Grade 6 - Addition & Subtraction (Whole Numbers & Decimals)

Contents

📋 Developmental Tracking Sheet

What to look for from the end of Grade 5	Diagnostic Thinking Tasks: (sample tasks to uncover students' current understandings)

Looking back:
● **Solving problems** involving addition and subtraction up to 100 000 & decimal hundredths
 	
● **Using tools to model** situations and determine a solution (e.g. base ten, money, bar model)
 	
● **Selecting computational strategies** that make sense in the situation (e.g. counting, overshoot and return, compensation)
 	
● **Use place value** when describing and representing multi-digit numbers in a variety of ways, including with base ten materials
	You added two numbers and the sum was 23 159. What might the numbers have been if:
	  - The two numbers are very close in size
	  - The two numbers are very far apart in size
	  - One of the two numbers is 12 125
	  - One of the two numbers is 22 158.26
	
	Do your best to **show** how each of your pairs of numbers add to 23 159.
	
	Follow-up prompts:
	 - How did you show your thinking?
	 - Are your thinking and calculations clear to someone else?
	 - What could you change or add to make your thinking clearer?
	
	Why this task?
	    ● it is inherently differentiated by allowing students to both choose a set of constraints, and have the freedom to choose their own pair of numbers (addends) within those constraints
	    ● it is easily differentiated further by selecting a different sum to add up to (i.e., 3159 instead of 23 159.)
	    ● allows students to be reacquainted with manipulative materials and routines
	    ● creates an opportunity for the teacher to observe:
	        ○ Do students have a clear understanding of the parts involved in addition? (addends, sum)
	        ○ familiarity with tools and manipulatives - Do they access appropriate tools to solve a problem and/or communicate their thinking? (base ten, number lines, bar models, etc.)
	        ○ students' comfort with a variety of computational strategies - Which do they use? Are they applying an understanding of place value through these strategies? (this will be key to their work with decimals)
	
	Alternate Task
	- explore the Diagnostic Assessments included in the MathUP topics listed below

Next Steps for Learning:
    ● Based on what you saw and heard, what is next for you and your students?
    ● Does a starting point now stand out in the grade-level sample problems or MathUP Connections?	

Resources to Address Grade Level Expectations:

MathUP Connections	Building Fluency Lessons
Note: To ensure the links below work, first sign into MathUP in a separate tab ● Whole Number Operations, Lesson 1 ● Adding and Subtracting Decimal Numbers	MathUP Number Talks: 14, 16, 17, 24, 26, 27, 28, 31, Number Talks: Fractions, Decimals, and Percentages (Parrish and Dominick): ● Number Talks: Addition with Decimals, p. 337 - 348 ● Number Talks: Subtraction with Decimals, p.349 - 367

Sample Problems and Explorations:

You subtract two whole numbers and estimate the difference to be 42 000. What might the numbers be?

You add two decimal thousandths and subtract a third. The result is a bit less than 2. What might the numbers be?

Sumiko ran the 400 m race in 74.5 seconds. Tiana was more accurate and recorded her time as 81.34 seconds. Which student ran the race the fastest? How much faster was she?

The sum of two decimal numbers is 1.632 greater than the difference between them. What might the two decimal numbers be?

If there are a lot of possibilities, give several examples. If not, explain why there are not many possibilities.

A problem is solved by subtracting 1.305 from another decimal number. What real-life problem might this be? Find two different possibilities and solve them.

Models and Tools

Concrete Learning Resources Tools:
- base ten blocks
- grids
- decimal rods
- white boards

Virtual Learning Resources and Tools:
- base ten blocks
- number line
- number pieces

Expectation Cluster:

B2 use knowledge of numbers and operations to solve mathematical problems encountered in everyday life

B2.1 use the properties of operations, and the relationships between operations, to solve problems involving whole numbers, decimal numbers, ‑including those requiring multiple steps or multiple operations

B2.4 represent and solve problems involving the addition and subtraction of whole numbers and decimal numbers, using estimation and algorithms

Resource List of texts referenced in the preparation of these plans, and available in all WRDSB schools.