Mathematics

Criterion A: Knowing and understanding

Maximum: 8

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

1. **select** appropriate mathematics when solving problems in both familiar and unfamiliar situations
2. **apply** the selected mathematics successfully when solving problems
3. **solve** problems correctly in a variety of contexts.

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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** appropriate mathematics when solving simple problems in familiar situations
2. **apply** the selected mathematics successfully when solving these problems
3. generally **solve** these problems correctly.
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| 3-4 | The student is able to: 1. **select** appropriate mathematics when solving more complex problems in familiar situations
2. **apply** the selected mathematics successfully when solving these problems
3. generally **solve** these problems correctly.
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| 5-6 | The student is able to: 1. **select** appropriate mathematics when solving challenging problems in familiar situations
2. **apply** the selected mathematics successfully when solving these problems
3. generally **solve** these problems correctly.
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| 7-8 | The student is able to: 1. **select** appropriate mathematics when solving challenging problems in both familiar and unfamiliar situations
2. **apply** the selected mathematics successfully when solving these problems
3. generally **solve** these problems correctly.
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Criterion B: Investigating patterns

Maximum: 8

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

1. **select** and **apply** mathematical problem-solving techniques to discover complex patterns
2. **describe** patterns as relationships and/or general rules consistent with findings
3. **verify** and **justify** relationships and /or general rules.

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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. **apply**, with teacher support, mathematical problem-solving techniques to discover simple patterns
2. **state** predictions consistent with patterns.
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| 3-4 | The student is able to: 1. **apply** mathematical problem-solving techniques to discover simple patterns
2. **suggest** relationships and/or general rules consistent with findings.
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| 5-6 | The student is able to: 1. **select** and apply mathematical problem-solving techniques to discover complex patterns
2. **describe** patterns as relationships and/or general rules consistent with findings.
3. **verify** these relationships and/or general rules.
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| 7-8 | The student is able to: 1. **select** and apply mathematical problem-solving techniques to discover complex patterns
2. **describe** patterns as relationships and/or general rules consistent with correct findings.
3. **verify** and **justify** these relationships and/or general rules.
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Criterion C: Communicating

Maximum: 8

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

1. **use** appropriate mathematical language (notation, symbols and terminology) in both oral and written explanations
2. **use** different forms of mathematical representation to present information
3. **move** between different forms of mathematical representation
4. **communicate** complete and coherent mathematical lines of reasoning
5. **organize** information using a logical structure.

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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. **use** limited mathematical language
2. **use** limited forms of mathematical representation to present information
3. **communicate** through lines of reasoning that are difficult to interpret.
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| 3-4 | The student is able to: 1. **use** some appropriate mathematical language
2. **use** appropriate forms of mathematical representation to present information adequately
3. **communicate** through lines of reasoning that are able to be understood, although these are not always clear
4. adequately **organize** information using a logical structure.
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| 5-6 | The student is able to: 1. usually **use** appropriate mathematical language
2. usually **use** different forms of mathematical representation to present information correctly
3. move between different forms of mathematical representation with some success
4. **communicate** through lines of reasoning that are clear although not always coherent or complete
5. present work that is usually **organized** using a logical structure.
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| 7-8 | The student is able to: 1. consistently **use** appropriate mathematical language
2. **use** different forms of mathematical representation to consistently present information correctly
3. move effectively between different forms of mathematical representation
4. **communicate** through lines of reasoning that are complete and coherent
5. presentwork that is consistently **organized** using a logical structure.
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Criterion D: Applying mathematics in real-life contexts

Maximum: 8

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

1. **identify** relevant elements of authentic real-life situations
2. **select** appropriate mathematical strategies when solving authentic real-life situations
3. **apply** the selected mathematical strategies successfully to reach a solution
4. **explain** the degree of accuracy of a solution
5. **explain** whether a solution makes sense in the context of the authentic real-life situation.

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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. **identify** some of the elements of the authentic real-life situation
2. **apply** mathematical strategies to find a solution to the authentic real-life situation, with limited success.
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| 3-4 | The student is able to: 1. **identify** the relevant elements of the authentic real-life situation
2. **select**, with some success, adequate mathematical strategies to model the authentic real-life situation
3. **apply** mathematical strategies to reach a solution to the authentic real-life situation
4. **describe** whether the solution makes sense in the context of the authentic real-life situation.
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| 5-6 | The student is able to: 1. **identify** the relevant elements of the authentic real-life situation
2. **select** adequate mathematical strategies to model the authentic real-life situation
3. **apply** the selected mathematical strategies to reach a valid solution to the authentic real-life situation
4. **describe** the degree of accuracy of the solution
5. **discuss** whether the solution makes sense in the context of the authentic real-life situation.
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| 7-8 | The student is able to: 1. **identify** the relevant elements of the authentic real-life situation
2. **select** appropriate mathematical strategies to model the authentic real-life situation
3. **apply** the selected mathematical strategies to reach a correct solution
4. **explain** the degree of accuracy of the solution
5. **explain** whether the solution makes sense in the context of the authentic real-life situation.
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