

Appendix 3 | National scientific literacy progress map

Domains of scientific literacy			
Level	Domain A Formulating or identifying investigable questions and hypotheses, planning investigations and collecting evidence	Domain B Interpreting evidence and drawing conclusions, critiquing the trustworthiness of evidence and claims made by others, and communicating findings	Domain C Using understandings for describing and explaining natural phenomena, and for interpreting reports
1	Responds to the teacher's questions, observes and describes.	Describes what happened.	Describes an aspect or property of an individual object or event that has been experienced or reported.
2	Given a question in a familiar context, identifies a variable to be considered, observes and describes or makes non-standard measurements and limited records of data.	Makes comparisons between objects or events observed.	Describes changes to, differences between or properties of objects or events that have been experienced or reported.
3	Formulates scientific questions for testing and makes predictions. Demonstrates awareness of the need for fair testing. Makes simple standard measurements. Records data as tables, diagrams or descriptions.	Displays data as tables or bar graphs, identifies and summarises patterns in science data. Applies the rule by extrapolating or predicting.	Explains the relationships between individual events that have been experienced or reported and can generalise and apply the rule by predicting future events.
4	Identifies the variable to be changed, the variable to be measured and several variables to be controlled. Uses repeated trials or replicates.	Calculates averages from repeat trials or replicates, plots line graphs where appropriate. Conclusions summarise and explain the patterns in the data. Able to make general suggestions for improving an investigation (eg. make more measurements).	Explains interactions, processes or effects, that have been experienced or reported, in terms of a non-observable property or abstract science concept.

Domains of scientific literacy			
Level	Domain A	Domain B	Domain C
	Formulating or identifying investigable questions and hypotheses, planning investigations and collecting evidence	Interpreting evidence and drawing conclusions, critiquing the trustworthiness of evidence and claims made by others, and communicating findings	Using understandings for describing and explaining natural phenomena, and for interpreting reports
5	Formulates scientific questions or hypotheses for testing and plans experiments in which most variables are controlled. Selects equipment that is appropriate and trials measurement procedure to improve techniques and ensure safety.	Conclusions explain the patterns in the data using science concepts, and are consistent with the data. Critiques reports of investigations noting any major flaw in design or inconsistencies in data.	Explains phenomena, or interprets reports about phenomena, using several abstract scientific concepts.
6	Uses scientific knowledge to formulate questions, hypotheses and predictions and to identify the variables to be changed, measured and controlled. Trials and modifies techniques to enhance reliability of data collection.	Selects graph type and scales that display the data effectively. Conclusions are consistent with the data, explain the patterns and relationships in terms of scientific concepts and principles, and relate to the question, hypothesis or prediction. Critiques the trustworthiness of reported data (eg. adequate control of variables, sample or consistency of measurements), and consistency between data and claims.	Explains complex interactions, systems or relationships using several abstract scientific concepts or principles and the relationships between them.

Note 1: It is anticipated that the national standard for scientific literacy for Year 6 students will be set in Level 3.

Note 2: This map was developed for the Primary Science Assessment Project and the Science Education Assessment Resources Project funded by the Australian Government's Department of Education, Science and Training.