Mathematics

Criterion A: Knowing and understanding

Maximum: 8

At the end of year 5, 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. |
| 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. |
| 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. |
| 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. |

Criterion B: Investigating patterns

Maximum: 8

At the end of year 5, students should be able to:

1. **select** and **apply** mathematical problem-solving techniques to discover complex patterns
2. **describe** patterns as general rules consistent with findings
3. **prove**, or **verify** and **justify**, 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. |
| 3-4 | The student is able to:   1. **apply** mathematical problem-solving techniques to discover simple patterns 2. **suggest**  general rules consistent with findings. |
| 5-6 | The student is able to:   1. **select** and apply mathematical problem-solving techniques to discover complex patterns 2. **describe** patterns as general rules consistent with findings. 3. **verify** the validity of these general rules. |
| 7-8 | The student is able to:   1. **select** and **apply** mathematical problem-solving techniques to discover complex patterns 2. **describe** patterns as general rules consistent with correct findings. 3. **prove**, or **verify** and **justify**, these general rules. |

Criterion C: Communicating

Maximum: 8

At the end of year 5, students should be able to:

1. **use** appropriate mathematical language (notation, symbols and terminology) in both oral and written explanations
2. **use** appropriate forms of mathematical representation to present information
3. move between different forms of mathematical representation
4. **communicate** complete, coherent and concise 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. |
| 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 complete 4. adequately **organize** information using a logical structure. |
| 5-6 | The student is able to:   1. usually **use** appropriate mathematical language 2. usually **use** appropriate forms of mathematical representation to present information correctly 3. **communicate** through lines of reasoning that are complete and coherent 4. **present**  work that is usually organized using a logical structure. |
| 7-8 | The student is able to:   1. consistently **use** appropriate mathematical language 2. **use** appropriate 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, coherent and concise 5. **present**  work that is consistently organized using a logical structure. |

Criterion D: Applying mathematics in real-life contexts

Maximum: 8

At the end of year 5, 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. **justify** the degree of accuracy of a solution
5. **justify** 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. |
| 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. **discuss** whether the solution makes sense in the context of the authentic real-life situation. |
| 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. **explain** the degree of accuracy of the solution 5. **explain** whether the solution makes sense in the context of the authentic real-life situation. |
| 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 to the authentic real-life situation 4. **justify** the degree of accuracy of the solution 5. **justify** whether the solution makes sense in the context of the authentic real-life situation. |