MATH

GRADE 5

COMPLETE GRADE 5 MATH CURRICULUM

ON EDITION

DYNAMIC MATH

Dear Parents,

Helping kids understand and apply mathematics knowledge and skills is a collective responsibility of parents, teachers, and principals.

Students need to learn mathematics in a way that will serve them throughout their lives. Understanding mathematics can provide our students with many job and career opportunities.

This is why students need to know why mathematics works the way it does, how to use it with confidence and competence when solving problems.

Understanding mathematics enables us to:

- Solve problems, make sound decisions and perform calculations with ease
- Explain how we solved a problem and why we made a particular decision
- Understand patterns and trends so that we can make predictions
- Understand Financial Literacy to manage time and money
- Handle everyday situations that involve numbers and feel confident

Before your child can learn mathematics, he or she needs to believe in his or her ability to do so. That's where you come in!

Parents, you are your child's first role model for learning. When you engage with your child in a supportive, relaxed atmosphere, your child will enjoy exploring the world of mathematics.

Dynamic Math is committed to helping parents and students. We understand that not everyone learns the same way, and not everyone feels the same about math. This is why we are continually working to create math resources that help students of all abilities, while supporting the many learning styles and varying levels of enthusiasm towards math.

From our clear concise instructions and straightforward guided examples to our additional practice material and tests, there's something to suit everyone. Combined with our video tutorials, students will be able to get a tutor-like experience from anywhere and at a fraction of the cost of standard tutoring or after-school help programs.

DYNAMIC MATH

ONTARIO GRADE 5 MATH
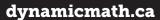
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To ensure we are bringing the best product to market, Dynamic Math recruited some Ontario Math teachers/instructors currently teaching math in various school districts across the province. Here are some of their comments after completing their reviews.

Elyse L, B.Ed, B.A. – Teacher - York Catholic District School Board

"The Dynamic Math books cover the contents of the Ontario Curriculum in a clear and concise manner. The straightforward examples provide ample opportunities for learning through differentiated methods. The books definitely help to consolidate learning".

"Dynamic math not only covers the updated Ontario curriculum but also provides ample opportunities for student practice and growth."

Melissa A. Manzo - Professor and Coordinator - George Brown College

"The coding chapter in this workbook does an excellent job explaining the material and making connections to everyday life, as required by the new Ontario curriculum".

Natalie, Teacher - York Catholic District School Board

"Dynamic Math has proven to provide a comprehensive overview of all curriculum expectations and big ideas required for a student to be successful in the intermediate grades across Ontario."

"I believe that the resources will provide elementary school teachers a concrete means to supplement lesson planning. Dynamic Math offers a wide variety of meaningful mathematical applications, an abundance of practice problems, and fantastic coding tutorials and exercises."

Keli J, Teacher - Pickering College

The Dynamic Math books are detailed and provide step by step instructions. Each chapter has a myriad of examples and a great variety of questions, incorporating all the aspects of the new curriculum. The books are very accessible for students due to the clear and concise layout and flow of each unit.

Colin Garnham – Professor of Mathematics – George Brown College

As a teacher in a math upgrading program, all students would benefit from the clear and concise resources developed by Dynamic Math. Using these resources, my adult student's numeracy skills would be superior, math would come more easily to them and they would once again love math!

Table of Contents
Ontario Grade 5 Mathematics

Ontario Math Curriculum

Old vs New Comparison

Content and Structure

In the 2005 curriculum, students found it difficult to connect learning from year to year. There are different expectations for English-language and French-language learners.	In the 2020 curriculum, there will be clear connections to show how math skills build from year to year. There will be one curriculum in both English and French – the same learning experience for all Ontario students.

Real-life Connections

In the 2005 curriculum, there are outdated examples for students.	In the 2020 curriculum, there will be relevant, real-life examples that help connect math to everyday life, such as developing infographics, creating a budget, e-transfers and learning to code.

Number Facts

In the 2005 curriculum, students are not required to memorize key number facts.	In the 2020 curriculum, there will be more focus on fundamental math concepts, such as learning multiplication facts of 0 × 0 to 12 × 12, to enhance problem solving and mental math.

Spatial Sense

In the 2005 curriculum, younger grades have limited learning about spatial reasoning, for example making connections between measurement and geometry.	In the 2020 curriculum, there will be use of spatial relationships and shapes to help young children prepare to learn later math. Across all grades, students will understand basic number concepts, patterning and geometric concepts.

Fractions

In the 2005 curriculum, fraction concepts are confusing in early grades.	In the 2020 curriculum, there will be concepts about equal sharing to make fractions easier to understand, starting in Grade 1.

Mathematics confidence

In the 2005 curriculum, building mathematics confidence is implied.	In the 2020 curriculum, there will be tools and strategies that are part of the curriculum to help students develop confidence, cope with challenges and think critically.

Coding

In the 2005 curriculum, there are no explicit references to coding.	In the 2020 curriculum, starting in Grade 1, there will be coding skills to improve problem solving and develop fluency with technology.

Financial Literacy

In the 2005 curriculum, financial literacy concepts are limited to basic understanding of money and coins.	In the 2020 curriculum, there will be mandatory financial literacy learning in Grades 1 to 8, including understanding the value and use of money over time, how to manage financial well-being and the value of budgeting.

INTRODUCTION

In Grade 5 mathematics**,** students build on what they have already learned and are introduced to several new concepts. While working through the different topics, it is important that students work on their **Social and Emotional Learning**, using applications and activities from each content area.

<u>CONTENT</u>

The mathematical content in Grade 5 builds on what was learned in Grade 4. In addition to new topics, a review of material already learned is covered before going deeper into the topics.

Number and Financial Literacy
Topics include working with numbers up to a magnitude of 100 000. Included are number sense and operations with both whole numbers and rationals. These areas are applied in a section on Financial Literacy that covers the use of money.

Patterns, Variables, Equations, and Inequalities
Students will work with patterns in tables and charts. Variables, equations, and inequalities are introduced, and a problem-solving approach is used.

Measurement
This chapter includes working with perimeter and area, measuring angles and triangles, and volume and capacity.

Geometric and Spatial Sense
The area deals with properties of two-dimensional shapes and three-dimensional objects. This area also introduces the plotting of points in the first quadrant and transformations of 2-dimensional shapes.

Data and Probability
This chapter provides an introduction to samples and populations and includes ways of displaying and interpreting data. The concept of probability includes applications in business and everyday life through the use of experimental and theoretical probability.

The section covering each content area begins with a description of the concept, followed by examples with clear step-by-step solutions. Students are then provided with questions that range from easy to difficult. Each chapter contains a set of extra practice questions on key concepts from each section in the chapter. Each chapter ends with a chapter test. Answers to all exercises and chapter tests are provided.

SOCIAL EMOTIONAL LEARNING

Social and emotional skills are important when working with mathematics. If you use these skills, it will help you think about how to solve problems. These skills are enhanced by developing problem-solving methods and selecting the best tools and ways to solve a problem.

Chapter 10 goes into more details on these skills and includes examples with answers or explanations. Each set of examples is followed by a set of exercises.

Communicating

Communicating is the process of expressing mathematical ideas and understanding. This is done by using numbers, symbols, pictures, graphs, diagrams, and words. It is important that you are able to communicate to express, describe, explain, and apply mathematical ideas in several different ways.

Representing

Representing involves different ways of showing mathematical ideas. These include drawings, physical models, equations, charts, and graphs. Being able to represent mathematical ideas in different ways and making connections among them to solve problems are important skills.

Connecting and Relating

When you **relate** mathematical concepts to each other, it is called **connecting.** In doing this, you should also be able to make mathematical connections to the real world.

Reasoning and Proving

Reasoning and proving involve an understanding the relationships that apply to numbers, shapes, or operations. Steps involved in this process include defining the relationship, analyzing why it is true, and determining if it can be applied to numbers, shapes, or operations.

CODING

Learning how computers follow instructions is an important part of **coding** in mathematics. It involves writing a set of instructions that a computer understands. Chapter 11 will help to strengthen the coding knowledge that students already have. It will also introduce the idea of conditional statements that can change the outcome based on whether a condition is met.

CHAPTER 1
NUMBER CONCEPTS

1.1   Representing and Describing Whole Numbers

1.2   Comparing and Ordering Numbers

1.3   Rounding and Estimation

If you need additional help, there are more resources available at www.dynamicmath.ca.

$$4617 = 4 \times 1000 + 6 \times 100 + 1 \times 10 + 7 \times 1$$

1.1   Representing and Describing Whole Numbers

Word Numbers and Numerals

When we express an amount or quantity using words, we call it a **word number**. Examples include twenty-five and one hundred thirty-two. When we use symbols to represent a quantity, we call it a **numeral**; for example, 25 and 132.

Examples: **Two thousand one hundred fifty-three   OR   2153**

$$\uparrow \qquad\qquad\qquad\qquad\qquad\qquad \uparrow$$

$$\textbf{WORD NUMBER} \qquad\qquad\qquad \textbf{NUMERAL}$$

Writing Word Numbers

When we write a word number to represent a whole number numeral, we <u>don't</u> use the word "and." This word is reserved later for decimals.

Examples:

1. 138 is written as one hundred thirty-eight **NOT** one hundred <u>and</u> thirty-eight.

2. 4530 is written as four thousand five hundred thirty **NOT** four thousand five hundred <u>and</u> thirty.

Numerals and Digits

Numerals are made up of **digits**. For example, the numeral 356 is made up of the digits **3**, **5**, and **6**. Each one of these digits represents a certain value.

Example: 5368 is made up of the digits **5, 3, 6,** and **8**, each with different values.

The **value** of each digit depends on its location or **place** in the numeral. For example, in the numeral 235, the digit 2 has a value of 200 because it is in the hundreds place, the digit 3 has a value of 30 because it is in the tens place, and the digit 5 has a value of 5 because it is in the ones place.

Using Proper Spacing Instead of Commas in Numerals

In Canada, we do not use commas with whole numbers. When a numeral has more than 4 digits, we leave a <u>space</u> instead of a comma between every three digits, working from right to left. We do **not** use a comma or leave a space if there are only four digits.

Examples:

1. Use 35 172 instead of 35,172.   Leave a space with three digits to the right.
2. Use 53 873 instead of 53,873.   Leave a space with three digits to the right.
3. Use 4215 instead of 4,215.   Since there are only 4 digits, do not leave a space.

Examples with Solutions

1. Write a numeral for each of the following word numbers.

   a. two hundred fifty-three   253

   b. one hundred twenty   120

   c. three thousand four hundred seventy 3470

   d. six thousand fifty-seven   6057

   e. five thousand six hundred two   5602

   f. fifty thousand three hundred six   50 306

2. Write a word number for each of the following numerals.

   a. 509   five hundred nine

   b. 3238   three thousand two hundred thirty-eight

   c. 4044   four thousand forty-four

   d. 6305   six thousand three hundred five

   e. 8230   eight thousand two hundred thirty

   f. 41 206   forty-one thousand two hundred six

3. Write as many different numerals as possible from the following digits.

   7, 3
                                           Possible numerals with one digit are 3 and 7.
                                           Possible numerals with two digits are 37 and 73.
                                           All possible numerals are: 3, 7, 37, 73.

4. Use proper spacing and delete commas to rewrite each numeral shown incorrectly on the left.

<u>Incorrectly Written Numeral</u>   <u>Correct Version</u>

   a. 4,678   4678 (remove comma, no space)

   b. 7 349   7349 (remove space)

   c. 10,348   10 348 (remove comma, insert space)

   d. 72,431   72 431(remove comma, insert space)

   e. 45,689   45 689 (remove comma, insert space)

Place Value

When we write numerals from 0 to 9, they involve only the **"ones" digits**.

Examples:

   1. 9 is equal to nine ones.
   2. 2 is equal to two ones.

When we write numerals from 10 to 99, they involve both **"tens"** and **"ones" digits**.

Examples:

   1. 16 is equal to 1 ten and 6 ones.
   2. 68 is equal to 6 tens and 8 ones.

When we write numerals between 100 and 999, they involve **hundreds, tens,** and **ones digits**.

Example: 962 is equal to 9 hundreds, 6 tens, and 2 ones.

Numerals between 1000 and 99 999 can include the **"ten thousands, thousands, hundreds, tens,** and **ones" digits**. The number 23 417 is shown below with the place value for each digit.

2	3	4	1	7
↑	↑	↑	↑	↑
ten thousands	thousands	hundreds	tens	ones

So 23 417 has 2 ten thousands, 3 thousands, 4 hundreds, 1 ten, and 7 ones
                (twenty-three thousand   four hundred   seventeen)
                           ↑   ↑
                Combine the thousands.   **Combine the tens and ones.**

Examples with Solutions

1. What is the value of the underlined digit in each of the following numerals?

    a. 4<u>5</u>3   The digit 5 is in the tens place, so it is equal to $5 \times 10 = 50$.

    b. 68<u>2</u>   The digit 2 is in the ones place, so it is equal to $2 \times 1 = 2$.

    c. <u>5</u>09   The digit 5 is in the hundreds place, so it is equal to $5 \times 100 = 500$.

    d. 2<u>3</u>45   The digit 3 is in the hundreds place, so it is equal to $3 \times 100 = 300$.

    e. <u>5</u>230   The digit 5 is in the thousands place, so it is equal to $5 \times 1000 = 5000$.

    f. 5<u>4</u> 895   The digit 4 is in the thousands place, so it is equal to $4 \times 1000 = 4000$.

    g. <u>2</u>4 305   The digit 2 is in the ten thousands place, so it is equal to
                                  $2 \times 10\ 000 = 20\ 000$.

2. Write each numeral described below.

    a. I have 4 hundreds,5 tens, and 3 ones.   453

    b. I have 2 thousands, 3 hundreds and 7 ones.   2307

    c. I have 7 thousands,9 hundreds, and 8 ones.   7908

    d. I have 6 ten thousands and 2 hundreds.   60 200

    e. I have 3 ten thousands, 1 thousand, and 5 tens.   31 050

    f. I have 6 thousands and 3 ones.   6003

    g. I have 7 thousands and 3 hundreds.   7300

3. Write each numeral as a word number.

    a. 25 040   twenty-five thousand forty

    b. 62 305   sixty-two thousand three hundred five

    c. 70 027   seventy thousand twenty-seven

    d. 85 808   eighty-five thousand eight hundred eight

4. Write each word number as a numeral.

    a. twenty-five thousand two hundred nine   25 209

    b. twelve thousand six hundred forty-eight   12 648

    c. thirty-three thousand three hundred ten   33 310

    d. sixty thousand thirty-five   60 035

Expressing a Numeral using Expanded Form

We can show a numeral as a sum of the values of its digits. This is called writing the numeral in **expanded form**. For example, 526 is equal to $500 + 20 + 6$. Keep in mind the place values of the digits.

Examples:

1. $34 = (3 \times 10) + (4 \times 1) = 30 + 4$
2. $793 = (7 \times 100) + (9 \times 10) + (3 \times 1) = 700 + 90 + 3$
3. $8408 = (8 \times 1000) + (4 \times 100) + (0 \times 10) + (8 \times 1) = 8000 + 400 + 8$

Examples with Solutions

1. Write each numeral in expanded form.

   a. 5642

   $5642 = (5 \times 1000) + (6 \times 100) + (4 \times 10) + (2 \times 1)$

   b. 4059

   $4059 = (4 \times 1000) + (5 \times 10) + (9 \times 1)$

   c. 24 040

   $24\ 040 = (2 \times 10\ 000) + (4 \times 1000) + (4 \times 10)$

2. Write the numeral that has 5 thousands, 2 hundreds, 3 tens, and 0 ones.

   $\underline{5} \times 1000 + \underline{2} \times 100 + \underline{3} \times 10 + \underline{0} \times 1$
   $= 5000 + 200 + 30 + 0 = 5230$

3. Write the word number for the numeral **7215**.

   The numeral has 7 thousands, 2 hundreds, 1 ten, and 5 ones.

   The word number is **seven thousand two hundred fifteen**.

4. Write 30 574 in words.

   The numeral has 3 ten thousands, 5 hundreds, 7 tens, and 4 ones.

   The word number is **thirty thousand five hundred seventy-four**.

5. Write three thousand five hundred twenty as a numeral.

   There are 3 thousands, 5 hundreds, and 2 tens.

   The numeral is **30 520**.

6. In the numeral 70 218,

    a.   What is the value of the 2?

The 2 is in the hundreds column, so its value is $2 \times 100 = 200$.

    b.   What is the value of the 1?

The one is in the tens column, so its value is $1 \times 10 = 10$.

    c. What is the value of the 7?

The 7 is in the ten thousands column, so its value is $7 \times 10\ 000 = 70\ 000$.

Exercises 1.1

1. Write a numeral for each of the following word numbers.

    a. one hundred seventy

    b. five hundred nine

    c. four hundred twenty-four

    d. six thousand fifteen

    e. two thousand thirty-six

    f. twenty-two thousand ten

    g. thirty thousand two hundred one

    h. two thousand six hundred

2. Write a word number for each of the following numerals.

    a. 345

    b. 304

    c. 1250

    d. 2253

    e. 32 753

    f. 70 150

    g. 62 344

    h. 33 303

3. Write as many different numerals as possible from the following digits.

    a. 5, 2

    b. 1, 7

4. Rewrite each numeral using proper spacing and removing commas.

    a. 4 790

                                                                 b. 7,666

    c. 5,555

                                                                 d. 12,456

    e. 30,148

                                                                 f. 22,088

    g. 47,031

                                                                 h. 30,022

5. Fill in each blank with the correct digit in the table below.

	ten thousands	thousands	hundreds	tens	ones
a. 405					
b. 2210					
c. 6070					
d. 5055					
e. 20 245					
f. 31 042					
g. 78 103					

6. Write each numeral using expanded notation.

    a. 4522

                                                                   b. 3022

    c. 40 250

                                                                 d. 12 090

    e. 38 0 80

                                                                 f. 12 790

7. Write each numeral described below.

    a. I have 3 thousands, 2 tens, and 7 ones.   b. I have 6 hundreds and 9 ones.

c. I have 2 ten thousands, 3 hundreds, 5   d. I have 8 thousands, 3 tens, and 5 ones.
   tens, and 2 ones.

8. What is the value of the digit underlined in each numeral?

   a. 5<u>6</u>71   b. 60<u>9</u>2

   c. 6<u>3</u> 697   d. <u>5</u>4 207

9. Draw an arrow to match the numeral on the left with the correct word number on the right.
   The first one is done for you.

   a. 25 430   nine hundred eight thousand eight

   b. 50 209   one hundred twenty-five thousand four hundred thirty

   c. 30 025   four hundred ten thousand ten

   d. 98 008   seven hundred fifty thousand two hundred nine

   e. 41 010   three hundred thousand twenty-five

   f. 12 043   three hundred thousand two hundred fifty

   g. 67 250   one hundred twenty-five thousand forty-three

Exciting Extras   **WHAT NUMBER AM I?**

10. I have 3 thousands, 2 hundreds, 0 tens,
    and 2 ones.

11. I have 2 hundreds, three times as many
    tens as hundreds, and half as many ones
    as hundreds.

12. I have 15 ones and 9 tens.

13. I have 30 tens and 2 ones.

14. I have 14 hundreds, 6 tens,
    and 18 ones.

15. I have twice as many thousands as tens,
     twice as many tens as ones,
     and 2 less than 4 ones.

16. I have 6 thousands, half as many hundreds
     as thousands, and the same number of
     tens and ones as hundreds.

17. I have the same number of thousands,
     hundreds, tens, and ones. The sum of my
     digits is 28.

18. List all of the 3-digit numerals that can be made from the digits 3, 6, and 9.

19. List all of the numerals containing one, two, or three digits that can be made from the
     digits 5, 2, and 3.

CHAPTER 11
CODING

Coding at the Grade 5 Level

This chapter will help strengthen the coding knowledge you already have and will introduce new concepts that will teach you how to use ***conditional statements*** to change the outcome based on whether a condition is met. We will then explore how these conditional statements can be nested to produce different outcomes.

We will be relying on your knowledge of the content in previous chapters. You should complete those chapters before doing this chapter on coding. We will be exploring coding examples that require your understanding of the following topics:

- Geometry of squares, rectangles, triangles, and shapes created from the combination of these shapes

- Classification of angles, such as right, acute, obtuse, and reflex.

- Compass directions (north, east, south, west), and translations on a grid

- Parallel and perpendicular lines

- Inequalities (greater than ">" and less than "<")

The best way for students to understand how coding works is for them to write some code and see the outcome.

This chapter provides explanations, examples, and practice questions that do not require the use of a computer or other technology. It also includes references to some optional online resources and tools that you can use to practice writing your own code using a free coding platform. Internet access will be needed to participate in the optional online part of this chapter.

The free coding platform that is used is called *Scratch*. This program makes use of coding blocks that you can drag and drop to create your own code and execute it on the screen. We use screenshots of these coding blocks in this chapter.

It is okay if access to the Internet is not possible, as all the topics are covered directly in this book. You will probably enjoy this unit more if you are able to create your own code and test it online.

Scratch is part of the MIT Media Lab and is free to use. (https://scratch.mit.edu)

11.1   The Structure of Coding

Have you ever played a game where one person is blindfolded and the other person gives them instructions to help them move through a maze or obstacle course? The person giving the instructions must give very specific instructions so that the blindfolded person doesn't run into a wall or trip over something. This is exactly what we are doing when we are coding.

Coding is writing a set of instructions that a computer can understand so that the computer can complete a specific task. If you want a computer to do something, like move a character through a maze, then you need to give it a set of instructions that it can understand and follow. These instructions make up the **code**. When a computer follows these instructions, it is **executing the code**.

Let's think about the instructions we would give to help a blindfolded person move through an obstacle course. We would probably give instructions like the following:

1. Move two steps forward.
2. Turn 90 degrees to your right.
3. Move three steps forward.

These instructions are in sequence, meaning one instruction follows another. In coding, we call these instructions **sequential events**.

If we wanted the blindfolded person to jump over a rope, our instructions would be to jump and move forward at the same time. In coding, instructions that happen at the same time are called **concurrent events**.

Exercises 11.1

1. Try the blind fold game. Find a partner. One of you will be blindfolded and the other one will direct them through a maze or obstacle course. How did it go? What were some of the challenges? What successes do you have?

ANSWERS TO

EXERCISES AND

UNIT TESTS

CHAPTER 1

Exercises 1.1 (page 7)
1. a) 170 **b)** 509 **c)** 424 **d)** 6015 **e)** 2036
f) 22 010 **g)** 30 201 **h)** 2600
2. a) three hundred forty-five
b) three hundred four
c) one thousand two hundred fifty
d) two thousand two hundred fifty-three
e) thirty-two thousand seven hundred fifty-three
f) seventy thousand one hundred fifty
g) sixty-two three hundred forty-four
h) thirty-three thousand three hundred three **3.**
a) 2, 5, 25, 52 **b)** 1, 7, 17, 71
4. a) 4790 **b)** 7666 **c)** 5555 **d)** 12 456
e) 30 148 **f)** 22 088 **g)** 47 031 **h)** 30 022
5. a) 0 0 4 0 5 **b)** 0 2 2 1 0 **c)** 0 6 0 7 0
d) 0 5 0 5 5 **e)** 2 0 2 4 5 **f)** 3 1 0 4 2
g) 7 8 1 0 3
6. a) $4 \times 1000 + 5 \times 100 + 2 \times 10 + 2 \times 1$
b) $3 \times 1000 + 2 \times 10 + 2 \times 1$
c) $4 \times 10\ 000 + 2 \times 100 + 5 \times 10$
d) $1 \times 10\ 000 + 2 \times 1000 + 9 \times 10$
e) $3 \times 10\ 000 + 8 \times 1000 + 8 \times 10$
f) $1 \times 10\ 000 + 2 \times 1000 + 7 \times 100 + 9 \times 10$
7. a) 3027 **b)** 609 **c)** 20 352 **d)** 8035
8. a) 600 **b)** 90 **c)** 3000 **d)** 50 000
9.

a. 25 430		Ninety-eight thousand eight
b. 75 209		twenty-five thousand four hundred thirty
c. 30 025		Forty-one thousand ten
d. 98 008		seventy-five thousand two hundred nine
e. 41 010		thirty thousand twenty-five
f. 12 043		sixty-seven thousand two hundred fifty
g. 67 250		Twelve thousand forty-three

10. 3202 **11.** 261 **12.** 105 **13.** 302 **14.** 1478
15. 8042 **16.** 6333 **17.** 7777
18. 369, 396, 639, 693, 936, 963 **19.** 2, 3, 5, 23, 32, 25, 52, 35, 53, 523, 532, 253, 235, 352, 325

Exercises 1.2 (page 13)
1. a) 520 **b)** 31 002 **c)** 11 018 **d)** 19 911

2. a) 499 **b)** 3028 **c)** 13 389 **d)** 19 299
3. a) 1610, 1605, 1599, 1598
b) 43 100, 43 090, 43 033, 43 017
4. a) 158, 159, 162, 200, 201
b) 11 009, 11 029, 11 034, 11 040
5. 217, 271, 127, 172, 721, 712 **6.** 7, 8, 9

Exercises 1.3 (page 17)
1. a) 60 **b)** 90 **c)** 200
d) 12 200 **e)** 19 000 **f)** 2540 **g)** 72 000
h) 1660 **i)** 90 900 **j)** 91 920 **k)** 65 000
2. a) 30×40; 1200 **b)** 100×300; 30 000
c) 50×100; 5000 **d)** 300×300; 90 000
e) 1000×100; 100 000 **3.** $300 + 300 + 600$; 1200 **4.** $500 + 600 + 500 + 600$; 2200 km
5. $40 + 60 + 70 + 110$; 280 tickets
6. $300 + 500 + 200 + 500$; 1500 cards
7. $70 + 70 + 40 + 70 + 90 + 90 + 90 + 60$; 580 students **8.** 15 675, 15 676, 15 677, 15 678, 15 679 **9.** 1, 2, 3, 4 **10.** Round 21 months down to 20 and round the number of days in each month to 30. $30 \times 20 = 600$
11. a) 35, 36, 37, 38, 39 40, 41, 42, 43, 44
b) 8550, 8551, 8552, 8553, 8554, 8555
12. a) 9842 **b)** 2489

Extra Practice – Chapter 1 (page 21)
1. a) 230 **b)** 702 **c)** 639 **d)** 4012 **e)** 20 076
f) 58 003 **2. a)** six hundred fifteen **b)** seven hundred seven **c)** four thousand nine hundred eighty **d)** four thousand seventy-eight
e) thirty-two thousand forty-four
f) eighty thousand five **3. a)** 5, 6, 56, 65
b) 1, 2, 7, 12, 17, 21, 71, 27, 72, 127, 172, 217, 271, 712, 721 **4. a)** 25 066 **b)** 4550
c) 72 003 **d)** 43 005 **5. a)** 7 **b)** 60 000 **c)** 50
d) 2000 **6. a)** $(4 \times 1000) + (5 \times 10) + (7 \times 1)$
b) $(2 \times 10\ 000) + (3 \times 1000) + (6 \times 100) + (4 \times 10) + (2 \times 1)$ **c)** $(1 \times 10\ 000) + (5 \times 1000) + (3 \times 100) + (9 \times 1)$ **d)** $(2 \times 10\ 000) + (6 \times 1000) + (1 \times 100) + (7 \times 10) + (4 \times 1)$
7. a) 2007 **b)** 905 **c)** 50 802 **d)** 4016
e) 2912 **f)** 32 315 **8.** 51 010 **9.** 35 090
10. a) 4630 **b)** 4600 **c)** 5000 **d)** 37 260
e) 37 300 **f)** 37 000 **g)** 40 000 **h)** 60 010
11. a) 40×70; 2800 **b)** 200×300; 60 000

Dynamic Math Videos

The Dynamic Math Program supports the teacher to confidently teach their students with:

- a curriculum aligned **Math book**
- **online teacher resources** such as worksheets and extra tests with answer keys
- a **digital flipbook**
- **a library of videos** to help the student in their math journey.

Our program is designed to have the videos support our Math books which are clear, concise and 100% aligned to the provincial curriculum.

Many schools purchase class sets of our Math books and licenses to provide access to the videos. The videos are designed to help the student get 'unstuck' when they are doing their homework. Each video matches the related section in the Math book so that it is easy for the student to find.

Through the licensing process, access to all available grades is offered to each subscriber, allowing students to go back to previous years to review and enhance their understanding or work ahead for advanced learning.

The video program is not designed for each student to watch all available videos for their grade level. Some students may only need to watch some videos throughout the year as they already have a strong grasp of the math concepts being taught in the classroom. Students can do this at home for homework and will not fall behind as they have some extra guidance.

This combination of book and video instruction improves learning outcomes and makes students more confident.

In summary, please consider the following:

Video Benefits for you and your students

- They will help support you in teaching Math to your students.
- The videos will help your students to reinforce what you taught them in the classroom.
- They will be more confident when doing their homework.
- They will equip parents to help the student at home.
- They will dramatically increase the success of your students to learn math.

At a Glance

- Videos available for Grades 4-10, 50-80 Videos per grade, 2 to 7 minutes in length
- The videos match the chapters and units in our Math books and help instruct students learn how to complete the questions in the books.
- Videos are 100% aligned to the provincial curriculum.

DYNAMIC CLASSROOM MATH PROGRAM

The Dynamic Classroom Math book series provides students with curriculum-based resources written by Canadian Math teachers. Our complete series of Math books will take students step by step through the entire provincial curriculum, providing clear instruction, guided examples, and lots of practice questions. All of our Dynamic Math books are fully supported with additional online resources available at **www.dynamicmath.ca**.

BOOKS

The Dynamic Classroom Math books are 100% aligned to the mathematics curriculum for each province. Our Math books include:

- Clear and concise instructions that explain each topic and how to approach the questions
- Step-by-step guided examples that show students how to answer questions
- Practice questions that range from easy to advanced
- Chapter tests to help assess students' knowledge and understanding
- An answer key for all exercises and tests

VIDEO

Dynamic Classroom has a growing library of Math video lessons that will help your child with over-the-shoulder instruction. Each video aligns with a specific section in our Math book for that grade. Visit our website to access a free trial and for more information about subscriptions.

EXTRA ONLINE CONTENT

In an effort to help teachers in the classroom and equip students to enhance learning, we offer additional online content. Visit our website for extra resources and the latest updates.

OUR MISSION

We work to create clear, concise, and straightforward educational resources for teachers and parents to teach confidently and effectively, and to empower students to achieve learning goals in the classroom and at home.

Dynamic MATH