

## Numbers Unit – Big Ideas

### **Number represents and describes quantity\***

- Parts of wholes can be represented by equivalent fractions (5)
- Mixed numbers and decimal numbers can be decomposed into parts and wholes (6)
- A negative number is the opposite of a positive number of the same size (7)
- Proportional reasoning helps us make sense of related quantities (8)

### **Developing computational fluency comes from a strong sense of number\***

- Flexibility in working with numbers extends to:
  - operations with larger (multi-digit) numbers (5)
  - operations with smaller (decimal) numbers (6)
- The meaning of addition and subtraction extended to fractions and integers (7)
- The meaning of multiplication and division extended to fractions and integers (8)

## NEW: Math Curricular Competencies

<i>Grade 6 &amp; 7 Curricular Competencies (same for both grades)</i>	
Analyzing a problem	<ul style="list-style-type: none"> <li>• Use multiple strategies to develop, construct, and apply mathematical understanding through problem solving</li> <li>• Estimate the reasonableness of decimal and fraction calculations</li> <li>• Develop and apply mental math strategies to determine decimal and fraction calculations, deepen understanding, and reinforce whole number computational fluency</li> </ul>
Reasoning and proof	<ul style="list-style-type: none"> <li>• Inductively and deductively reason and use logic to explore, make connections, predict, analyze, generalize, and make conclusions</li> </ul>
Communicating	<ul style="list-style-type: none"> <li>• Communicate concretely, pictorially, symbolically, and using spoken and written language to express, describe, explain, represent, clarify, modify, reinforce, apply, defend and extend mathematical ideas</li> </ul>
Connecting	<ul style="list-style-type: none"> <li>• Visualize and describe mathematical concepts</li> <li>• Connect mathematical concepts to each other, and make mathematical connections to the real world</li> </ul>
Representing	<ul style="list-style-type: none"> <li>• Develop mathematical understanding through concrete, pictorial, and symbolic representations</li> <li>• Use technology appropriately to explore and create patterns, examine relationships, test conjectures, solve problems, record, communicate and represent thinking</li> </ul>

## By the end of grade 7

<b>Fractions</b>	<b>I can...</b>
ADRME	Change improper fractions into mixed numbers (and back again)
ADRME	Show that I understand <b>ratio</b> (using solid objects, pictures, and math notation)
ADRME	Show that I understand the relationship between: <ul style="list-style-type: none"> <li>• repeating decimals and fractions (positive values only)</li> <li>• terminating (non-repeating) decimals and fractions (positive values only)</li> </ul>
ADRME	Show that I understand how to add and subtract positive fractions, mixed numbers, with like and unlike denominators, (using solid objects, pictures, and math notation)
ADRME	Compare and order positive fractions, positive decimals (to thousandths) and whole numbers by using: benchmarks, place values, equivalent fractions and/or decimals
<b>Decimals</b>	<b>I can...</b>
ADRME	Show that I understand of place value for numbers greater than one million and less than one thousandth
ADRME	Solve problems involving large numbers, using technology
ADRME	Show that I understand factors and multiples by: <ul style="list-style-type: none"> <li>• Determining multiples and factors of numbers less than 100</li> <li>• Identifying prime and composite numbers</li> <li>• Solving problems involving multiples</li> </ul>
ADRME	List the “divisibility rules) and explain why a number is divisible by 2,3,4,5,6,8,9,10 and why a number cannot be divided by zero.
ADRME	Show that I understand the addition, subtraction, multiplication, and division of decimals to solve problems (using technology as needed)
ADRME	Show that I understand multiplication and division of decimals (1-digit whole multipliers and 1-digit natural number divisors)
ADRME	Show that I understand <b>percent</b> (limited to whole numbers) (using solid objects, pictures, and math notation)
ADRME	Solve problems involving percents from 1% to 100%
<b>Integers</b>	<b>I can...</b>
ADRME	Show that I understand integers using solid objects, pictures and math notation.
ADRME	Show that I understand addition and subtraction of integers using solid objects, pictures and math notation.