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| **Progression in Working Scientifically across Key Stage 1 and Key Stage 2** | | | | | | |
|  | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| ***Vocabulary*** | Use some simple scientific language  Begin to use some science words.  Use comparative language with support.  I can begin to use simple scientific language.  I can begin to describe what I see eg something is wrong  I can begin to compare eg something is longer or  shorter. | Use simple scientific language and some science words.  Use comparative language - bigger, faster etc  I can use simple scientific  language.  I can describe what I see.  I can compare eg something is longer or shorter. | Begin to use some scientific language to talk and, later, write about what they have found out.  Begin to use relevant scientific  language.  Begin to use comparative and  superlative language.  I am beginning to use some scientific language in my work.  I am beginning to describe  I am beginning to use comparative and superlative descriptions eg longer / shorter than, longest / shortest.  I can begin to describe cause and effect. | Use some scientific language to  talk and, later, write about what they have found out.  Use relevant scientific language.  Use comparative and superlative language  I can use some scientific  language in my work.  I can describe my observations and findings  I can use comparative and  superlative descriptions eg  longer / shorter than, longest /  shortest.  I can begin to describe cause  and effect. | Am beginning to read, spell and  pronounce scientific vocabulary  correctly.  Am beginning to use relevant  scientific language and illustrations to discuss, communicate and justify scientific ideas.  Am beginning to confidently use a range of scientific vocabulary.  Am beginning to use conventions such as trend, rogue result, support  prediction and -er word generalisation  Am beginning to use scientific ideas when describing simple processes.  Am beginning to use the correct  science vocabulary  I am beginning to read, spell and pronounce scientific vocabulary correctly.  I am beginning to confidently use the correct scientific language when appropriate.  I am beginning to explain my ideas with scientific reasons.  I am beginning to use scientific conventions eg trends, rogue result, support prediction | Read, spell and pronounce scientific vocabulary correctly.  Use relevant scientific language. And illustrations to discuss, communicate  and justify scientific ideas.  Can confidently use a range of  scientific vocabulary.  Can use conventions such as trend, rogue result, support prediction and -er word generalisation.  Can use scientific ideas when  describing simple processes. Can use the correct science vocabulary  I can read, spell and pronounce  scientific vocabulary correctly.  I can confidently use the correct  scientific language when appropriate.  I can explain my ideas with scientific reasons.  I can use scientific conventions eg trends, rogue result, support  prediction. |
| ***Understanding*** | Can begin to talk about  how science helps us in  our daily lives eg. torches and lights help us see hen it is dark.  Am beginning to understand science can sometimes be dangerous.  I can say how science helps us in our daily lives.  I can say how science can be dangerous eg electricity can give you a shock. | Can begin to talk about  how science helps us in  our daily lives eg. torches and lights help us see hen it is dark.  Am beginning to understand science can sometimes be dangerous.  I can say how science helps us in our daily lives.  I can say how science can be dangerous eg electricity can give you a shock. | Begin to know which things in science have made our lives better.  Can begin to understand risk in  science.  I am beginning to know which things in science have made our lives better eg computers in schools, hospitals etc  I can begin to understand risk in science. | Knows which things in science  have made our lives better.  Can understand there is some  risk in science.  I know some things in science  which have made our lives better eg computers in schools,  hospitals etc  I understand there is some risk  in science. | Am beginning to talk about how  scientific ideas have changed over time.  Am beginning to explain the positive and negative effects of scientific development.  Am beginning to see how science is useful in everyday life.  Am beginning to say which parts of our lives rely on science.  I am beginning to see how science is useful in lots of different ways.  I am beginning to say which parts of our lives rely on science.  I am beginning to explain the  positive and negative effects of  scientific developments. | Can talk about how scientific ideas have changed over time.  Can explain the positive and negative effects of scientific development.  Can see how science is useful in everyday life.  Can say which parts of our lives rely on science.  I can see how science is useful in lots of different ways.  I can say which parts of our lives rely on science.  I can explain the positive and  negative effects of scientific  developments |
|  | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| ***Questioning and enquiring*** | Ask simple questions about the world around us.  Begin to recognise that they can be answered in different ways (different types of enquiry including - observing changes over time, noticing patterns,  grouping and classifying, carrying out simple comparative tests, finding things out from secondary sources).  I can ask a few simple questions about the world around us.  I can begin to use some different types of enquiry to answer questions | Ask questions about the  world around us.  Recognise that they can be answered in different ways (different types of enquiry including - observing changes over time, noticing patterns,  grouping and classifying, carrying out simple comparative tests, finding things out from secondary sources).  I can ask simple questions about the world around us.  I can begin to use different types of enquiry to answer questions. | Ask some relevant questions and use different types of scientific enquiries to answer them.  Begin to explore everyday phenomena and the relationships between living things and familiar environments.  Begin to develop their ideas about functions, relationships and  interactions.  Begin to raise their own questions about the world around them.  Begin to make some decisions about  which types of enquiry will be the best way of answering questions including observing changes over time, noticing patterns, grouping and classifying, carrying out simple  comparative and fair tests, finding things out using secondary sources.  I can ask some relevant questions about the world around us.  I can use some different types of  scientific enquiry to answer questions.  I am beginning to decide which type of enquiry is best to answer my question. | Ask relevant questions and use different types of scientific enquiries to answer them.  Explore everyday phenomena and  the relationships between living  things and familiar environments.  Begin to develop their ideas about functions, relationships and interactions.  Raise their own questions about  the world around them.  Make some decisions about  which types of enquiry will be the best way of answering questions including observing changes over time, noticing patterns, grouping and classifying, carrying out simple comparative and fair tests, finding things out using secondary sources.  I can ask relevant questions about the world around us.  I can use different types of  scientific enquiry to answer questions.  I am beginning to decide which type of enquiry is best to answer my question. | Begin to plan different types of  scientific enquiries to answer questions, including recognising and controlling variables where necessary.  Begin to explore and talk about  ideas, ask their own questions about  scientific phenomena, analyse functions, relationships and  interactions more systematically.  Begin to recognise some more abstract ideas and begin to  recognise how these ideas help them to understand how the world operates.  Begin to recognise scientific ideas change and develop over time.  Begin to select the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes  over different periods of time, noticing patterns, grouping and  classifying, carrying out comparative  and fair tests and finding things out using a wide range of secondary sources of information.)  I am beginning to explore ideas and  ask my own questions about  scientific phenomena.  I am beginning to plan different types of scientific enquiry to answer questions.  I am beginning to decide which variables to control. | Plan different types of scientific  enquiries to answer questions,  including recognising and controlling  variables where necessary.  Explore and talk about ideas, ask their own questions about scientific phenomena, analyse functions,  relationships and interactions more  systematically.  Begin to recognise more abstract ideas and begin to recognise how these ideas help them to understand how the world operates.  Begin to recognise scientific ideas change and develop over time.  Select the most appropriate ways to  answer science questions using  different types of scientific enquiry  (including observing changes over  different periods of time, noticing patterns, grouping and classifying,  carrying out comparative and fair  tests and finding things out using a  wide range of secondary sources of  information.)  I can explore ideas and ask my own questions about scientific phenomena.  I can plan different types of  scientific enquiry to answer questions.  I can decide which variables to  control. |
| **OBSERVING OVER TIME**    **PATTERN SEEKING** | **Begin to observe** closely, using simple equipment.  Begin to use **observations and**  **ideas** to suggest answers to questions.  To observe changes over time and, with guidance, begin to notice patterns and relationships.  To say what I am looking for and what I am measuring.  To know how to use simple equipment safely.  Use simple measurements and equipment with increasing independence (eg hand lenses and egg timers)  I can observe changes over time.  I can say what I am looking for and what I am measuring.  I can measure with nonstandard units and can begin to use simple standard units eg, cm, m, l  I can use simple equipment eg hand lenses, egg timers.  I am beginning to notice patterns. | **Observe** closely, using simple equipment.  Use **observations and ideas** to suggest answers to questions.  To observe changes over time and, with guidance, begin to notice patterns and relationships.  To say what I am looking for and what I am measuring.  To know how to use simple equipment safely.  Use simple measurements and equipment with increasing independence (eg hand lenses and egg timers)  Begin to progress from non-standard units, reading mm, cm, m, ml, l, °C  I can observe changes over time.  I can say what I am looking for and what I am measuring.  I can measure with nonstandard units and can begin to use simple  standard units eg, mm, cm, m, ml, l , ºC  I can use simple equipment eg hand lenses, egg timers.  I am beginning to notice patterns. | Begin to make systematic and careful observations and, where appropriate,  take accurate measurements using standard units, using a range of  equipment, including thermometers and data loggers.  Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them.  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.  Learn to use some new equipment appropriately (eg data loggers).  Begin to see a pattern in my results.  Begin to choose from a selection of  equipment.  Begin to observe and measure accurately using standard units  including time in minutes and seconds.  I can make systematic and careful  observations.  I can decide what to observe and how long to collect observations.  I can take accurate measurements  using standard units eg. mm, cm, m, ml, l, ºC, seconds, minutes,  I can decide which equipment to use  and can use new equipment eg. data  loggers.  I can look for patterns and  relationships. | Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of  equipment, including thermometers and data loggers.  Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them.  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.  Learn to use new equipment appropriately (eg data loggers).  Can see a pattern in my results.  Can choose from a selection of equipment.  Can observe and measure accurately using standard units including time in minutes and seconds.  I can make systematic and  careful observations.  I can decide what to observe and how long to collect observations.  I can take accurate measurements using standard units eg. mm, cm, m, ml, | Begin to take measurements, using a  range of scientific equipment, with  increasing accuracy and precision,  taking repeat readings where appropriate.  Begin to identify patterns that might be found in the natural environment.  Begin to make their own decisions about what observations to make,  what measurements to use and how  long to make them for and whether  to repeat them. Choose the most appropriate equipment and explain how to use it accurately.  Begin to interpret data and find patterns. Select equipment on my own.  Can make a set of observations and  say what the interval and range are.  Begin to take accurate and precise  measurements – N, g, kg, mm, cm,  mins, seconds, cm²V, km/h, m per  sec, m/ sec  Graphs – pie, line  I can make accurate and precise  measurements.  I can decide what to observe, how  long to observe for and whether to  repeat them.  I can take accurate and precise  measurements using standard units  N, g, kg, mm, cm, mins, seconds,  cm²V, km/h, m per sec, m/ sec.  I can select equipment on my own and can explain how to use it accurately. | Take measurements, using a range of  scientific equipment, with increasing  accuracy and precision, taking repeat readings where appropriate.  Identify patterns that might be found in the natural environment.  Make their own decisions about what observations to make, what measurements to use and how long to make them for and whether to repeat them. Choose the most appropriate equipment and explain how to use it  accurately.  Can interpret data and find patterns. Select equipment on my own.  Can make a set of observations and  say what the interval and range are.  Accurate and precise measurements – N, g, kg, mm, cm, mins, seconds,  cm²V, km/h, m per sec, m/ sec  Graphs – pie, line, bar (Year 6)  I can make accurate and precise measurements.  I can decide what to observe, how long to observe for and whether to  repeat them.  I can take accurate and precise measurements using standard units N, g, kg, mm, cm, mins, seconds,  cm²V, km/h, m per sec, m/ sec.  I can select equipment on my own and can explain how to use it accurately. |
|  | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **IDENTIFYING, GROUPING AND CLASSIFYING** | Identify and classify with some support.  To begin to observe and identify, compare and describe.  To begin to use simple features to compare objects, materials and living things and, with help, decide how to sort and group them.  I can begin to identify a variety of objects, materials and living  things.  I can begin to compare, sort and group a range of objects, materials and living things. | Identify and classify.  Observe and identify, compare and describe.  Use simple features to compare objects, materials and living things and, with help, decide how to sort and group them.  I can identify a variety of objects, materials and living things.  I can compare, sort and group a range of objects, materials and living things | Begin to identify differences, similarities or changes related to simple scientific ideas and processes.  Begin to talk about criteria for grouping, sorting and classifying and use simple keys.  Begin to compare and group according  to behaviour or properties, based on  testing.  I am beginning to talk about and identify differences and similarities in the properties or behaviour of living things, materials and other scientific phenomena.  I am beginning to identify simple changes related to simple scientific phenomena.  I am beginning to discuss criteria for grouping and sorting and can classify using simple keys. | Identify differences, similarities or changes related to simple scientific ideas and processes.  Talk about criteria for grouping, sorting and classifying and use simple keys.  Compare and group according to behaviour or properties, based on testing.  I can talk about and identify differences and similarities in the properties or behaviour of living things, materials and other scientific phenomena.  I can identify simple changes related to simple scientific phenomena.  I can discuss criteria for grouping and sorting and can classify using simple keys. | Begin to use and develop keys and  other information records to identify, classify and describe living things and materials.  I am beginning to use keys and other information records to classify and  describe living things, materials and  other scientific phenomena.  I am beginning to develop my own keys and other information records to classify and describe.  I am beginning to identify changes related to scientific phenomena. | Use and develop keys and other information records to identify,  classify and describe living things and  materials.  I can use keys and other information records to classify and describe living things, materials and other scientific phenomena.  I can develop my own keys and other information records to classify and  describe.  I can identify changes related to  scientific phenomena. |
| **RESEARCH** | To begin to use simple secondary sources to find answers.  To begin to find information to help me from books and  computers with help.  I can begin to find information to help me from books, computers and other familiar  sources. | Use simple secondary sources to find answers.  Can find information to help me from books and computers with help.  I can find information to help me from books, computers and other familiar sources. | Begin to recognise when and how secondary sources might help to answer questions that cannot be answered through practical investigations.  I can begin to decide when research will help in my enquiry.  I am beginning to carry out simple research on my own. | Begin to recognise when and how secondary sources might help to answer questions that cannot be answered through practical investigations.  I can begin to decide when research will help in my enquiry.  I can carry out simple research on my own. | Begin to recognise which secondary sources will be most useful to  research their ideas.  I am beginning to recognise which secondary source will be most useful to my research.  I can begin to carry out research independently. | Recognise which secondary sources will be most useful to research their ideas.  I can recognise which secondary source will be most useful to my research.  I can carry out research independently. |
| **COMPARATIVE / FAIR TESTING (INVESTIGATING)** | Perform simple tests with support.  To begin to discuss my ideas about how to find things out.  To begin to say what happened in my investigation.  I can begin to perform simple tests.  I can begin to discuss  my ideas.  I can begin to say what happened in an investigation. | Perform simple tests.  To discuss my ideas about  how to find things out. To say what happened in my investigation.  I can perform simple tests.  I can discuss my ideas.  I can say what happened in  an investigation. | Set up some simple practical enquiries, comparative and fair tests.  Begin to recognise when a simple fair test is necessary and help to decide how to set it up.  Begin to think of more than one variable factor.  I can set up some simple practical enquiries. Including comparative and  fair tests.  I am beginning to help decide which variables to keep the same and which to change. | 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.  Can think of more than one variable factor.  I can set up simple practical enquiries. Including comparative and fair tests.  I can help decide which variables to keep the same and which to change. | Begin to use test results to make predictions to set up further comparative and fair tests.  Begin to recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why.  Begin to suggest improvements to my method and give reasons.  Begin to decide when it is appropriate to do a fair test.  I can sometimes set up a range of  comparative and fair tests.  I am beginning to explain which variables need to be controlled and why.  I am beginning to suggest improvements to my test, giving reasons. | Use test results to make predictions to set up further comparative and  fair tests.  Recognise when and how to set up comparative and fair tests and  explain which variables need to be controlled and why.  Suggest improvements to my method and give reasons.  Decide when it is appropriate to do a  fair test.  I can set up a range of comparative and fair tests.  I can explain which variables need to  be controlled and why.  I can suggest improvements to my test, giving reasons. |
|  | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| ***Recording and reporting findings*** | Gather and record data with some adult support, to help in answering questions.  Begin to record simple data.  Begin to record and communicate their findings in a range of ways.  Can show my results in a simple table that my teacher has provided.  I can begin to collect simple data.  I can begin to record data in a table my teacher has provided.  I can begin to communicate my findings in a variety of ways. | Gather and record data to help in answering questions.  Record simple data.  Record and communicate their findings in a range of ways.  Can show my results in a table that my teacher has provided.  I can collect simple data.  I can record data in a table my teacher has provided.  I can communicate my findings in a variety of ways. | Gather, record, and begin to classify and present data in a variety of ways to help in answering questions. Begin to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.  Begin to report on findings from enquiries, including oral and written explanations, displays or presentations of results and  conclusions.  Begin to use notes, simple tables and  standard units and help to decide how to record and analyse their data.  Begin to record results in tables and  bar charts.  I am beginning to collect data in a variety of ways, including labelled diagrams, bar charts and tables.  I am beginning to help decide how to record data.  I am beginning to communicate findings using simple scientific language. | Gather, record, classify and present data in a variety of ways to help in answering questions.  Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.  Report on findings from enquiries, including oral and written explanations, displays or presentations of results and  conclusions.  Use notes, simple tables and standard units and help to decide how to record and analyse their data.  Can record results in tables and bar charts.  I can collect data in a variety of  ways, including labelled diagrams, bar charts and tables.  I can help decide how to record data.  I can communicate findings using simple scientific language | Begin to record data and results of increasing complexity using scientific diagrams and labels,  classification keys, tables and bar and line graphs.  Begin to report and present findings from enquiries.  Begin to decide how to record data from a choice of familiar approaches.  Begin to choose how best to present data.  I am beginning to record data and results of increasing complexity using – scientific diagrams and labels,  classification keys, tables bar graphs, line graphs  I am beginning to choose how best to present data.  I am beginning to communicate findings using detailed scientific language. | Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables  and bar and line graphs.  Report and present findings from  enquiries.  Decide how to record data from a  choice of familiar approaches.  Can choose how best to present data.  I can record data and results of increasing complexity using – scientific diagrams and labels classification keys, tables bar graphs line graphs  I can choose how best to present data.  I can communicate findings using detailed scientific language. |
| ***Conclusions*** | Begin to talk about what they have found out and how they found it out.  To begin to say what happened in my investigation.  To begin to say whether I was surprised at the  results or not.  To begin to say what I would change about my investigation.  I can begin to talk about  what I have found out.  I can begin to explain  how I carried out my  enquiry.  I can begin to suggest  simple changes to my  enquiry. | Talk about what they have found out and how they found it out.  To say what happened in my investigation.  To say whether I was surprised at the results or not.  To say what I would  change about my investigation.  I can talk about what I  have found out.  I can explain how I carried  out my enquiry.  I can suggest simple  changes to my enquiry. | I am beginning to use results to draw  simple conclusions, make predictions  for new values, suggest improvements  and raise further questions.  Am beginning to use straightforward  scientific evidence to answer  questions or to support their findings.  With help, am beginning to look for  changes, patterns, similarities and  differences in their data in order to  draw simple conclusions and answer  questions. With support, am beginning  to identify new questions arising from  the data, make new predictions and  find ways of improving what they have  already done.  Am beginning to see a pattern in my  results.  Am beginning to say what I found  out, linking cause and effect.  Am beginning to say how I could make  it better.  Am beginning to answer questions  from what I have found out.  I am beginning to draw simple  conclusions based on the results of  my enquiry.  I am beginning to answer my questions  using the results of my enquiry.  I am beginning to use my findings to  make new predictions, suggest  improvements and think of new  questions.  I am beginning sometimes to think of  cause and effect in my explanations. | Using results to draw simple  conclusions, make predictions  for new values, suggest improvements and raise further questions.  Use straightforward scientific evidence to answer questions or to support their findings.  With help, look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. With  support, identify new questions  arising from the data, make new  predictions and find ways of  improving what they have  already done.  Can see a pattern in my results.  Can say what I found out, linking  cause and effect.  Can say how I could make it  better.  Can answer questions from what I have found out.  I can draw simple conclusions  based on the results of my  enquiry.  I can answer my questions using  the results of my enquiry.  I can use my findings to make  new predictions, suggest  improvements and think of new  questions.  I can begin to think of cause and  effect in my explanations. | Am beginning to report and present findings from enquiries, including  conclusions, causal relationships and  explanations of and degree of trust  in results, in oral and written forms  such as displays and other  presentations. Begin to identify scientific evidence that has been used to support or  refute ideas or arguments.  Begin to draw conclusions based on  their data and observations, use  evidence to justify their ideas, use scientific knowledge and understanding to explain their findings.  Begin to use test results to make predictions to set up further comparatives and fair tests.  Begin to look for different causal relationships in their data and  identify evidence that refutes or  supports their ideas.  Use their results to identify when further tests and observations are needed.  Begin to separate opinion from fact.  Begin to draw conclusions  Can use simple models.  Know which evidence proves a  scientific point.  Begin to use test results to make predictions to set up further comparative and fair tests.  I am beginning to draw scientific,  causal conclusions using the results of an enquiry to justify my ideas.  I am beginning to explain my conclusion using scientific knowledge  and understanding.  I am beginning to distinguish opinion and facts.  I am beginning to use my findings to  make predictions and set up further  enquiries.  I can begin to use abstract models  to explain my ideas. | Reporting and presenting findings  from enquiries, including conclusions,  causal relationships and explanations  of and degree of trust in results, in  oral and written forms such as  displays and other presentations.  Identify scientific evidence that has been used to support or refute ideas or arguments.  Draw conclusions based on their data and observations, use evidence to  justify their ideas, use scientific knowledge and understanding to  explain their findings.  Use test results to make predictions  to set up further comparatives and  fair tests.  Look for different causal relationships in their data and identify evidence that refutes or supports their ideas.  Use their results to identify when further tests and observations are needed.  Separate opinion from fact.  Can draw conclusions and identify scientific evidence.  Can use simple models.  Know which evidence proves a  scientific point.  Use test results to make predictions to set up further comparative and  fair tests.  I can draw scientific, causal  conclusions using the results of an  enquiry to justify my ideas.  I can explain my conclusion using  scientific knowledge and  understanding.  I can distinguish opinion and facts.  I can use my findings to make  predictions and set up further  enquiries  I can begin to use abstract models to  explain my ideas. |