



## Course Outline: Grade 3 Mathematics

**Course Name:** Grade 3 Mathematics

**Course Code:** MAT3

**Credit Value:** None. Credits are not issued at the elementary level.

**Prerequisite:** None

**Curriculum Policy Document:** [The Ontario Curriculum Grades 1-8: Mathematics, 2005 \(revised\)](#)

**Course Developer:** Virtual Elementary School

**Department:** Primary

**Development Date:** 2019

### Course Description

This course builds on the grade 2 curriculum to further develop students' understanding of fundamental mathematical concepts by exploring topics related to number sense and numeration, measurement, geometry and spatial sense, patterning and algebra, and data management and probability. Students will work with numbers up to 1000, represent money amounts, continue investigating fractions, and build on addition, subtraction, multiplication, and division skills. Through investigations, students measure distance, perimeter, mass, and capacity using increasing formal units of measurement, identify temperature benchmarks, and develop a further understanding of time. Students begin exploring angles, quadrilaterals, and congruent shapes, continue working with two- and three-dimensional shapes, describe movement, and recognize transformations. Students will continue creating and extending patterns and begin representing geometric patterns in various ways, determine the missing numbers in equations, and investigate the properties of zero and one in multiplication. Students will collect, organize, read, and display data in various types of graphs, establish an understanding of mode, and predict the frequency of an outcome. Throughout the course, students reinforce the mathematical processes of problem-solving, reasoning and proving, reflecting, selecting tools and computational strategies, connecting, representing, and communicating at a developing level.

Through investigation of real-life problems, students develop a strong foundation of mathematical knowledge and skills. Students apply mathematical processes and build transferrable critical-thinking skills in varied teaching and consolidation activities that appeal to diverse learning styles. Students participate in engaging storylines along with characters that connect their learning to real-world contexts and build confidence through facilitating a positive attitude towards mathematics. Various opportunities are provided to consolidate student learning through technology and offline activities, including tactile manipulatives, to reinforce essential mathematical strategies and tools. The course has a strong focus on reinforcing number sense and numeracy skills and provides various activities for practice throughout. This course prepares students for grade 4 mathematics.

## Resources Required by the Student

This course is entirely online and does not require nor rely on any textbook. Students will require the following resources:

- A scanner, smart phone camera, or similar device to digitize handwritten or hand-drawn work
- A printer
- A physical binder, folder, or notebook for offline activities
- Various household items to complete offline activities

The following math tools and resources are optional:

- Ten frames
- Counting rods and unit cubes
- Tangrams (pattern/shape blocks)

## Overall Curriculum Expectations

Strand	Overall Expectations
Number Sense and Numeration	<ul style="list-style-type: none"><li>• Read, represent, compare, and order whole numbers up to 1000, and use concrete materials to represent fractions and money amounts up to \$10.</li><li>• Demonstrate an understanding of magnitude by counting forward and backwards by various numbers and from various starting points.</li><li>• Solve problems involving the addition and subtraction of single- and multi-digit whole numbers using a variety of strategies, and demonstrate an understanding of multiplication and division.</li></ul>
Measurement	<ul style="list-style-type: none"><li>• Estimate, measure, and record length, perimeter, area, mass, capacity, time, and temperature using standard units.</li><li>• Compare, describe, and order objects using attributes measured in standard units.</li></ul>
Geometry and Spatial Sense	<ul style="list-style-type: none"><li>• Compare two-dimensional shapes and three-dimensional figures, and sort them by their geometric properties.</li><li>• Describe relationships between two-dimensional shapes and between two-dimensional shapes and three-dimensional figures.</li><li>• Identify and describe the locations and movements of shapes and objects.</li></ul>
Patterning and Algebra	<ul style="list-style-type: none"><li>• Describe, extend, and create a variety of numeric patterns and geometric patterns.</li><li>• Demonstrate an understanding of equality between pairs of expressions using addition and subtraction of one- and two-digit numbers.</li></ul>
Data Management and Probability	<ul style="list-style-type: none"><li>• Collect and organize categorical or discrete primary data, and display the data using charts and graphs, including vertical and</li></ul>

	<p>horizontal bar graphs, with labels ordered appropriately along horizontal axes as needed.</p> <ul style="list-style-type: none"> <li>• Read, describe, and interpret primary data presented in charts and graphs, including vertical and horizontal bar graphs.</li> <li>• Predict and investigate the frequency of a specific outcome in a simple probability experiment.</li> </ul>
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## Teaching and Learning Strategies

Through a balance of problem-solving and direct instruction, students develop a strong foundation of mathematical processes, knowledge, and skills to apply in real-world contexts. The course utilizes a combination of technology and offline activities, providing opportunities to develop an understanding of skills and concepts in interactive and concrete ways and engage multiple learning styles. The lessons feature a variety of intriguing storylines, characters, videos, storybooks, and interactive games to reinforce students' learning. The activities also build a foundation of mathematical models and strategies that students will use throughout the elementary grades.

The course relies on the assistance of a learning coach to support young students through the content. The learning coach will be involved in facilitating technical aspects of the course (e.g. printing and scanning printable activities) and participating in discussion-based activities to assist students in developing communication skills.

## Reporting (Facilitated Only)

Student achievement will be communicated formally to students via progress reports and official report cards. A progress report is provided after completion of the first unit in the course. The progress report is not an evaluation of the student's achievement. Rather, the purpose is to give students and parents early and specific feedback regarding the student's general progress during the first unit of study.

Report cards are issued at the midterm point in the course as well as upon completion of the course. Each report card will focus on two distinct but related aspects of student achievement. First, the achievement of curriculum expectations is reported as a letter grade. Additionally, the course median is reported as a letter grade. The teacher will also provide written comments concerning the student's strengths, areas for improvement, and next steps.

Second, the learning skills are reported as letter grades representing four levels of accomplishment. Upon completion of a course, VES will send a copy of the report card to the student's home school (if in Ontario) where the course will be added to the ongoing list of courses on the student's Ontario Student Record (OSR). The report card will also be sent to the student's home address.

## Units

Unit	Description
Counting	Students learn about representing, comparing, and ordering numbers up to 1000, count by 1s, 2s, 5s, 10s, 25s, and 100s, and count back by 10s, 25s, and 100s. Students will also read and write numbers up to 100, compose, decompose, and round.
Addition and Subtraction	In this unit, students add and subtract three-digit numbers mentally using math tools and vertical equations. Students also explore fact families.
Patterning	Students identify, extend, and create patterns using objects, shapes, and numbers while analysing patterns found on farms.
Data	Students sort, collect, organize, and read data, learn about mode, and explore probability games.
Fractions, Multiplication, and Division	Students investigate fractions, multiplication, and division. Students analyse arrays, equal groups, number lines, and hundreds charts, and solve multiplication and division problems.
Shapes	In this unit, students describe, compare, sort, and build two-dimensional and three-dimensional shapes, and identify flips, slides, and turns. Students also identify and compare right angles.
Money	Students explore everyday situations related to money to estimate, count, and show money values, and add and subtract money values up to 10 dollars.
Measurement	Students investigate measurement by examining length, height, and distance, measuring perimeter, area, mass, and capacity, estimating, reading, and recording temperatures, and reading time. Students also solve problems involving time, days, weeks, and years.

### The Final Grade (Facilitated Only)

The evaluation for this course is based on the student's achievement of curriculum expectations. The final letter grade represents the quality of the student's overall fulfillment of the expectations for the course and reflects the corresponding level of achievement as described in the achievement chart for the discipline. The final grade will be determined based on each of the 8 units (12.5% each) and will reflect the student's most consistent level of achievement throughout the course, although special consideration will be given to more recent evidence of achievement. There is no final assessment, such as an exam, in this course.