Working Scientifically and related Disciplinary Knowledge Progression

	What questions do I want to answer? How could I answer it? What do I predict will happen?	How will I plan to answer the question or test my hypothesis?	How will I make valid observations?	How do I make sure my investigation is safe?	How will I record and process my observations?	How will I communicate my findings?	What does my evidence mean?	How confident am I about my results? How could I improve my investigation?	What are the implications of scientific developments?	How and why do scientists collaborate?
	I know that scientists pose questions which they seek to answer using their scientific knowledge and skills	I know why we keep one variable the same and changes others	I know that accurate measurements are needed to give the correct answer	I know materials can be dangerous	I know that scientists discuss and communicate their findings which leads to further investigations			I know scientists always look for ways to improve their work	I know the impact scientists have in developing our understanding of the world around us.	
Early Years Foundation Stage	I question why things happen (CLL) I use my senses to explore objects (Ch E L) I use my senses to explore objects (Ch E L)	I experiment with texture (ELG EAD)	I can compare quantities (ELG M) I am confident to choose the resources(including technology) I need (ELG PSED, U of W) I can handle equipment and tools (ELG PD)	I can talk about ways to keep healthy and to learn safely (ELG PD)	I can draw and talk about what I explore, notice	I can draw and talk about what I explore and notice	I can talk about changes (ELG U of W) I can identify similarities and differences between myself and others, materials and living things (ELG U of W) I can answer how and what questions (ELG CLL)	I can review how well my approach worked (C of L)		I take turns, I listen to the ideas of others on how to do things (ELG PSED)
Year 1	I can make suggestions on how to answer a question (2) I have an idea what might happen. (1) I can ask simple questions about things I have explored (1) I am curious and interested (1)	I can use secondary sources to find out things (1/2) I can suggest why a test is obviously not fair (2) I can carry out simple comparative tests with help (1/2) I can carry out simple tests with help (1/2)	I can use things to measure with help (1) I can use my senses to make close observations, to sort, to match (1)	I can identify hazards with help and do what we suggest to learn safely (2)	I can complete simple two column tables and record what I observe (1/2)	I can use science words to talk about and describe my observations (2)	I can use evidence to answer questions (2) I can use my record to help sort and identify things (2) I can compare (2) With help I can use my observations to answer questions to identify how things have changed (1/2)	I can accept that I could do things differently (2) I can compare my results with others (2) I can say what I found difficult (2)	I can identify people that use science to help us (2) I can identify things and jobs that use science (1/2)	I can share my ideas and listen to the ideas of others (1)
Year 2	I can make a simple prediction. (2) I can ask questions and with help suggest what I will do to answer questions. (2/3) I can with help suggest what might make a difference to how something looks, sounds, feels or behaves (2)	I can suggest how to make a comparative test fair (2/3) I can carry out a simple test in a group I can suggest what to observe / when and how to measure (2/3)	I look closely for patterns (2/3) I can use simple equipment to help observe, compare and record (2) I can use simple equipment to help me make measurements in non-standard units (2)	I can identify hazards and make suggestions to learn safely (2)	I can present my results in a variety of ways - words, pictures, two column tables, charts or lists including bar charts, Venn diagrams, pictograms, simple tables (2/3)	I can suggest how to communicate my science (2)	I can say whether what happened or a pattern was what I expected (2/3) I can model my ideas (3) With help I can use my observations to answer questions - to say whether something made a difference (2/3) or identify links between two sets of results (2/3) *e.g. shoe size and height*, to identify how things have changed (2)	I can talk about whether the information source was useful (2/3)	I can identify how science may or may not be useful (2/3)	I can work with others to investigate ideas (2)
Year 3	I can ask questions and suggest ways to answer them I can use patterns within and outside the observations/ data I have collected to make further predictions (3) I can give everyday reasons for my predictions (3) I can predict the order of results (3)	I can use secondary sources of information including other people's data (3/4/5)	I can decide what equipment to use and how to make observations (3) I can measure using cm, m, g or kg (3)	I know how to reduce hazards in order to learn safely	I can choose to present my results including words, pictures, charts lists, bar charts, Venn diagrams, pictograms, simple tables (3)	I can choose how to present evidence to communicate to different audiences (3)	I can identify patterns including those between two sets of data and use these to draw my conclusions (4) I can give simple explanations for observations / changes (3) I can draw simple conclusions (3)	I can suggest improvements (3) I suggest ways to improve how I find out and use information (3)	I can give ideas of how scientific ideas are used (3)	I can say why it is useful to work with others (3)
Year 4	I can ask questions that can be investigated scientifically and I can say whether I need a fair test to answer it (3/4)	I can suggest criteria I will use to sort and classify, how I will make observations over time, how to plan a fair test and why it is fair (3/4) I can use my observations to make and test keys (3/4)	I can choose suitable equipment, including electronic equipment to measure with greater precision and care (4)	I can identify hazards and make suggestions on how to reduce the risk so I can learn more safely (4)	I can present my results in a variety of ways including bar charts, branching databases stick graphs and tables (4)	I can use scientific language to discuss, describe and communicate my ideas (4) I can choose what to present and how to present to communicate to different audiences (4)	I can model my scientific ideas (4) I can identify patterns and use these to draw my conclusions (3/4) I can use my evidence to make further predictions, raise questions, identify patterns (4)	I can give reasons why my results might be different than others (4) I can identify ways to improve my key (4) I can suggest how to make a test more fair (3/4)	I can explain the consequences of scientific and technological developments (4) I can identify aspects of scientific ideas in different jobs (4)	

Working Scientifically and related Disciplinary Knowledge Progression

Year 5	I can sort questions and suggest ways of collecting evidence to answer them (e.g. fair test comparison, sort, classify and identify, observe over time, use secondary data, pattern seeking and applying scientific understanding to invent or design (3/4)	I can select and suggest values for what I am changing (4//5) I can state why fair tests are needed and can vary one factor while keeping the others the same. (3/4)	I can suggest reasons why a sample might not be representative (4/5) I can collect data from different sources (4) I can choose which information sources might be useful (3/4)	I can identify hazards and the risk to myself and others and make suggestions on what to do to control and reduce the risk to learn more safely (4/5)	I can use a line graph (4) I can systematically record my observations using kg, s, m, N (4/5)	I can use relevant scientific language in discussing, describing and explaining my ideas (4/5)	My conclusions match my evidence and I can use my scientific understanding to explain them (4) I can use evidence to back up or refute my ideas (4) I can develop identification keys (4)	I can suggest how to make measurements more precise, to make a test more fair and use better criteria to sort		
Year 6	I can ask scientific questions and decide the type of enquiry needed to answer it. (5) I can make predictions and give reasons for this based on my scientific knowledge and understanding. (4/5) I can use test results to make further predictions (4/5)	I can identify the most suitable factors/variables to change/ keep the same (5) I can select and identify the number and appropriate intervals for measurements and observations (4/5) I can select and suggest values for what I am keeping the same (4/5)	I can decide when to take repeat readings and suggest reasons for differences(5) I can choose equipment with suitable resolution for the measurement I am making (5)		I can choose the appropriate graph to present my results (4/5) I can make and use tables with repeat readings (4/5) I can present my data in a variety of ways including line graphs, scatter graphs, classification keys, models and scientific diagrams (4/5)	I can present reasoned explanations in a variety of ways appropriate to audience (5)	I can use a variety of evidence (including secondary sources) to draw conclusions and to develop models (5) I can model more abstract scientific ideas (5)	I can give examples of how scientists develop their ideas from evidence (5) I know that different people may interpret evidence in different ways (5) I can distinguish between fact and opinion and appreciate the information can be biased (5) I can suggest how to make more systematic observations over time to make my results more reliable, identify variables that are difficult to measure (4/5)	I can identify the social and economic impact of scientific developments on different people (5) I can recognise that different people may have different views on scientific developments depending on their circumstances (5)	I can give examples of how sharing and discussion of evidence leads to the development of scientific ideas (5)