## Problem Solving Knowledge and Skills

### Statements for Grades K – 8: Set 1

<table>
<thead>
<tr>
<th>GRADE</th>
<th>Underlying processes and mathematical tools.</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>K.13 The student applies Kindergarten mathematics to solve problems connected to everyday experiences and activities in and outside of school. The student is expected to: (A) identify mathematics in everyday situations; (B) use a problem-solving model, with guidance, that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness; (C) select or develop an appropriate problem-solving strategy including drawing a picture, looking for a pattern, systematic guessing and checking, or acting it out in order to solve a problem; and (D) use tools such as real objects, manipulatives, and technology to solve problems.</td>
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<tr>
<td>1</td>
<td>1.11 The student applies Grade 1 mathematics to solve problems connected to everyday experiences and activities in and outside of school. The student is expected to: (A) identify mathematics in everyday situations; (B) use a problem-solving model, with guidance as needed, that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness; (C) select or develop an appropriate problem-solving strategy including drawing a picture, looking for a pattern, systematic guessing and checking, or acting it out in order to solve a problem; and (D) use tools such as real objects, manipulatives, and technology to solve problems.</td>
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<td>2</td>
<td>2.12 The student applies Grade 2 mathematics to solve problems connected to everyday experiences and activities in and outside of school. The student is expected to: (A) identify the mathematics in everyday situations; (B) use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness; (C) select or develop an appropriate problem-solving strategy including drawing a picture, looking for a pattern, systematic guessing and checking, or acting it out in order to solve a problem; and (D) use tools such as real objects, manipulatives, and technology to solve problems.</td>
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<tr>
<td>3</td>
<td>3.15 The student applies Grade 3 mathematics to solve problems connected to everyday experiences and activities in and outside of school. The student is expected to: (A) identify the mathematics in everyday situations; (B) use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness; (C) select or develop an appropriate problem-solving strategy including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and (D) use tools such as real objects, manipulatives, and technology to solve problems.</td>
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<tr>
<td>4</td>
<td>4.14 The student applies Grade 4 mathematics to solve problems connected to</td>
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#### Statements for Grades K – 8: Set 1

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<th>Description</th>
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</table>
| **K – 8** | The student is expected to:  
(A) identify the mathematics in everyday situations;  
(B) use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;  
(C) select or develop an appropriate problem-solving strategy including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and  
(D) use tools such as real objects, manipulatives, and technology to solve problems.  
4.14 The student applies Grade 4 mathematics to solve problems connected to everyday experiences and activities in and outside of school. The student is expected to:  
(A) identify the mathematics in everyday situations;  
(B) use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;  
(C) select or develop an appropriate problem-solving strategy including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and  
(D) use tools such as real objects, manipulatives, and technology to solve problems.  
5.14 The student applies Grade 5 mathematics to solve problems connected to everyday experiences and activities in and outside of school. The student is expected to:  
(A) identify the mathematics in everyday situations;  
(B) use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;  
(C) select or develop an appropriate problem-solving strategy including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and  
(D) use tools such as real objects, manipulatives, and technology to solve problems.  
6.11 The student applies Grade 6 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school. The student is expected to:  
(A) identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics;  
(B) use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;  
(C) select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and  
(D) select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number.
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<th>Grade</th>
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| 7     | 7.13 The student applies Grade 7 mathematics to solve problems connected to everyday experience, investigations in other disciplines, and activities in and outside of school. The student is expected to:  
(A) identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics;  
(B) use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;  
(C) select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and  
(D) select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems. |
| 8     | 8.14 The student applies Grade 8 mathematics to solve problems connected to everyday experience, investigations in other disciplines, and activities in and outside of school. The student is expected to:  
(A) identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics;  
(B) use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;  
(C) select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and  
(D) select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems. |