

What Is the Purpose of the Workbook?

For students

The Workbook supports students in their learning journey with independent or small-group practice opportunities for

- building on their understanding through a variety of questions, tasks, games, and challenges connecting foundational concepts;
- organizing and representing their thinking and understanding; and
- connecting math concepts to their lived experiences.

For teachers

The Workbook helps you support students by

- offering intentional independent and small-group practice ideas, aligned with your curriculum;
- providing additional assessment opportunities and ways to support learning; and
- allowing parents and caregivers an opportunity to see what their child is learning.

Go to [Mathology.ca](https://www.mathology.ca) for comprehensive lesson notes supporting a deep understanding of student thinking and assessment opportunities that help determine the best next steps for your learners.

How To Use the Workbook

After working through lessons with students

- Identify the practice units that correlate with the lessons you've taught.
- Use the Workbook flexibly, as in-class practice (small-group, collaborative, or independent work).
- Discuss the practice tasks and ensure clarity.
- Identify the open-ended tasks and discuss ways for students to represent their understanding.
- Debrief the tasks and ask students to share their strategies.
- Observe students' level of understanding and build on it through additional tasks.

Reaching All Learners (Differentiated Instruction)

Consider the variety of learners in your classroom and how the Workbook can best support them.

Key questions to reflect on include:

- Are there certain questions that I want all students to complete?
- Do some students need accommodations?
- Which students might benefit from small-group conversations before starting tasks?
- How can I encourage the use of manipulatives and models (e.g., Math Mats, Base Ten Blocks)?
- How can students use the Workbook to recognize their strengths and build a math identity (e.g., self-reflection)?

Curriculum Support

Go to www.pearson.com/ca/en/k-12-education/mathology.html for a detailed alignment of this resource with your curriculum.

How Is the Workbook Organized?

Each unit connects the learning across several lessons.

Unit 10 Data Management

What I Know

What are some reasons why people collect data?
Why might you want to collect data from your classmates?

For example: People might collect data to help them make decisions or to help them answer questions, or to help them convince others of something.
I might want to find what time my classmates go to bed on a school night to help convince my mom to let me stay up later.

Checking In

Collecting and Organizing Data

1 For a class project, Grade 5 students at a school in Winnipeg, Manitoba, surveyed students in Grades 2 to 6 at their school. They asked 10 students from each grade this question:

What is your favourite food aroma?
 cotton candy watermelon popcorn brownies other

a) Which sampling technique was used: simple random sampling, stratified random sampling, or systematic random sampling? Explain.

Stratified random sampling was used because the school was divided into grades and the same number of students from each grade were surveyed.

What I Know

- activates prior knowledge of major concepts
- provides pre-assessment of students' understanding and knowledge
- helps you identify students who may need additional support

a) Create a stacked-bar graph to show these data.

6 CONNECTIONS

Why is it important to analyze data before making decisions?

For example: If we don't analyze the data first, we might just do what we want or think, and not consider the preferences of others.

Checking In

- provides opportunities for students to apply their knowledge and understanding of concepts, make connections to math in the real world, reflect and discuss their thinking and strategies, and show what they know

Bringing It Together

13 GAME: Hit the Target!

Use a deck of cards with the face cards and jokers removed.
Take turns taking 4 cards from the deck and then rolling a number cube. The number rolled determines the target.
Use the cards to make 2 numbers whose product is in the target range.

Number	Target
1	Less than 1000
2	1001 to 2000
3	2001 to 3000
4	3001 to 4000
5	4001 to 5000
6	More than 5000

If the product lies in the range, the player gets 1 point.
The first player to 10 points wins.

14 GAME: What's Left?

Use a deck of cards with the face cards and jokers removed.
Sort the cards into 2 piles, even and odd.
Take turns taking 3 cards from the pile of odd numbers to make a 3-digit number.
Take one card each from the pile of even numbers to be the divisor.
Divide your 3-digit number by the divisor.
The remainder is your score for the round.
The player with the greater score after 5 rounds wins.

What I Learned

Write at least one new thing you learned and are proud of from working through this unit.
For example: I am visualizing multiplying and division better. Also, I am getting better with some of my facts, like my 7 and 8 times tables.

Connections prompts

- enable students to create their own notes on connections made visible in the moment

Bringing It Together

- allows students to work together to discuss thinking and strategies
- helps students show what they know
- presents many open-ended tasks or games

What I Learned

- allows students to reflect on what they have learned and record their understanding
- prompts students to focus on the major understandings and concepts
- provides a snapshot of students' learning

Connecting and Reflecting: Multiplication, Division, and Equality

You have been given the task of upgrading your bedroom. What will you do to your room?
Use what you know about multiplication, division, measurement, and equality to describe everything you need to know before starting the job.

For example:

I am going to paint the walls of my bedroom.

1. Find the total length of the walls in metres (the perimeter of my room).
2. Multiply that number by the height of my room to get the area of the walls in square metres.
3. Measure to find the total area of the doors and window.
4. Subtract this from the area of the walls to get the area to be painted.
5. To do 2 coats of paint, multiply the area to be painted by 2.
6. Go to the store and decide which paint to use.
7. Divide the area to be covered by the area 1 can of paint will cover (shown on can), then round up to get how many cans of paint to buy.
8. Consider other materials that may be needed: brush, roller, paint tray, step ladder, and drop cloth.

Connecting and Reflecting

- connects the learning across a practice cluster with students' lived experiences

Sample student answers are included throughout the resource.

Contents

Patterns and Place Value	1
Unit 1: Patterning,	2
Unit 2: Number Relationships and Place Value	8
Unit 3: Fluency with Addition and Subtraction	14
Connecting and Reflecting	20
Shape and Space	21
Unit 4: 2-D Shapes and 3-D Solids	22
Unit 5: Grids and Transformations	28
Unit 6: Coding	35
Connecting and Reflecting	40
Part-Whole Relationships	41
Unit 7: Fractions and Decimals	42
Unit 8: Time	48
Unit 9: Operations with Fractions and Decimals	52
Connecting and Reflecting	58
Data and Financial Literacy	59
Unit 10: Data Management	60
Unit 11: Probability	66
Unit 12: Financial Literacy	72
Connecting and Reflecting	78
Multiplication, Division, and Equality	79
Unit 13: Multiplication and Division	80
Unit 14: Length, Perimeter, and Area	86
Unit 15: Mass, Capacity, and Volume	93
Unit 16: Variables and Equations	99
Connecting and Reflecting	105
Reproducibles	106
Word Wall	110

Bringing It Together

8



GAME: Target 10 000!

Each of you roll 4 number cubes labelled 1 to 6 to make a 4-digit start number.

Roll up to 4 cubes again to make a number you add to or subtract from your start number.

Continue to roll cubes and add or subtract.

The player closer to 10 000 after 5 turns wins.

Play again!

Target 100 000!

Roll 5 cubes to make a 5-digit start number.

Take turns to roll up to 5 cubes.

The player closer to 100 000 after turns wins.

Target 1000!

Roll 5 cubes to make a 5-digit start number.

Take turns to roll up to 5 cubes.

The player closer to 1000 after turns wins.



I now have 10 098. Next, I will roll 2 number cubes to make a 2-digit number, then subtract.



What I Learned

What strategies or models do you use to help you add or subtract large numbers? Use an example to explain.

Bringing It Together

Encourage students to record their work in their math journal.

8



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Play again! Target 100 000!

Roll 5 cubes to make a 5-digit start number.
Take turns to roll up to 5 cubes.
The player closer to 100 000 after turns wins.

Target 1000!

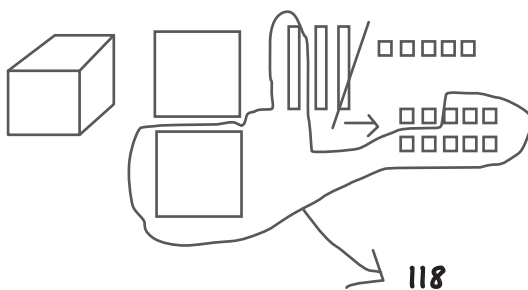
Roll 5 cubes to make a 5-digit start number.
Take turns to roll up to 5 cubes.
The player closer to 1000 after turns wins.

What I Learned

What strategies or models do you use to help you add or subtract large numbers?
Use an example to explain.

For example: When I have to trade and regroup, I find that **Base Ten Blocks** really help. Then, I use the steps that I took to help me write the standard algorithm. If I don't have blocks available, I often use the "think addition" strategy: $118 + ? = 1235$.

$$1235 - 118 = 1117$$



$$\begin{array}{r} 21 \\ 1235 \\ - 118 \\ \hline 1117 \end{array}$$

Think addition:

$$\begin{aligned} 118 + ? &= 1235 \\ 118 + 82 &= 200 \\ 200 + 1000 &= 1200 \\ 1200 + 35 &= 1235 \\ \text{Then } 82 + 1000 + 35 &= 1117 \end{aligned}$$