Criterion A: Knowing and Understanding

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	Task Specific Clarification
Self Score	Teacher Score		
0	0	The student **does not** reach a standard described by any of the descriptors below.	
1–2	1-2	The student is able to: **select** scientific knowledge **select** scientific knowledge and understanding to **suggest solutions** to problems set in **familiar situations** **apply** information to **make judgments**, **with limited success.**	
3–4	3-4	The student is able to: **recall** scientific knowledge **apply** scientific knowledge and understanding to **suggest solutions** to problems set in **familiar situations**	

Achievement Level		Level Descriptor	Task Specific Clarification
		apply information to **make judgments**.	
5–6	5-6	The student is able to: **state** scientific knowledge **apply** scientific knowledge and understanding to **solve problems** set in **familiar situations** **apply** information to **make scientifically supported judgments**.	
7–8	7-8	The student is able to: **outline** scientific knowledge **apply** scientific knowledge and understanding to **solve problems** set in **familiar situations** and **suggest solutions** to problems set in **unfamiliar situations** **interpret** information to **make scientifically supported judgments**.	

Criterion B: Inquiring and Designing

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	Task Specific Clarification

Self Score	Teacher Score		
0	0	The student **does not** reach a standard described by any of the descriptors below.	
1–2	1-2	The student is able to: **select** a problem or question to be tested by a scientific investigation **select** a testable prediction **state** a variable design a **method with limited success**.	
3–4	3-4	The student is able to: **state** a problem or question to be tested by a scientific investigation **state** a testable prediction **state** how to manipulate the variables, and **state** how **data** will be collected design a **safe method** in which he or she **selects materials and equipment**.	
5–6	5-6	The student is able to: **state** a problem or question to be tested by a scientific investigation **outline** a testable prediction **outline** how to manipulate the variables,	

Achievement Level		Level Descriptor	Task Specific Clarification
		and **state** how **relevant data** will be collected	
		design a **complete and safe method** in which he or she **selects appropriate materials and equipment**.	
7–8	7-8	The student is able to:	
		outline a problem or question to be tested by a scientific investigation	
		outline a testable prediction **using scientific reasoning**	
		outline how to manipulate the variables, and **outline** how **sufficient, relevant data** will be collected	
		design a **logical, complete and safe method** in which he or she **selects appropriate materials and equipment**.	

Criterion C: Processing and Evaluating

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	Task Specific Clarification

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

Criterion D: Reflecting on the impacts of science

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	Task Specific Clarification
Self Score	Teacher Score		
0	0	The student **does not** reach a standard described by any of the descriptors below.	
1–2	1-2	The student is able to, **with limited success**: **state** the ways in which science is used to address a specific problem or issue **state** the implications of using science to solve a	

		specific problem or issue, interacting with a factor **apply** scientific language to communicate understanding document sources.	
3–4	3-4	The student is able to: **state** the ways in which science is used to address a specific problem or issue **state** the implications of using science to solve a specific problem or issue, interacting with a factor **sometimes apply** scientific language to communicate understanding **sometimes** document sources correctly.	
5–6	5-6	The student is able to: **outline** the ways in which science is used to address a specific problem or issue **outline** the implications of using science to solve a specific problem or issue, interacting with a factor **usually apply** scientific language to communicate understanding **clearly and precisely** **usually** document sources correctly.	
7–8	7-8	The student is able to: **summarize** the ways in which science is applied and used to address a specific problem or issue	

		describe and summarize the implications of using science and its application to solve a specific problem or issue, interacting with a factor **consistently apply** scientific language to communicate understanding **clearly and precisely** document sources **completely**.	

Criterion A: Knowing and Understanding

At the end of year 3, students should be able to:

i.   describe scientific knowledge

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

iii. analyse information to make scientifically supported judgments.

Achievement Level		Level Descriptor	Task Specific Clarification
Self Score	Teacher Score		
0	0	The student **does not** reach a standard indicated by any of the descriptors below.	
1–2	1-2	The student is able to: **recall** scientific knowledge apply scientific knowledge and understanding to **suggest solutions** to problems set in **familiar situations** **apply** information to make **judgments**.	
3–4	3-4	The student is able to: **state** scientific knowledge apply scientific knowledge and understanding to **solve problems** set in **familiar situations**	

		apply information to make **scientifically supported judgments**.	
5–6	5-6	The student is able to: **outline** scientific knowledge apply scientific knowledge and understanding to **solve problems** set in **familiar situations** and **suggest solutions** to problems set in **unfamiliar situations** **interpret** information to make **scientifically supported judgments**.	
7–8	7-8	The student is able to: **describe** scientific knowledge apply scientific knowledge and understanding to **solve problems** set in **familiar and unfamiliar situations** **analyse** information to make **scientifically supported judgments**.	

Criterion B: Inquiring and Designing

At the end of year 3, students should be able to:

i.   describe a problem or question to be tested by a scientific investigation

ii.   outline a testable hypothesis and explain it using scientific reasoning

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

iv.   design scientific investigations.

Achievement Level		Level Descriptor	Task Specific Clarification
Self Score	Teacher Score		
0	0	The student **does not** reach a standard identified by any of the descriptors below.	
1–2	1-2	The student is able to: **state** a problem or question to be tested by a scientific investigation, with **limited success** **state** a testable hypothesis **state** the variables design **a method, with limited success**.	
3–4	3-4	The student is able to: **state** a problem or question to be tested by a scientific investigation **outline** a testable hypothesis **using scientific reasoning**	

		outline how to manipulate the variables, and **state** how **relevant data** will be collected design a **safe method** in which he or she **selects materials and equipment**.	
5–6	5-6	The student is able to: **outline** a problem or question to be tested by a scientific investigation **outline and explain** a testable hypothesis **using scientific reasoning** **outline** how to manipulate the variables, and **outline** how **sufficient, relevant data** will be collected design **a complete and safe method** in which he or she **selects appropriate materials and equipment**.	
7–8	7-8	The student is able to: **describe** a problem or question to be tested by a scientific investigation **outline and explain** a testable hypothesis **using correct scientific reasoning** **describe** how to manipulate the variables, and **describe** how **sufficient, relevant** data will be collected design a **logical, complete and safe method** in which he or she **selects appropriate materials and equipment**.	

Criterion C: Processing and Evaluating

At the end of year 3, students should be able to:

i.   present collected and transformed data

ii.   interpret data and describe results using scientific reasoning

iii.   discuss the validity of a hypothesis 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	Task Specific Clarification
Self Score	Teacher Score		
0	0	The student **does not** reach a standard identified by any of the descriptors below.	
1–2	1-2	The student is able to: **collect and present** data in numerical and/or visual forms **interpret** data **state** the validity of a hypothesis **with limited reference** to a scientific investigation **state** the validity of the method **with limited reference** to a scientific investigation **state limited** improvements or extensions to the method.	
		The student is able to:	

3–4	3-4	**correctly collect and present** data in numerical and/or visual forms	
		accurately interpret data and **describe** results	
		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 that would benefit the scientific investigation.	
5–6	5-6	The student is able to:	
		correctly collect, organize and present data in numerical and/or visual forms	
		accurately interpret data and **describe** results **using scientific reasoning**	
		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.	
		The student is able to:	

7–8	7-8	**correctly collect, organize, transform and present** data in numerical and/or visual forms	
		accurately interpret data and **describe** results **using correct 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.	

Criterion D: Reflecting on the impacts of science

At the end of year 3, students should be able to:

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

ii.   discuss and analyse 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	Task Specific Clarification
Self Score	Teacher Score		

0	0	The student **does not** reach a standard identified by any of the descriptors below.	
1–2	1-2	The student is able to: **state** the ways in which science is used to address a specific problem or issue **state** the implications of the use of science to solve a specific problem or issue, interacting with a factor **apply** scientific language to communicate understanding but does so **with limited success** document sources, **with limited success**.	
3–4	3-4	The student is able to: **outline** the ways in which science is used to address a specific problem or issue **outline** the implications of using science to solve a specific problem or issue, interacting with a factor **sometimes apply** scientific language to communicate understanding **sometimes** document sources **correctly**.	
5–6	5-6	The student is able to: **summarize** the ways in which science is applied and used to address a specific problem or issue	

		describe the implications of using science and its application to solve a specific problem or issue, interacting with a factor **usually apply** scientific language to communicate understanding **clearly and precisely** **usually** document sources **correctly**.	
7–8	7-8	The student is able to: **describe** the ways in which science is applied and used to address a specific problem or issue **discuss and analyse** the implications of using science and its application to solve a specific problem or issue, interacting with a factor **consistently apply** scientific language to communicate understanding **clearly and precisely** document sources **completely**.	