



Ontario eSecondary School Course Outline 2026-2027

Ministry of Education Course Title: Foundations of Mathematics Grade 11, College Preparation	
Ministry Course Code: MBF3C	
Course Type: College Preparation	
Grade: 11	
Credit Value: 1.0	
Prerequisite(s): Foundations of Mathematics, Gr. 10 Applied	
Department: Mathematics	
Course developed by: Andrew Lee	Date created: Nov 15, 2020 Revised: August 1, 2026
Length: One Semester	Hours: 110
This course has been developed based on the following Ministry documents: 1. <i>The Ontario Curriculum, Grades 11 and 12 Mathematics, Revised 2007</i> 2. <i>Growing Success: Assessment, Evaluation, and Reporting in Ontario Schools (2010)</i>	

COURSE DESCRIPTION/RATIONALE

This course enables students to broaden their understanding of mathematics as a problem-solving tool in the real world. Students will extend their understanding of quadratic relations; investigate situations involving

exponential growth; solve problems involving compound interest; solve financial problems connected with vehicle ownership; and develop their ability to reason by collecting, analysing, and evaluating data involving one variable; connect probability and statistics; solve problems in geometry and trigonometry. Students will consolidate their mathematical skills as they solve problems and communicate their thinking.

<http://www.edu.gov.on.ca/eng/curriculum/secondary/math1112currb.pdf>

OVERALL CURRICULUM EXPECTATIONS

MATHEMATICAL MODELS	MAKE CONNECTIONS BETWEEN THE NUMERIC, GRAPHICAL, AND ALGEBRAIC REPRESENTATIONS OF QUADRATIC RELATIONS, AND USE THE CONNECTIONS TO SOLVE PROBLEMS;
	DEMONSTRATE AN UNDERSTANDING OF EXPONENTS, AND MAKE CONNECTIONS BETWEEN THE NUMERIC, GRAPHICAL, AND ALGEBRAIC REPRESENTATIONS OF EXPONENTIAL RELATIONS;
	DESCRIBE AND REPRESENT EXPONENTIAL RELATIONS, AND SOLVE PROBLEMS INVOLVING EXPONENTIAL RELATIONS ARISING FROM REAL-WORLD APPLICATIONS.
PERSONAL FINANCE	COMPARE SIMPLE AND COMPOUND INTEREST, RELATE COMPOUND INTEREST TO EXPONENTIAL GROWTH, AND SOLVE PROBLEMS INVOLVING COMPOUND INTEREST;
	COMPARE SERVICES AVAILABLE FROM FINANCIAL INSTITUTIONS, AND SOLVE PROBLEMS INVOLVING THE COST OF MAKING PURCHASES ON CREDIT;
	INTERPRET INFORMATION ABOUT OWNING AND OPERATING A VEHICLE, AND SOLVE PROBLEMS INVOLVING THE ASSOCIATED COSTS.
GEOMETRY AND TRIGONOMETRY	REPRESENT, IN A VARIETY OF WAYS, TWO-DIMENSIONAL SHAPES AND THREE-DIMENSIONAL FIGURES ARISING FROM REAL-WORLD APPLICATIONS, AND SOLVE DESIGN PROBLEMS;
	SOLVE PROBLEMS INVOLVING TRIGONOMETRY IN ACUTE TRIANGLES USING THE SINE LAW AND THE COSINE LAW, INCLUDING PROBLEMS ARISING FROM REAL-WORLD APPLICATIONS.
DATA MANAGEMENT	SOLVE PROBLEMS INVOLVING ONE-VARIABLE DATA BY COLLECTING, ORGANIZING, ANALYSING, AND EVALUATING DATA;
	DETERMINE AND REPRESENT PROBABILITY, AND IDENTIFY AND INTERPRET ITS APPLICATIONS.

COURSE CONTENT

<i>Unit</i>	<i>Length</i>
1: Trigonometry	20.5 hours

2: Exponentials	18 hours
3: Finance	15.5 hours
4: Quadratics	28.5 hours
5: Probability and Statistics	25.5 hours
Final Exam	2 hours
Total	110 Hours

UNIT DESCRIPTIONS

Unit 1 - Trigonometry

In this unit students will learn how to represent, in a variety of ways, two-dimensional shapes and three dimensional figures arising from real-world applications, and solve design problems. This unit will also prepare students to solve problems involving trigonometry in acute triangles using the sine law and the cosine law, including problems arising from real-world applications.

Unit 2 - Exponentials

In this unit students will develop an understanding of exponents, and make connections between the numeric, graphical, and algebraic representations of exponential relations. By the end of this unit, students will know how to describe and represent exponential relations, and solve problems involving exponential relations arising from real world applications.

Unit 3 - Finance

In this unit students will learn how to compare services available from financial institutions, and solve problems involving the cost of making purchases on credit. By the end of this unit students will know how to interpret information about owning and operating a vehicle, and solve problems involving the associated costs.

Unit 4 - Quadratics

In this unit students will learn how to make connections between the numeric, graphical, and algebraic representations of quadratic relations, and use the connections to solve problems. Students will learn the key characteristics of the quadratic models and the role of their transformations.

Unit 5 - Probability and Statistics

In this unit students will learn how to solve problems involving one-variable data by collecting, organizing, analysing, and evaluating data. By the end of the unit, students will know how to determine and represent probability, and identify and interpret its applications.

TEACHING AND LEARNING STRATEGIES

The students will experience a variety of activities:

Participation activities are seven standardized, course-wide prompts (Teach the Teacher, Concept in Action, Spot the Error, Concept Connections, Take a Position, Claim/Support/Question, and a culminating Course Takeaways video) embedded at set points throughout the course. They build metacognitive engagement with unit concepts and contribute to the course's participation grade.

Whole-Class Activities (facilitated through discussion forums)

Whole class activities are designed to introduce concepts and skills that are directly applicable to the workplace and to build on the content being studied during small group and individual activities. These activities include the following:

Class discussions that are facilitated through video conferencing and telephone conversations with their subject teacher or discussions with other students concerning the concepts and skills being studied.

Video presentations and technological aids (research) with videos embedded to enrich the course content and clarify concepts and skills being studied. Also the use of online pre-approved quizzes and games to help a student become more familiar with the concepts and skills being studied.

Diagnostic and review activities (audio and video taping) can be student-led or teacher-led to work as a review for students through audio and video made to share among each other to help reinforce the concepts and skills being studied.

Brainstorming, charts and graphs are a great way for students to demonstrate their knowledge of subject matter through graphic organizers, pictures, and texts. This is communicated through assignments in Moodle.

Individual Activities

The teacher should provide a variety of individual assignments to expand and consolidate the learning that takes place in the whole-class and small group activities. Individual activities allow the teacher to accommodate interests and needs and to assess the progress of individual students. The teacher plays an important role in supporting these activities through the provision of ongoing feedback to the students, both orally and in writing. Teachers are encouraged to include individual activities such as the following in the course:

Research is completed in an online environment by teaching the students first about plagiarism rules and giving examples of good sources to use. The students are not only limited to the online search for information, but have resources available by links on the Moodle page of information that has been scanned and uploaded.

Individual assignments are worked on at a student's own pace. The teacher can support the student in these activities with ongoing feedback.

Oral presentations are facilitated through the use of video conferencing and video recording.

Practical extension and application of knowledge helps students develop their own voice, and gives them the ability to make personal connections, and connections to the world throughout their course. Students are given a variety of reading and viewing texts to give them many chances to apply their new concepts, skills, and knowledge.

Ongoing project work is something that is valued in the earning of an English credit. The ongoing project can be submitted to the teacher for ongoing feedback in both written and oral work.

Reading students are able to read material online. The students may print out the reading material to use it to highlight, take notes, and have with them when a computer is not available.

Written assignments are used to allow students to develop their skills in writing, comprehension, and communication. With the online format students submit their work, and have a chance to get feedback from the teacher, and submit their best work. This can be demonstrated with reading responses, personal writing, report writing, essay writing, script writing, business and technical writing, and individual research assignments.

ASSESSMENT, EVALUATION, AND REPORTING

Assessment: The process of gathering information that accurately reflects how well a student is achieving the identified curriculum expectations. Teachers provide students with descriptive feedback that guides their efforts towards improved performance.

Evaluation: Assessment of Learning focuses on Evaluation which is the process of making a judgement about the quality of student work on the basis of established criteria over a limited, reasonable period of time.

Reporting: Involves communicating student achievement of the curriculum expectations and Learning Skills and Work Habits in the form of marks and comments as determined by the teacher's use of professional judgement.

Assessment & Evaluation at OES: Triangulation of Learning

In alignment with the Ontario Ministry of Education's *Growing Success* policy, student achievement across all high school courses at Ontario eSecondary School (OES) is evaluated through the **triangulation of evidence: observations, conversations, and student products**.

OES courses incorporate each of these evidence sources in a variety of ways to provide every student with equitable opportunities to demonstrate their learning:

- **Observations:** Collected through video recordings, interactive digital tools, learning logs, and synchronous task demonstrations.
- **Conversations:** Gathered via teacher-student conferences, oral defenses, virtual check-ins, and reflective feedback dialogues.
- **Products:** Demonstrated through major projects, essays, lab reports, performance tasks, and final assessments.

By evaluating a balanced variety of evidence, OES teachers apply professional judgment to ensure accurate, fair, and comprehensive assessment of each student's progress.

STRATEGIES FOR ASSESSMENT

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.

Units conclude with performance tasks. Teachers are encouraged to share goals with students early in the course and to connect unit learning experiences frequently and explicitly with big ideas, overall expectations, and performance tasks, i.e. check bricks; teacher-adapted generic rubrics available in many sources, including the *Ontario Secondary School Literacy Course (OSSLC) Profile*, so that they are more task-specific. The teacher might ask: "What does the criteria look like for this particular task?" Or "What does limited effectiveness look like?" The teacher could involve students in the discussion or creation of rubrics, and teach students to use rubrics as a learning tool that can support the writing process and practice.

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

The final grade will be determined as follows:

- ☐ 65% of the grade will be based on evaluation conducted throughout the course. This portion of the grade should reflect the student's most consistent level of achievement throughout the course, although special consideration will be given to more recent evidence of achievement.
- ☐ 25% of the grade will be based on a final evaluation administered at the end of the course. This evaluation will be based on a final written examination, comprehensive of the course. The final evaluation is an opportunity for the student to demonstrate comprehensive achievement of the overall expectations for the course.
- ☐ 10% of the grade will be based on the student's attendance and participation throughout the course, assessed according to Ministry criteria.

(*Growing Success: Assessment, Evaluation and Reporting in Ontario Schools*. Ontario Ministry of Education Publication, 2010 p.41)

TERM WORK EVALUATIONS (65%)

Evaluation Item	Description	Category	Weight
Problem sets	Problem sets supplement lessons and are used to assess whether or not students are meeting criteria for success	K,T,C,A	10
End of Unit Conversation	Unit reflection happens at the end of each unit for both student and teacher to reflect on their process and understanding in the unit.	K,T,C,A	5
Unit Quiz	Each unit has a short quiz on material covered up to the quiz.	K,T,C,A	15
Unit Assignment	Unit assignments are based on curriculum expectations and cover the entirety of each unit	K,T,C,A	35

FINAL EVALUATIONS (25%)

Evaluation Item	Description	Category	Weight
Final Exam	A final, written examination, covering all curriculum expectations for the course.	K,T,C,A	25

ATTENDANCE AND PARTICIPATION (10%)

Evaluation Item	Description	Category	Weight
Attendance	Assessed according to the Ministry's attendance criteria (<i>Growing Success</i> , September 2026 update), based on the proportion of unexcused absences over the course.		5
Participation	Assessed according to the Ministry's		5

	participation criteria (Growing Success, September 2026 update), based on engagement in class discussions and activities throughout the course, including the standardized participation prompts (see Teaching and Learning Strategies).		
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AFL/AAL/AOL Tracking sheet:

Unit 1: Trigonometry

AAL	AFL	AOL
-Handout Solutions	-Lesson Notes -Discussion Forum Post	-Quiz -Unit Assignment -End of unit observation and conversation with teacher

Unit 2: Exponentials

AAL	AFL	AOL
-Handout Solutions	-Lesson Notes -Discussion Forum Post	-Quiz -Unit Assignment -End of unit observation and conversation with teacher

Unit 3: Finance

AAL	AFL	AOL
-Handout Solutions	-Lesson Notes -Discussion Forum Post	-Quiz -Unit Assignment --End of unit observation and conversation with teacher

Unit 4: Quadratics

AAL	AFL	AOL
-Handout Solutions	-Lesson Notes -Discussion Forum Post	-Quiz -Unit Assignment -End of unit discussion

Unit 5: Probability and Statistics

AAL	AFL	AOL
-Handout Solutions	-Lesson Notes -Discussion Forum Post	-Quiz -Unit Assignment --End of unit observation and conversation with teacher

Unit 6: Final Assessments

AOL
-Final Exam

CONSIDERATION FOR PROGRAM PLANNING

PLANNING PROGRAMS FOR STUDENTS WITH SPECIAL EDUCATION NEEDS

OES teachers are the key educators of students with special education needs and have a responsibility to help all students learn. Program planning for students with special education needs is guided by the principles set out in *Learning for All: A Guide to Effective Assessment and Instruction for All Students, Kindergarten to Grade 12* (2013): all students can succeed; each student has their own unique patterns of learning; successful instructional practices are founded on evidence-based research, tempered by experience; and universal design and differentiated instruction are effective and interconnected means of meeting the learning or productivity needs of any group of students. Where a student has an Individual Education Plan (IEP), the accommodations identified in the IEP — instructional, environmental, and assessment — are implemented within the course, and the online learning environment is adapted accordingly. The asynchronous structure of OES courses provides built-in flexibility that supports many common accommodations, including extended time for assignments and assessments, breaks as needed, access to assistive technology, and the ability to review instructional material multiple times.

PROGRAM CONSIDERATIONS FOR ENGLISH LANGUAGE LEARNERS

Ontario schools have some of the most linguistically diverse student populations in the world, and OES serves English language learners across Ontario and internationally. English language learners may be Canadian-born or newcomers; they may have experience of highly sophisticated educational systems or may have come from regions where access to formal schooling was limited. In planning this course, teachers consider the strengths and needs of English language learners and provide appropriate adaptations consistent with *English Language Learners / ESL and ELD Programs and Services: Policies and Procedures for Ontario Elementary and Secondary Schools, Kindergarten to Grade 12* (2007). Supports within the online environment include modification of instructional language without modification of curriculum expectations, use of visual and multimedia supports, opportunities to replay and review lesson content, extended time where appropriate, and teacher feedback that models academic English. Assessment accommodations, such as granting additional time and permitting the use of bilingual dictionaries, are provided where appropriate.

ENVIRONMENTAL EDUCATION

Consistent with *Acting Today, Shaping Tomorrow: A Policy Framework for Environmental Education in Ontario Schools* (2009) and *Environmental Education: Scope and Sequence of Expectations* (2017), environmental education is embedded across the curriculum rather than treated as a separate subject. Teachers help students acquire knowledge about the environment, develop skills to address environmental issues, and foster attitudes that motivate responsible environmental action. As an online school, OES also models environmental responsibility through paperless course delivery and the elimination of daily commuting. In this course, students apply mathematical processes to real data, including data related to environmental issues such as resource consumption, climate trends, and population growth, reinforcing the role of mathematics in understanding and addressing environmental questions.

EQUITY AND INCLUSIVE EDUCATION

This course is planned and delivered in accordance with Ontario's Equity and Inclusive Education Strategy (2009) and Policy/Program Memorandum No. 119, *Developing and Implementing Equity and Inclusive Education Policies in Ontario Schools* (2013). OES is committed to an inclusive learning environment in which all students feel welcomed, respected, and able to succeed, regardless of ancestry, culture, ethnicity, sex, gender identity, sexual orientation, disability, race, religion, or socio-economic status. In this course, teachers select learning materials that reflect the diversity of Ontario and the wider world, address bias in texts and resources where it arises, and ensure that assessment practices are fair and free of cultural assumptions. Because OES students learn from communities across Ontario, Quebec, and around the world, discussion activities and teacher feedback are moderated to maintain a respectful, harassment-free environment for all learners.

FINANCIAL LITERACY EDUCATION

In accordance with *A Sound Investment: Financial Literacy Education in Ontario Schools* (2010) and current Ministry direction on financial literacy, students are provided with opportunities to build the knowledge

and skills needed to make informed financial decisions, understand their roles as consumers and citizens, and think critically about the economic forces that affect their lives. OES also supports students in meeting the Ministry's financial literacy graduation requirement, as described in the OES School Course Calendar. Financial literacy is central to this course: students work directly with personal finance topics including compound interest, saving, borrowing, budgeting, and the costs of owning or renting accommodation and operating a vehicle.

FIRST NATIONS, MÉTIS, AND INUIT EDUCATION

Program planning in this course aligns with the Ontario First Nation, Métis, and Inuit Education Policy Framework (2007), which supports improved outcomes for First Nations, Métis, and Inuit students and promotes awareness and understanding of Indigenous histories, cultures, perspectives, and contributions among all students. Where appropriate to the curriculum expectations, teachers incorporate Indigenous perspectives, authors, and content, and approach these topics with accuracy and respect, drawing on Ministry-recommended resources. All OES students benefit from opportunities to deepen their knowledge of the histories and contemporary realities of First Nations, Métis, and Inuit peoples, including the legacy of the residential school system and the Truth and Reconciliation Commission's Calls to Action related to education.

THE ROLE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY

Information and communications technology (ICT) is integral to every OES course: instruction, learning activities, assessment, and teacher-student communication all take place through the school's learning management system. ICT tools — including multimedia lessons, digital texts, simulations, video conferencing for proctored assessments, and word-processing and productivity software — extend and enrich instruction and allow students to collect, organize, and present their learning in a range of formats. Teachers help students develop digital citizenship skills, including responsible and ethical use of technology, critical evaluation of online sources, protection of personal information, and academic integrity in digital environments, consistent with OES's Acceptable Use, Academic Honesty, and Artificial Intelligence policies as published in the School Course Calendar.

CAREER EDUCATION

Consistent with *Creating Pathways to Success: An Education and Career/Life Planning Program for Ontario Schools* (2013), teachers support students in answering the four questions at the centre of education and career/life planning: Who am I? What are my opportunities? Who do I want to become? What is my plan for achieving my goals? Expectations in this course include many opportunities for students to apply their skills to work-related situations, explore educational and career options, and become self-directed learners. OES guidance staff support students in course selection, postsecondary application planning (including OUAC, CEGEP, and international pathways), and the development of individual pathways plans. The problem-solving, reasoning, and quantitative skills developed in this course support pathways into science, technology, engineering, mathematics, finance, data analysis, skilled trades, and many other fields, and connections to these destinations are highlighted throughout the course.

COOPERATIVE EDUCATION AND OTHER FORMS OF EXPERIENTIAL LEARNING

Planned learning experiences in the community, including job shadowing, work experience, and cooperative education, provide students with opportunities to see the relevance of their classroom learning, explore careers of interest, and develop essential workplace skills consistent with *The Ontario Curriculum, Grades 11 and 12: Cooperative Education* (2018). Students may earn up to two cooperative education credits toward their compulsory credit requirements for the Ontario Secondary School Diploma. Students interested in experiential learning opportunities related to this course are encouraged to contact OES guidance staff to discuss options available to them.

HEALTH AND SAFETY

Although OES students learn remotely, health and safety remain integral considerations in program planning. Teachers model and promote safe and healthy practices for online learning, including sound ergonomics, balanced screen time, regular breaks, and strategies that support positive mental health and

well-being. OES maintains a safe and respectful virtual learning environment consistent with the school's codes of conduct, bullying prevention expectations, and privacy practices as published in the School Course Calendar, and students are provided with clear channels for reporting concerns to their teachers, guidance staff, or the Principal.

ACCOMMODATIONS

Accommodations will be based on meeting with parent, teachers, administration and external educational assessment report. The following three types of accommodations may be provided:

- ☐ **Instructional accommodations:** such as changes in teaching strategies, including styles of presentation, methods of organization, or use of technology and multimedia.
- ☐ **Environmental accommodations:** such as preferential seating or special lighting.
- ☐ **Assessment accommodations:** such as allowing additional time to complete tests or assignments or permitting oral responses to test questions.

Other examples of modifications and aids, which may be used in this course, are:

- ☐ Provide step-by-step instructions.
- ☐ Help students create organizers for planning writing tasks.
- ☐ Record key words on the board or overhead when students are expected to make their own notes.
- ☐ Allow students to report verbally to a scribe (teacher/ student) who can help in note taking.
- ☐ Permit students a range of options for reading and writing tasks.
- ☐ Where an activity requires reading, provide it in advance.
- ☐ Provide opportunities for enrichment.