

## Curriculum Expectations Related to Addition and Subtraction, Grades 4, 5, and 6

By the end of Grade 4, students will:	By the end of Grade 5, students will:	By the end of Grade 6, students will:
<p><b>Overall Expectation</b></p> <ul style="list-style-type: none"> <li>• solve problems involving the addition, subtraction, multiplication, and division of single- and multidigit whole numbers, and involving the addition and subtraction of decimal numbers to tenths and money amounts, using a variety of strategies.</li> </ul> <p><b>Specific Expectations</b></p> <ul style="list-style-type: none"> <li>• add and subtract two-digit numbers, using a variety of mental strategies;</li> <li>• solve problems involving the addition and subtraction of four-digit numbers, using student-generated algorithms and standard algorithms;</li> <li>• add and subtract decimal numbers to tenths, using concrete materials and student-generated algorithms;</li> <li>• add and subtract money amounts by making simulated purchases and providing change for amounts up to \$100, using a variety of tools;</li> <li>• use estimation when solving problems involving the addition, subtraction, and multiplication of whole numbers, to help judge the reasonableness of a solution.</li> </ul>	<p><b>Overall Expectation</b></p> <ul style="list-style-type: none"> <li>• solve problems involving the multiplication and division of multidigit whole numbers, and involving the addition and subtraction of decimal numbers to hundredths, using a variety of strategies.</li> </ul> <p><b>Specific Expectations</b></p> <ul style="list-style-type: none"> <li>• solve problems involving the addition, subtraction, and multiplication of whole numbers, using a variety of mental strategies;</li> <li>• add and subtract decimal numbers to hundredths, including money amounts, using concrete materials, estimation, and algorithms;</li> <li>• use estimation when solving problems involving the addition, subtraction, multiplication, and division of whole numbers, to help judge the reasonableness of a solution.</li> </ul>	<p><b>Overall Expectation</b></p> <ul style="list-style-type: none"> <li>• solve problems involving the multiplication and division of whole numbers, and the addition and subtraction of decimal numbers to thousandths, using a variety of strategies.</li> </ul> <p><b>Specific Expectations</b></p> <ul style="list-style-type: none"> <li>• use a variety of mental strategies to solve addition, subtraction, multiplication, and division problems involving whole numbers;</li> <li>• add and subtract decimal numbers to thousandths, using concrete materials, estimation, algorithms, and calculators;</li> <li>• use estimation when solving problems involving the addition and subtraction of whole numbers and decimals, to help judge the reasonableness of a solution.</li> </ul>

*(The Ontario Curriculum, Grades 1–8, Mathematics, 2005)*

The following sections explain content knowledge related to addition and subtraction concepts in the junior grades, and provide instructional strategies that help students develop an understanding of these operations. Teachers can facilitate this understanding by helping students to:

- solve a variety of problem types;
- relate addition and subtraction;
- model addition and subtraction;
- extend knowledge of basic facts;
- develop a variety of computational strategies;
- develop estimation strategies;
- add and subtract decimal numbers.