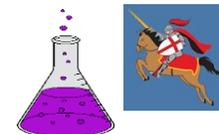




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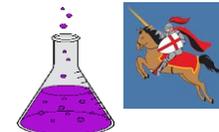


SCIENCE ESSENTIAL SKILLS Y1-Y6: WORKING SCIENTIFICALLY

KEY STAGE 1		LOWER KEY STAGE 2		UPPER KEY STAGE 2	
End of Y1 expectations	End of Y2 expectations	End of Y3 expectations	End of Y4 expectations	End of Y5 expectations	End of Y6 expectations
Asking and answering questions:					
Use everyday language/begin to use simple scientific words to ask or answer a scientific question.	Suggest ideas, ask simple questions and know that they can be answered/investigated in different ways including simple secondary sources, such as books and video clips.	Use ideas to pose questions, independently, about the world around them.	Suggest relevant questions and know that they could be answered in a variety of ways, including using secondary sources such as ICT. Answer questions using straight forward scientific evidence.	Raise different types of scientific questions, and hypotheses.	Pose/select the most appropriate line of enquiry to investigate scientific questions.
Investigating:					
Follow instructions to complete a simple test individually or in a group.	Do things in the correct order when performing a simple test and begin to recognise when something is unfair.	Discuss enquiry methods and describe a fair test.	Make decisions about different enquiries, including recognising when a fair test is necessary and begin to identify variables.	Plan a range of science enquiries, including comparative and fair tests.	Select and plan the most suitable line of enquiry, explaining which variables need to be controlled and why, in a variety of comparative and fair tests.
Observing:					
Observe objects, materials and living things and describe what they see.	Observe something closely and describe changes over time.	Make decisions about what to observe during an investigation.	Make systematic and careful observations.	Plan and carry out comparative and fair tests, making systematic and careful observations.	Make their own decisions about which observations to make, using test results and observations to make predictions or set up further comparative or fair tests.
Equipment and measuring:					
Use simple, non-standard measurements in a practical task.	Use simple equipment, such as hand lenses or egg timers to	Take accurate measurements using standard units.	Take accurate measurements using standard units and a range of equipment,	Take measurements using a range of scientific	Choose the most appropriate equipment in order to



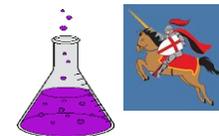
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	take measurements, make observations and carry out simple tests.		including thermometers and data loggers.	equipment with increasing accuracy and precision.	take measurements, explaining how to use it accurately. Decide how long to take measurements for, checking results with additional readings.
Identifying and classifying:					
Sort and group objects, materials and living things, with help, according to simple observational features.	Decide, with help, how to group materials, living things and objects, noticing changes over time and beginning to see patterns.	Talk about criteria for grouping, sorting and categorising, beginning to see patterns and relationships.	Identify similarities/differences/changes when talking about scientific processes. Use and begin to create simple keys.	Use and develop keys to identify, classify and describe living things and materials.	Identify and explain patterns seen in the natural environment.
Recording and reporting findings:					
Talk about their findings and explain what they have found out.	Gather data, record and talk about their findings, in a range of ways, using simple scientific vocabulary.	Record their findings using scientific language and present in note form, writing frames, diagrams, tables and charts.	Choose appropriate ways to record and present information, findings and conclusions for different audiences (e.g. displays, oral or written explanations).	Record data and results of increasing complexity using scientific diagrams, labels, classification keys, tables, bar and line graphs and models.	Choose the most effective approach to record and report results, linking to mathematical knowledge.
Analysing Data:					
Use every day or simple scientific language to ask and/or answer a question on given data.	Identify simple patterns and/or relationships using simple comparative language.	Gather, record and use data in a variety of ways to answer a simple question.	Identify, with help, changes, patterns, similarities and differences in data to help form conclusions. Use scientific evidence to support their findings.	Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.	Identify and explain causal relationships in data and identify evidence that supports or refutes their findings, selecting fact from opinion.
Drawing conclusions:					
Explain, with help, what they think they have found out.	Use simple scientific language to explain what they have found out.	Draw, with help, a simple conclusion based on evidence from an enquiry or observation.	Use recorded data to make predictions, pose new questions and suggest improvements for further enquiries.	Use a simple mode of communication to justify their conclusions on a hypothesis.	Identify validity of conclusion and required improvement to methodology.



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				Begin to recognise how scientific ideas change over time.	Discuss how scientific ideas develop over time.
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KEY VOCABULARY – WORKING SCIENTIFICALLY

KEY STAGE 1	LOWER KEY STAGE 2	UPPER KEY STAGE 2
question answer observe observing equipment identify classify sort diagram chart map data compare contrast describe biology chemistry physics group record	research relevant questions, scientific enquiry, comparative and fair test, systematic, careful observation, accurate measurements equipment thermometer, data logger data gather, record, classify, present record drawings, labelled diagrams, keys, bar charts, tables, oral and written explanations, conclusion, predictions, differences, similarities, changes, evidence, improve, secondary sources, guides, keys, construct, interpret.	plan, variables, measurements, accuracy, precision, repeat readings record data scientific diagrams, labels, classification keys, tables, scatter graphs, bar graph and line graphs, predictions, further comparative and fair test, report and present conclusions, causal relationships, explanations, degree of trust, oral and written display and presentation evidence support, refute ideas or arguments, identify, classify and describe, patterns, systematic, quantitative measurements.