



Course Outline: Grade 1 Mathematics

Course Name: Grade 1 Mathematics

Course Code: MAT1

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 Kindergarten 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 50 while representing money amounts and performing addition and subtraction. Through investigation, students will measure with non-standard units and begin to tell time. Students build their understanding of two- and three-dimensional shapes, recognize symmetry, and describe location. Students will create patterns and establish an understanding of equality. Students collect, organize, read and display data, and consider the likelihood of events. Throughout the course, students begin developing the mathematical processes of problem-solving, reasoning and proving, reflecting, selecting tools and computational strategies, connecting, representing, and communicating at a basic 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 students' 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 2 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">• Read, represent, compare, and order whole numbers up to 50, and use concrete materials to investigate fractions and money amounts.• Demonstrate an understanding of magnitude by counting forward to 100 and backwards from 20.• Solve problems involving the addition and subtraction of single-digit whole numbers using a variety of strategies.
Measurement	<ul style="list-style-type: none">• Estimate, measure, and describe length, area, mass, capacity, time, and temperature using non-standard units of the same size.• Compare, describe, and order objects using attributes measured in non-standard units.
Geometry and Spatial Sense	<ul style="list-style-type: none">• Identify common two-dimensional shapes and three-dimensional figures, and sort and classify them by their attributes.• Compose and decompose common two-dimensional shapes and three-dimensional figures.• Describe the relative locations of objects using positional language.
Patterning and Algebra	<ul style="list-style-type: none">• Identify, describe, extend, and create repeating patterns.• Demonstrate an understanding of the concept of equality using concrete materials and addition and subtraction up to 10.
Data Management and Probability	<ul style="list-style-type: none">• Collect and organize categorical primary data, and display the data using concrete graphs and pictographs without regard for the order of labels on the horizontal axis.• Read and describe primary data presented in concrete graphs and pictographs.• Describe the likelihood that everyday events will happen.

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 show, compare, and order numbers up to 50. Students will read and write numbers, estimate amounts, and count by 1s, 2s, and 5s. Students also find ordinal numbers, order the months of the year, and read a calendar.
Patterns	In the patterning unit, students find, describe, and create patterns. Students use shapes, colours, numbers, sounds, and actions to create and analyse patterns around them.
Addition and Subtractions	Students develop an understanding of basic addition and subtraction, including utilizing the appropriate symbols and strategies.
Measurement	Students learn to estimate, compare, describe, and measure length, height, distance, and area using non-standard units of measure.
Shapes, Position, and Symmetry	Students sort, find, and name shapes, find symmetry and create symmetrical designs, and describe and create their own designs. Students also describe positions and locations.
Graphs and Charts	In this unit, students learn about recording, organizing, and reading data in pictographs and concrete graphs. Students also ask and answer questions about graphs.
Equality	Students investigate creating, showing, and finding equal groups using a balance model. Students also use addition and subtraction to create equal groups.
Composing, Decomposing, and Groups	Students explore composing and decomposing numbers up to 20, and develop a basic understanding of fractions through learning about wholes, halves, thirds, and fourths.
Likely and Unlikely Events	Students explore probability through examining likely and unlikely events in everyday situations by describing and comparing the likelihood of events.
Shapes and Figures	Students find, sort, and build two-dimensional and three-dimensional shapes and figures. Students also compare and describe shapes in everyday contexts.
Capacity, Mass, Time, and Temperature	Students learn how to estimate, measure, and describe capacity and mass. Students also learn to read digital and analogue clocks, write the time to the half hour, and relate temperature to season.
Money	Students learn about the value of coins and count and compare money amounts. Students also solve addition and subtraction problems related to money.

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 12 units (8.3% 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.