**Criterion A: Knowing and understanding**

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| **Achievement level** | **Descriptor** |
| 0 | The student does not reach a standard identified by any of the descriptors below. |
| 1-2 | The student is able to:1. **state** scientific knowledge
2. apply scientific knowledge and understanding to **suggest solutions** to problems set in **familiar situations**
3. **interpret** information to make **judgments**.
 |
| 3-4 | The student is able to:1. **outline** scientific knowledge
2. apply scientific knowledge and understanding to **solve problems** set in **familiar situations**
3. **interpret** information to make **scientifically** **supported** **judgments**.
 |
| 5-6 | The student is able to:1. **describe** 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. **analyse** information to make **scientifically** **supported** **judgments**.
 |
| 7-8 | The student is able to:1. **explain** scientific knowledge
2. apply scientific knowledge and understanding to **solve problems** set in **familiar and unfamiliar situations**
3. **analyse** and **evaluate** information to make **scientifically** **supported** **judgments**.
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**Criterion B: Inquiring and designing**

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| **Achievement level** | **Descriptor** |
| 0 | The student does not reach a standard identified by any of the descriptors below. |
| 1-2 | The student is able to:1. **state** a problem or question to be tested by a scientific investigation
2. **outline** a testable hypothesis
3. **outline** the variables
4. **design** a method, with **limited success**.
 |
| 3-4 | The student is able to:1. **outline** a problem or question to be tested by a scientific investigation
2. **formulate** a testable hypothesis **using scientific reasoning**
3. **outline** how to manipulate the variables, and **outline** how **relevant data** will be collected
4. design a **safe method** in which he or she **selects materials and equipment**.
 |
| 5-6 | The student is able to:1. **describe** a problem or question to be tested by a scientific investigation
2. **formulate and explain** a testable hypothesis **using scientific reasoning**
3. **describe** how to manipulate the variables, and **describe** how **sufficient, relevant data** will be collected
4. design a **complete and safe method** in which he or she selects **appropriate materials and equipment**.
 |
| 7-8 | The student is able to:1. **explain** a problem or question to be tested by a scientific investigation
2. **formulate and explain** a testable hypothesis **using correct scientific reasoning**
3. **explain** how to manipulate the variables, and **explain** 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**

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| **Achievement level** | **Descriptor** |
| 0 | The student does not reach a standard identified 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 hypothesis 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.
 |
| 3-4 | The student is able to:1. **correctly collect and present** data in numerical and/or visual forms
2. **accurately interpret** data and **explain** results
3. **outline** the validity of a hypothesis 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.
 |
| 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 **explain** results **using scientific reasoning**
3. **discuss** the validity of a hypothesis 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.
 |
| 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 **explain** results **using correct scientific reasoning**
3. **evaluate** the validity of a hypothesis based on the outcome of a scientific investigation
4. **evaluate** the validity of the method based on the outcome of a scientific investigation
5. **explain** improvements or extensions to the method that would benefit the scientific investigation.
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**Criterion D: Reflecting on the impacts of science**

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| **Achievement level** | **Descriptor** |
| 0 | The student does not reach a standard identified by any of the descriptors below. |
| 1-2 | The student is able to:1. **outline** the ways in which science is used to address a specific problem or issue
2. **outline** the implications of using science to solve a specific problem or issue, interacting with a factor
3. **apply** scientific language to communicate understanding but does so **with limited success**
4. document sources, **with limited success**.
 |
| 3-4 | The student is able to:1. **summarize** the ways in which science is used to address a specific problem or issue
2. **describe** the implications of using science and its application to solve a specific problem or issue, interacting with a factor
3. **sometimes apply** scientific language to communicate understanding
4. **sometimes** document sources correctly.
 |
| 5-6 | The student is able to:1. **describe** the ways in which science is used to address a specific problem or issue
2. **discuss** 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.
 |
| 7-8 | The student is able to:1. **explain** the ways in which science is used to address a specific problem or issue
2. **discuss and evaluate** 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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