suggested Scientific Vocabulary | <p><u>Subject Matter Specific Vocabulary (Y3 and Y4)</u></p> <ul style="list-style-type: none"> Classification, keys Digestion, stomach Incisor, molar, premolar, canine Food chain, producer Predator, prey Solids, liquids, gases State Evaporation, condensation Vibration, pitch, volume Circuit, cells, wires, bulbs Switches, buzzers Conductor, insulator <p><u>Suggested sentence starters and key scientific vocabulary to show progression in classroom discussions (by year group):</u> T:\Curriculum\Curriculum Leaders 2019\Science 2019-2020 Subject Leader File\RESOURCES\Vocabulary - to show progression</p> | <p><u>Subject Matter Specific Vocabulary (Y5 and Y6)</u></p> <ul style="list-style-type: none"> life cycle amphibian, reptile reproduction properties transparency conductivity, thermal, magnet dissolve, solution, mixture separated, evaporation reversible, irreversible axis. Spherical, rotation, gravity resistance, friction mechanism lever, pulley, gear, force <p><u>Suggested sentence starters and key scientific vo discussions (by year group):</u> T:\Curriculum\Curriculum Leaders 2019\Science 2019-2020 Subject Leader File\RESOURCES\Vocabulary - to show progression</p> <ul style="list-style-type: none"> Characteristics Micro-organisms Circulatory system Blood, vessels, aorta, veins Nutrients Fossils, adaptation, evolution Reflect, reflection Sources, shadows circuit | |