SCIENCES

Criterion A: Knowing and understanding

Maximum: 8

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

1. outline scientific knowledge
2. apply scientific knowledge and understanding to solve problems set in familiar situations and suggest solutions to problems set in unfamiliar situations
3. interpret information to make scientifically supported judgements.

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| **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: 1. **select** scientific knowledge
2. **select** scientific knowledge and understanding to **suggest solutions** to problems set in **familiar situations**
3. **apply** information to make **judgements, with limited success.**
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| 3-4 | The student is able to: 1. **recall** scientific knowledge
2. **apply** scientific knowledge and understanding to **suggest solutions** to problems set in **familiar situations**
3. **apply** information to make **judgements.**
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| 5-6 | The student is able to: 1. **state** scientific knowledge
2. **apply** scientific knowledge and understanding to **solve problems** set in **familiar situations**
3. **apply** information to make **scientifically supported** **judgements.**
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| 7-8 | The student is able to: 1. **outline** scientific knowledge
2. **apply** scientific knowledge and understanding to **solve problems** set in **familiar situations** and **suggest solutions** to problems set in **unfamiliar situations**
3. **interpret** information to make **scientifically supported** **judgements.**
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Criterion B: Inquiring and designing

Maximum: 8

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

1. outline an appropriate problem or research question to be tested by a scientific investigation
2. outline a testable prediction using scientific reasoning
3. outline how to manipulate the variables, and outline how data will be collected
4. design scientific investigations.

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| **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: 1. **select** a problem or question to be tested by a scientific investigation
2. **select** a testable prediction
3. **state** a variable
4. design **a method**, **with limited success.**
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| 3-4 | The student is able to: 1. **state** a problem or question to be tested by a scientific investigation
2. **state** a testable prediction
3. **state** how to manipulatethe variables, and **state** how **data** will be collected
4. design a **safe method**, in which he or she **selects materials and equipment.**
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| 5-6 | The student is able to: 1. **state** a problem or question to be tested by a scientific investigation
2. **outline** a testable prediciton
3. **outline** how to manipulatethe variables, and **state** how **relevant data** will be collected
4. design a **complete and safe method**, in which he or she **selects appropriate materials and equipment.**
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| 7-8 | The student is able to: 1. **outline** a problem or question to be tested by a scientific investigation
2. **outline** a testable prediciton **using correct scientific reasoning**
3. **outline** how to manipulatethe variables, and **outline** how **sufficient, relevant data** will be collected
4. design a **logical, complete and safe method**, in which he or she **selects appropriate materials and equipment.**
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Criterion C: Processing and evaluating

Maximum: 8

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

1. present collected and transformed data
2. interpret data and describe results using scientific reasoning
3. discuss the validity of a prediction based on the outcome of the scientific investigation
4. discuss the validity of the method
5. describe improvements or extensions to the method.

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| **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: 1. **collect and present** data in numerical and/or visual forms
2. **interpret** data
3. **state** the validity of a prediction based on the outcome of a scientific investigation, **with limited success**
4. **state** the validity of the method based on the outcome of a scientific investigation, **with limited success**
5. **state** improvements or extensions to the method that would benefit the scientific investigation, **with limited success**.
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| 3-4 | The student is able to: 1. **correctly** **collect and present** data in numerical and/or visual forms
2. **accurately interpret** data and **outline** results
3. **state** the validity of a prediction based on the outcome of a scientific investigation
4. **state** the validity of the method based on the outcome of a scientific investigation
5. **state** improvements or extensions to the method that would benefit the scientific investigation.
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| 5-6 | The student is able to: 1. **correctly** **collect, organize and present** data in numerical and/or visual forms
2. **accurately interpret** data and **outline** results **using scientific reasoning**
3. **outline** the validity of a prediction based on the outcome of a scientific investigation
4. **outline** the validity of the method based on the outcome of a scientific investigation
5. **outline** improvements or extensions to the method that would benefit the scientific investigation.
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| 7-8 | The student is able to: 1. **correctly** **collect, organize, transform and present** data in numerical and/or visual forms
2. **accurately interpret** **data** and **outline** results **using correct scientific reasoning**
3. **discuss** the validity of a prediction based on the outcome of a scientific investigation
4. **discuss** the validity of the method based on the outcome of a scientific investigation
5. **describe** improvements or extensions to the method that would benefit the scientific investigation.
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Criterion D: Reflecting on the impacts of science

Maximum: 8

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

1. summarize the ways in which science is applied and used to address a specific problem or issue
2. describe and summarize the various implications of using science and its application in solving a specific problem or issue
3. apply scientific language effectively
4. document the work of others and sources of information used.

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| **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**: 1. **state** the ways in which science is used to address a specific problem or issue
2. **state** the implications of using science to solve a specific problem or issue, interacting with a factor
3. **apply** scientific language to communicate understanding
4. document sources.
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| 3-4 | The student is able to: 1. **state** the ways in which science is applied and used to address a specific problem or issue
2. **state** the implications of using science to solve a specific problem or issue, interacting with a factor
3. **sometimes apply** scientific language to communicate understanding
4. **sometimes** document sources correctly.
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| 5-6 | The student is able to: 1. **outline** the ways in which science is applied and used to address a specific problem or issue
2. **outline** the implications of using science and its application to solve a specific problem or issue, interacting with a factor
3. **usually apply** scientific language to communicate understanding **clearly and precisely**
4. **usually** document sources correctly.
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| 7-8 | The student is able to: 1. **summarize** the ways in which science is applied and used to address a specific problem or issue
2. **describe and summarize** the implications of using science and its application to solve a specific problem or issue, interacting with a factor
3. **consistently apply** scientific language to communicate understanding **clearly and precisely**
4. document sources **completely**.
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