INSTITUTE OF CANADIAN EDUCATION

Course Title: Mathematics: (MTH1W) Grade 9, De-Streamed

Course Name: Mathematics

Course Code: MTH1W

Grade :9

Course Type : De-Streamed / Open

Credit Value: 1.0

Prerequisite : None

Curriculum Policy Document : Mathematics, The Ontario Curriculum, Grade 9 & 10, 2021 (Revised); Growing Success: Assessment, Evaluation, and Reporting in Ontario Schools (2010)

Course Developer: Institute of Canadian Education.

Department: MATHEMATICS

Head of Department: Meena Yohan

Development Date: 2025

Most Recent Revision Date: 2026

This course enables students to consolidate, and continue to develop, an understanding of mathematical concepts related to number sense and operations, algebra, measurement, geometry, data, probability, and financial literacy. Students will use mathematical processes, mathematical modelling, and coding to make sense of the mathematics they are learning and to apply their understanding to culturally responsive and relevant real-world situations. Students will continue to enhance their mathematical reasoning skills, including proportional reasoning, spatial reasoning, and algebraic reasoning, as they solve problems and communicate their thinking.

Prerequisite : None

COURSE EXPECTATION

UNIT ORDER	UNIT NAME	UNIT DESCRIPTION	Time Allocated
UNIT 1	NUMBER SENSE	In this unit, students explore the fundamentals of numbers and their operations, including integers, fractions, decimals, and percentages. They develop strategies for solving problems involving ratios, rates, and proportional reasoning, as well as powers, roots, and exponents. Students also examine order of operations and basic number theory, applying these concepts to real-world situations.	16 Hours
UNIT 2	ALGEBRA	In this unit, students focus on expressions, equations, and inequalities, learning to simplify, substitute, and manipulate algebraic forms. They explore patterns and relationships, solve linear equations and inequalities, and apply algebraic reasoning to everyday problems, preparing for the study of functions and more complex mathematical concepts.	18 Hours
UNIT 3	DATA MANAGEMENT	In this unit, students learn to collect, organize, and interpret data, using charts, tables, and graphs to represent information clearly. They calculate measures of central tendency, analyze variability, and explore theoretical and experimental probability, applying their findings to everyday contexts and decision-making.	18 Hours
-	Midterm		2 Hours
UNIT 4	Linear Relations	In this unit, students investigate linear relations through graphing, analyzing slope and intercepts, and writing equations from data or graphs. They explore proportional relationships, make predictions, and solve real-world problems, connecting abstract concepts to visual and practical applications.	18 Hours

UNIT 5	GEOMETRY AND MEASUREMENT	In this unit, students study geometric shapes and measurement in two and three dimensions. They calculate perimeter, area, volume, and surface area, analyze angles and triangles, and explore transformations and symmetry. Real-world problem-solving and applications of measurement are emphasized throughout the unit.	18 Hours
UNIT 6	FINANCIAL LITERACY	In this unit, students apply mathematics to personal finance and real-life situations. They learn budgeting, calculate simple interest, and examine the impact of taxes, discounts, and savings. The unit emphasizes practical problem-solving skills and informed decision-making in financial contexts.	18 Hours
FINAL	FINAL EXAM		2 Hours
TOTAL			110 Hours

Overall Curriculum Expectations:

STRAND A: Mathematical Thinking and Making Connections

- A1. apply the mathematical processes to develop a conceptual understanding of, and procedural fluency with, the mathematics they are learning
- A2. make connections between mathematics and various knowledge systems, their lived experiences, and various real-life applications of mathematics, including careers

STRAND B. Number Sense

- **B1:** Understand the development and use of numbers and connections between number sets.
- **B2:** Represent numbers, evaluate powers, and simplify expressions using exponent relationships.
- **B3:** Apply rational numbers, ratios, rates, percentages, and proportions to solve problems.

STRAND C: Algebra

- C1. demonstrate an understanding of the development and use of algebraic concepts and of their connection to numbers, using various tools and representations
- C2. apply coding skills to represent mathematical concepts and relationships dynamically, and to solve problems, in algebra and across the other strands
- C3. represent and compare linear and non-linear relations that model real-life situations, and use these representations to make predictions
- C4. demonstrate an understanding of the characteristics of various representations of linear and non-linear relations, using tools, including coding when appropriate

STRAND D: Data Management

- D1. describe the collection and use of data, and represent and analyse data involving one and two variables
- D2. apply the process of mathematical modelling, using data and mathematical concepts from other strands, to represent, analyse, make predictions, and provide insight into real-life situations

STRAND E: Geometry and Measurement

E1. demonstrate an understanding of the development and use of geometric and measurement relationships, and apply these relationships to solve problems, including problems involving real-life situations

STRAND F: Financial Literacy

F1. demonstrate the knowledge and skills needed to make informed financial decisions

Teaching and Learning Strategies

Students will engage in a variety of interactive and student-centred learning activities, including:

- **Multimedia presentations:** Videos, examples, practice questions, online simulations, and quizzes are used to introduce and reinforce concepts.
- **Teacher-student discussions:** Video conferencing, and end-of-unit conversations provide opportunities for students to explain their thinking, ask questions, solve problems, and receive timely feedback.
- **Instructor demonstrations:** Teachers model research skills, problem-solving strategies, and other course-specific skills through videos, demonstrations, and virtual meetings.
- **Discussion forums:** Students share ideas, perspectives, and solutions with peers and provide constructive feedback.

- **Reflection and writing:** Students reflect on their learning, connect new concepts to prior knowledge and real-life experiences, and develop critical-thinking and communication skills.
- **Research and inquiry:** Students gather and evaluate information, analyze findings, draw conclusions, and develop further questions using creative and critical thinking.
- **Virtual simulations and practical applications:** Interactive activities allow students to explore relationships, test ideas, and apply learning to real-world situations.
- **Visual learning:** Diagrams, graphs, charts, and tables are used to organize information, identify patterns, and represent mathematical and conceptual relationships.
- **Practice and individual activities:** Students complete assignments and practice problems at their own pace to consolidate learning and demonstrate individual understanding. Teachers provide ongoing written and oral feedback and accommodate student needs, including appropriate IEP-related modifications.

Assessment Strategies

Assessment practices can nurture students' sense of progress and competency and information instruction. Many diagnostic tools, e.g. checklists and inventories, are used at regular intervals throughout the units to encourage students' understanding of their current status as learners and to provide frequent and timely reviews of their progress. Assessment of student acquisition of listening and talking, reading and viewing and writing skills also occurs regularly through unobtrusive teacher observation and conferencing.

ASSESSMENT ACTIVITIES

- Homework assignments
- Individual conference meetings
- Discussion Forums
- Diagnostic tests and writing tasks
- Editing Checklists
- Reflections
- Oral presentations & Active Listening
- Tests & Exam
- Evaluations
- Labs and interactive diagrams

Evaluation

Final Grade

The final grade will be determined as follows (in accordance with Ministry of Education standards):

Term Work Based on evaluations conducted throughout the course.	65%
Final Evaluation A final evaluation in the form of a written exam.	20%
Attendance and Participation	15%

Final evaluation breakdown:

- 20% written exam

Note:The **EQAO Grade 9 Assessment of Mathematics counts as the written exam for the MTH1W course and makes up 20% of the student's mark.*

Note: Students below 50% at the end of the course will not obtain a credit for MTH1W.

CONSIDERATION FOR PROGRAM PLANNING

Students with Special Education Needs

All students can succeed. Instruction will use **Universal Design for Learning (UDL)** and differentiated instruction to meet diverse learning needs. Teachers will use evidence-based strategies and collaborate with appropriate staff to support student success.

English Language Learners (ELLs)

Instruction will support students from diverse linguistic and cultural backgrounds through clear language, visuals, modelling, vocabulary support, and opportunities to develop English language skills while demonstrating their learning.

Role of Technology

Technology and multimedia resources will be used to support learning, research, organization, communication, collaboration, and the presentation of student work.

Accommodations

Accommodations will be determined in consultation with parents/guardians, teachers, administration, and relevant educational assessments. Supports may include:

- Step-by-step instructions and clear directions
- Graphic organizers and planning tools
- Additional time for assessments or assignments
- Oral responses or scribing when appropriate
- Flexible reading and writing options
- Advance access to reading materials
- Assistive technology and multimedia supports
- Enrichment opportunities for students who require additional challenge

Required Textbooks and Resources:

- Ontario Ministry of Education–approved or teacher-selected **Grade 9 Workplace Mathematics resources**, covering topics such as number sense, measurement, geometry, data management, and financial mathematics
- Supplementary readings and media: **articles, videos, and online resources** that support problem-solving, real-world applications, and workplace mathematics contexts
- Teacher-provided **worksheets, practice exercises, case studies, and guided activities** to develop mathematical understanding and skills

Digital Resources and Software:

- Google Drive – storing, sharing, and submitting assignments
- Internet access for research and digital archives
- Microsoft Office Suite (Word, PowerPoint, Excel) or equivalent

Teacher Considerations:

- Assistive technology (text-to-speech, speech-to-text) may be used
- Flexibility in submission formats (Google Docs, PDFs, slides, videos, etc.)

Tips for Success – MTH1W

Welcome to MTH1W: Grade 9 Mathematics, Workplace Preparation!

Get ready to develop your understanding of mathematics in real-world and workplace contexts,

while strengthening problem-solving, critical thinking, and digital skills in an online environment. By the end of this course, you will have built strong foundational math skills, as well as improved time management, organization, and independent learning habits.

Here are some reminders to help you succeed in MTH1W:

- Check **Announcements, "What's New," and your mailbox** every day for updates and important information.

- Check the **calendar for due dates**! It is your responsibility to meet deadlines. If you have difficulty, contact your teacher promptly.
- Review **assignment instructions and evaluation criteria** regularly. Create a checklist to ensure your assignments include all required elements and are submitted correctly by the due date.

Ask for help when needed!

For technical issues, contact the Help Desk. **For course-related questions or problems**, email your teacher. Expect a response within 24 hours. If urgent, include **"URGENT"** in the email subject line.

Key Elements to Success in MTH1W:

- **Time Commitment** – Plan for 1–2 hours of focused study each day.
- **Communication** – Maintain regular contact with your teacher for guidance and feedback.
- **Engagement** – Approach each activity with effort and persistence. Online learning may have challenges, but with consistent practice and problem-solving, you will succeed.

Remember, this course is designed to help you apply mathematics to practical, workplace, and real-life situations. Approach each task with curiosity, effort, and a positive mindset!