

Sciences Objectives: Years 4 & 5

Objective A: Knowing and Understanding

At the end of year 5, students should be able to:

- (i) explain scientific knowledge
- (ii) apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations
- (iii) analyse and evaluate information to make scientifically supported judgments.

Objective B: Inquiring and Designing

At the end of year 5, students should be able to:

- (i) explain a problem or question to be tested by a scientific investigation
- (ii) formulate a testable hypothesis and explain it using scientific reasoning
- (iii) explain how to manipulate the variables, and explain how data will be collected
- (iv) design scientific investigations.

Objective C: Processing and Evaluating

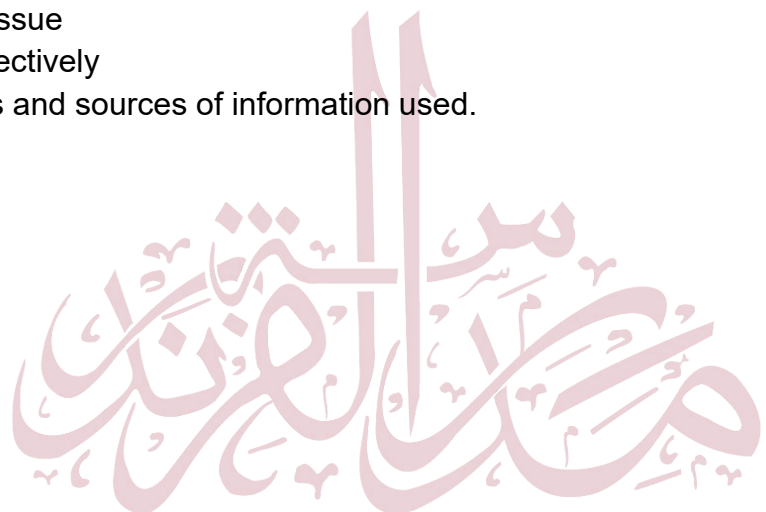
At the end of year 5, students should be able to:

- (i) present collected and transformed data
- (ii) interpret data and explain results using scientific reasoning
- (iii) evaluate the validity of a hypothesis based on the outcome of the scientific investigation
- (iv) evaluate the validity of the method
- (v) explain improvements or extensions to the method.

Objective D: Reflecting on the impacts of science

At the end of year 5, students should be able to:

- (i) explain the ways in which science is applied and used to address a specific problem or issue
- (ii) discuss and evaluate the various implications of using science and its application to solve a specific problem or issue
- (iii) apply scientific language effectively
- (iv) document the work of others and sources of information used.



Sciences Assessment Criteria: Years 4 & 5

Criterion A: Knowing and Understanding

Maximum: 8

Achievement level	Level descriptor
0	The student does not reach a standard described by any of the descriptors below.
1 – 2	The student: <ol style="list-style-type: none"> state scientific knowledge apply scientific knowledge and understanding to suggest solutions to problems set in familiar situations interpret information to make judgments.
3 – 4	The student: <ol style="list-style-type: none"> outline scientific knowledge apply scientific knowledge and understanding to solve problems set in familiar situations interpret information to make scientifically supported judgments.
5 – 6	The student: <ol style="list-style-type: none"> describe scientific knowledge apply scientific knowledge and understanding to solve problems set in familiar situations and suggest solutions to problems set in unfamiliar situations analyse information to make scientifically supported judgments.
7 – 8	The student: <ol style="list-style-type: none"> explain scientific knowledge apply scientific knowledge and understanding to solve problems set in familiar situations and unfamiliar situations analyse and evaluate information to make scientifically supported judgments.



Sciences Assessment Criteria: Years 4 & 5

Criterion B: Inquiring and Designing

Maximum: 8

Achievement level	Level descriptor
0	The student does not reach a standard described by any of the descriptors below.
1 – 2	The student: <ol style="list-style-type: none"> state a problem or question to be tested by a scientific investigation outline a testable hypothesis outline the variables design a method, with limited success.
3 – 4	The student: <ol style="list-style-type: none"> outline a problem or question to be tested by a scientific investigation formulate a testable hypothesis using scientific reasoning outline how to manipulate the variables, and outline how relevant data will be collected design a safe method in which they select materials and equipment.
5 – 6	The student: <ol style="list-style-type: none"> describe a problem or question to be tested by a scientific investigation formulate and explain a testable hypothesis using scientific reasoning describe how to manipulate the variables, and describe how sufficient, relevant data will be collected design a complete and safe method in which they select appropriate materials and equipment.
7 – 8	The student: <ol style="list-style-type: none"> explain a problem or question to be tested by a scientific investigation formulate and explain a testable hypothesis using correct scientific reasoning explain how to manipulate the variables, and explain how sufficient, relevant data will be collected design a logical, complete and safe method in which they select appropriate materials and equipment.

Sciences Assessment Criteria: Years 4 & 5

Criterion C: Processing and Evaluating

Maximum: 8

Achievement level	Level descriptor
0	The student does not reach a standard described by any of the descriptors below.
1 – 2	The student: <ol style="list-style-type: none"> collect and present data in numerical and/or visual forms interpret data state the validity of a hypothesis based on the outcome of a scientific investigation state the validity of the method based on the outcome of a scientific investigation state improvements or extensions to the method.
3 – 4	The student: <ol style="list-style-type: none"> correctly collect and present data in numerical and/or visual forms accurately interpret data and explain results outline the validity of a hypothesis based on the outcome of a scientific investigation outline the validity of the method based on the outcome of a scientific investigation outline improvements or extensions to the method that would benefit the scientific investigation.
5 – 6	The student: <ol style="list-style-type: none"> correctly collect, organize and present data in numerical and/or visual forms accurately interpret data and explain results using scientific reasoning discuss the validity of a hypothesis based on the outcome of a scientific investigation discuss the validity of the method based on the outcome of a scientific investigation describe improvements or extensions to the method that would benefit the scientific investigation.



- The student:
- 7 – 8**
- i. **correctly collect, organize, transform and present** data in numerical and/ or visual forms
 - ii. **accurately interpret** data and **explain** results **using correct scientific reasoning**
 - iii. **evaluate** the validity of a hypothesis based on the outcome of a scientific investigation
 - iv. **evaluate** the validity of the method based on the outcome of a scientific investigation
 - v. **explain** improvements or extensions to the method that would benefit the scientific investigation.

Sciences Assessment Criteria: Years 4 & 5

Criterion D: Reflecting on the impacts of science

Maximum: 8

Achievement level	Level descriptor
0	The student does not reach a standard described by any of the descriptors below.
1 – 2	<p>The student:</p> <ol style="list-style-type: none"> i. outline the ways in which science is used to address a specific problem or issue ii. outline the implications of the use of science to solve a specific problem or issue, interacting with a factor iii. apply scientific language to communicate understanding but does so with limited success iv. document sources, with limited success.
3 – 4	<p>The student:</p> <ol style="list-style-type: none"> i. summarize the ways in which science is used to address a specific problem or issue ii. describe the implications of using science to solve a specific problem or issue, interacting with a factor iii. sometimes apply scientific language to communicate understanding iv. sometimes document sources correctly.
5 – 6	<p>The student:</p> <ol style="list-style-type: none"> i. describe the ways in which science is applied and used to address a specific problem or issue ii. discuss the implications of using science and its application to solve a specific problem or issue, interacting with a factor iii. usually apply scientific language to communicate understanding clearly and precisely iv. usually document sources correctly.

7 – 8

The student:

- i. **explain** the ways in which science is applied and used to address a specific problem or issue
- ii. **discuss and evaluate** the implications of using science and its application to solve a specific problem or issue, interacting with a factor
- iii. **consistently apply** scientific language to communicate understanding **clearly and precisely**
- iv. document sources **completely**.

