Problem Solving Knowledge and Skills Statements for Grades K – 8: Set 1

GRADE	**Underlying processes and mathematical tools.**
K	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.*
1	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.*
2	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.*
3	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.*
4	4.14 The student applies Grade 4 mathematics to solve problems connected to

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	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.* 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	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	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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	sense to solve problems.
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.*

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