

Mathematics, Grade 5

Problem Solving, Processes and Tools

Problem solving, language and communications, connections within and outside mathematics and formal and informal reasoning underlie all content areas in mathematics. Throughout mathematics in Grade 3-5, **and on a daily basis**, students use these processes together with technology and other mathematical tools such as manipulative materials to develop conceptual understanding and solve problems as they do mathematics.

Underlying processes and mathematical tools

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 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, 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.

Underlying processes and mathematical tools

The student communicates about Grade 5 mathematics using informal language. The student is expected to:

- A. explain and record observations using objects, words, pictures, numbers, and technology; and
- B. relate everyday language to mathematical language and symbols.

Underlying processes and mathematical tools

The student uses logical reasoning to make sense of his or her world. The student is expected to:

- A. make generalizations from patterns or sets of examples and nonexamples; and
- B. justify why an answer is reasonable and explain the solution process.