Criterion A: Knowing and understanding

Maximum: 8

At the end of year 1, students should be able to:

i. outline scientific knowledge

ii. apply scientific knowledge and understanding to solve problems set in familiar situations and suggest solutions to problems set in unfamiliar situations

iii. interpret information to make scientifically supported judgments.

Achievement level	Level descriptor
0	The student **does not** reach a standard described by any of the descriptors below.
1–2	The student is able to: i. **select** scientific knowledge ii. **select** scientific knowledge and understanding to **suggest solutions** to problems set in **familiar situations** iii. **apply** information to **make judgments**, **with limited success**.
3–4	The student is able to: i. **recall** scientific knowledge ii. **apply** scientific knowledge and understanding to **suggest solutions** to problems set in **familiar situations** iii. **apply** information to **make judgments**.
5–6	The student is able to: i. **state** scientific knowledge ii. **apply** scientific knowledge and understanding to **solve problems** set in **familiar situations** iii. **apply** information to **make scientifically supported judgments**.
7–8	The student is able to: i. **outline** scientific knowledge ii. **apply** scientific knowledge and understanding to **solve problems** set in **familiar situations** and **suggest solutions** to problems set in **unfamiliar situations** iii. **interpret** information to **make scientifically supported judgments**.

Criterion B: Inquiring and designing

Maximum: 8

At the end of year 1, students should be able to:

i.   outline an appropriate problem or research question to be tested by a scientific investigation

ii.   outline a testable prediction using scientific reasoning

iii.   outline how to manipulate the variables, and outline how data will be collected

iv.   design scientific investigations.

Achievement level	Level descriptor
0	The student **does not** reach a standard described by any of the descriptors below.
1–2	The student is able to: i. **select** a problem or question to be tested by a scientific investigation ii. **select** a testable prediction iii. **state** a variable iv. design a **method with limited success**.
3–4	The student is able to: i. **state** a problem or question to be tested by a scientific investigation ii. **state** a testable prediction iii. **state** how to manipulate the variables, and **state** how **data** will be collected iv. design a **safe method** in which he or she **selects materials and equipment**.
5–6	The student is able to: i. **state** a problem or question to be tested by a scientific investigation ii. **outline** a testable prediction iii. **outline** how to manipulate the variables, and **state** how **relevant data** will be collected iv. design a **complete and safe method** in which he or she **selects appropriate materials and equipment**.
7–8	The student is able to: i. **outline** a problem or question to be tested by a scientific investigation ii. **outline** a testable prediction **using scientific reasoning** iii. **outline** how to manipulate the variables, and **outline** how **sufficient, relevant data** will be collected iv. design a **logical, complete and safe method** in which he or she **selects appropriate materials and equipment**.

Criterion C: Processing and evaluating

Maximum: 8

At the end of year 1, students should be able to:

i.   present collected and transformed data

ii.   interpret data and outline results using scientific reasoning

iii. discuss the validity of a prediction based on the outcome of the scientific investigation

iv.   discuss the validity of the method

v.   describe improvements or extensions to the method.

Achievement level	Level descriptor
0	The student **does not** reach a standard described by any of the descriptors below.
1–2	The student is able to: i. **collect and present** data in numerical and/or visual forms ii. **interpret** data iii. **state** the validity of a prediction based on the outcome of a scientific investigation, **with limited success** iv. **state** the validity of the method based on the outcome of a scientific investigation, **with limited success** v. **state** improvements or extensions to the method that would benefit the scientific investigation, **with limited success**.
3–4	The student is able to: i. **correctly collect and present** data in numerical and/or visual forms i. **accurately interpret** data and **outline** results iii. **state** the validity of a prediction based on the outcome of a scientific investigation iv. **state** the validity of the method based on the outcome of a scientific investigation v. **state** improvements or extensions to the method that would benefit the scientific investigation.
5–6	The student is able to: i. **correctly collect, organize and present** data in numerical and/or visual forms ii. **accurately interpret** data and **outline** results **using scientific reasoning** iii. **outline** the validity of a prediction based on the outcome of a scientific investigation iv. **outline** the validity of the method based on the outcome of a scientific investigation v. **outline** improvements or extensions to the method that would benefit the scientific investigation.
7–8	The student is able to: i. **correctly collect, organize, transform and present** data in numerical and/or visual forms ii. **accurately interpret data** and **outline** results **using correct scientific reasoning** iii. **discuss** the validity of a prediction based on the outcome of a scientific investigation iv. **discuss** the validity of the method based on the outcome of a scientific investigation v. **describe** improvements or extensions to the method that would benefit the scientific investigation.

Criterion D: Reflecting on the impacts of science

Maximum: 8

At the end of year 1, students should be able to:

i.   summarize the ways in which science is applied and used to address a specific problem or issue

ii.   describe and summarize the various implications of using science and its application in solving a specific problem or issue

iii.   apply scientific language effectively

iv.   document the work of others and sources of information used.

Achievement level	Level descriptor
0	The student **does not** reach a standard described by any of the descriptors below.
1–2	The student is able to, **with limited success**: i. **state** the ways in which science is used to address a specific problem or issue ii. **state** the implications of using science to solve a specific problem or issue, interacting with a factor iii. **apply** scientific language to communicate understanding iv. document sources.
3–4	The student is able to: i. **state** the ways in which science is used to address a specific problem or issue ii. **state** 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	The student is able to: i. **outline** the ways in which science is used to address a specific problem or issue ii. **outline** the implications of using science 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 is able to: i. **summarize** the ways in which science is applied and used to address a specific problem or issue ii. **describe and summarize** 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**.