

## Working Scientifically Skills Ideas, Questions, Planning and Resources

| Year Group | Key Skills                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nursery    | <ul style="list-style-type: none"> <li>Understand 'why' questions, like: "Why do you think the caterpillar got so fat?"</li> <li>Talk about what they see, using a wide vocabulary.</li> <li>Use one-handed tools and equipment</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Reception  | <ul style="list-style-type: none"> <li>Ask questions to find out more and to check what has been said to them.</li> <li>Articulate their ideas and thoughts in well-formed sentences.</li> <li>Make comments about what they have heard and ask questions to clarify their understanding</li> <li>Learn new vocabulary.</li> <li>Articulate their ideas and thoughts in well-formed sentences.</li> <li>Describe events in some detail.</li> <li>Use talk to work out problems and organise thinking and activities.</li> <li>Explain how things work and why they might happen.</li> <li>Develop their small motor skills so that they can use a range of tools competently, safely and confidently.</li> </ul>                                                                                                                                                                                                                                     |
| Y1         | <ul style="list-style-type: none"> <li><b>asks simple questions and recognises that they can be answered in different ways</b></li> <li>recognises scientific and technical developments that help us at in school.</li> <li><b>performs simple tests</b></li> <li>with guidance, suggests what they will do</li> <li>with guidance, identifies things to measure or observe that are relevant to the question</li> <li>uses resources provided or chosen from a limited range</li> <li>uses simple measurements and equipment to gather data</li> <li>suggests why a test is unfair with support</li> </ul>                                                                                                                                                                                                                                                                                                                                         |
| Y2         | <ul style="list-style-type: none"> <li><b>can ask questions and recognises that they can be answered in different ways</b></li> <li>recognises scientific and technical developments that help us in our local area</li> <li><b>performs simple tests</b></li> <li>with some guidance, suggests what they will do</li> <li>with some guidance, identifies things to measure or observe that are relevant to the question</li> <li>uses resources provided or chosen from a limited range with developing independence</li> <li>uses familiar measurements and equipment to gather data</li> <li>suggests why a test is unfair</li> </ul>                                                                                                                                                                                                                                                                                                             |
| Y3         | <ul style="list-style-type: none"> <li><b>asks relevant questions and uses, with support, different types of scientific enquiries to answer them</b></li> <li>explains the purposes of a variety of scientific and technological developments</li> <li><b>sets up simple practical enquiries, comparative and fair tests with support</b></li> <li>begins to make decisions about what observations to make and how long to make them for</li> <li>begins to choose the type of simple equipment that might be used from a reasonable range</li> <li>with support, uses appropriate equipment and measurements with reasonable accuracy</li> <li>with support, recognises when a simple fair test is needed</li> <li>with help, decides how to set up a fair test and control variables</li> </ul>                                                                                                                                                   |
| Y4         | <ul style="list-style-type: none"> <li><b>asks relevant questions and uses different types of scientific enquiries to answer them</b></li> <li>explains the purposes of a variety of scientific and technological development including those specific to their units of knowledge e.g. electricity</li> <li><b>sets up simple practical enquiries, comparative and fair tests</b></li> <li>makes decisions about what observations to make and how long to make them for</li> <li>chooses the type of simple equipment that might be used from a reasonable range</li> <li>uses appropriate equipment and measurements with increasing accuracy</li> <li>recognises when a simple fair test is needed</li> <li>decides how to set up a fair test and control variables, using a planning frame to support.</li> </ul>                                                                                                                               |
| Y5         | <ul style="list-style-type: none"> <li>uses their scientific experiences to explore ideas and raise different types of questions</li> <li>talks about how scientific ideas have developed over time</li> <li>beginning to recognise the applications of specific scientific ideas</li> <li>beginning to select and <b>plan different types of scientific enquiries to answer question</b></li> <li>makes decisions about what observations to make, what measurements to use, how long to make them for and whether to repeat them</li> <li>beginning to choose the most appropriate equipment to make measurements</li> <li>with support, can explain how to use the equipment accurately</li> <li>beginning to recognise when and how to set up comparative and fair tests</li> <li><b>beginning to recognise and controls variables where necessary</b> (e.g. with support, can explain which variables need to be controlled and why)</li> </ul> |
| Y6         | <ul style="list-style-type: none"> <li>uses their scientific experiences to explore and generate ideas and raise different types of questions</li> <li>talks about how and why scientific ideas have developed over time</li> <li>recognises the applications of specific scientific ideas</li> <li>selects and <b>plans different types of scientific enquiries to answer question</b></li> <li>makes decisions about what observations to make, what measurements to use, how long to make them for and whether to repeat them and can explain their reasoning</li> <li>chooses the most appropriate equipment to make measurements</li> <li>explains how to use the equipment</li> <li>recognises when and how to set up comparative and fair tests</li> <li><b>recognises and controls variables where necessary</b> (e.g. explains which variables need to be controlled and why)</li> </ul>                                                    |