# Criterion A: Knowing and understanding

Maximum: 8

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

- i. outline scientific knowledge
- 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.

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Feedback:	 	 	 

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Feedback:	 	 	 

## Criterion B: Inquiring and designing

#### Maximum: 8

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

- . 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 collect  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 be collected  iv. design a complete and safe method in which he or she selects approprimaterials 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 sufficie relevant data will be collected  iv. design a logical, complete and safe method in which he or she sele appropriate materials and equipment.


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- 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.
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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.

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- iii. outline how to manipulate the variables, and outline how data will be collected
- iv. design scientific investigations.

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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.
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- 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.

Feedback:

Achievement level	Level descriptor
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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.
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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.

Feedback:	 	 	 

# Criterion C: Processing and evaluating

Maximum: 8
At the end of year 1, students should be able to:

- 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.
	The student is able to:
	i. collect and present data in numerical and/or visual forms
	ii. interpret data
1-2	iii. state the validity of a prediction based on the outcome of a scientific investigation, with limited success
	<ul> <li>iv. state the validity of the method based on the outcome of a scientific investigation, with limited success</li> </ul>
	<ul> <li>state improvements or extensions to the method that would benefit the scientific investigation, with limited success.</li> </ul>
	The student is able to:
	i. correctly collect and present data in numerical and/or visual forms
	ii. accurately interpret data and outline results
3-4	iii. state the validity of a prediction based on the outcome of a scientific investigation
	iv. <b>state</b> 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.
	The student is able to:
	<ul> <li>correctly collect, organize and present data in numerical and/or visual forms</li> </ul>
	ii. accurately interpret data and outline results using scientific reasoning
5-6	iii. outline the validity of a prediction based on the outcome of a scientific investigation
	<ul> <li>outline the validity of the method based on the outcome of a scientific investigation</li> </ul>
	v. <b>outline</b> improvements or extensions to the method that would benefit the
	scientific investigation.
	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
7-8	reasoning
	<ol> <li>discuss the validity of a prediction based on the outcome of a scientific investigation</li> </ol>
	iv. <b>discuss</b> the validity of the method based on the outcome of a scientific investigation
	<ul> <li>describe improvements or extensions to the method that would benefit the scientific investigation.</li> </ul>

Feedback:	 	 

# 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  ii. 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.
56	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.

Feedback:	 	 	

# Criterion D: Reflecting on the impacts of science

Maximum:

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
- 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	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.

Feedback:	 	
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# Criterion D: Reflecting on the impacts of science

Maximum:

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
- 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.
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Feedback: _	 	 	 