

## Course Outline

School Name: KEEWAYTINOOK INTERNET HIGH SCHOOL  
Department Name: Mathematics

Ministry of Education Course Title: Mathematics for Work and Everyday Life

Grade Level: 11

Ministry Course Code: MEL3E

Teacher's Name: Mary Anne F. Barrett

Developed by: Erik Tu Date: September 2016

Revision Date: September 2021

Developed from:

Ontario Ministry of Education. (2007). *The Ontario curriculum, grades 11 to 12: Mathematics*. Toronto ON: Queen's Printer for Ontario.

Text: None

Prerequisite: MPM1D or MFM1P or a ministry-approved locally developed grade 10 mathematics course

Credits: One

Length: 110 hours

Principal's Name: Angela Batsford-Mermans

Principal's Approval:



Approval Date: September 15, 2021

## Course Description/Rationale

This course enables students to broaden their understanding of mathematics as it is applied in important areas of day-to-day living. Students will solve problems associated with earning money, paying taxes, and making purchases; apply calculations of simple and compound interest in saving, investing, and borrowing; and calculate the costs of transportation and travel in a variety of situations.

## Overall Curriculum Expectations

### Earning, Paying Taxes, and Purchasing

- Interpret information about different types of remuneration, and solve problems and make decisions involving different remuneration methods;
- Demonstrate an understanding of payroll deductions and their impact on purchasing power;
- Demonstrate an understanding of the factors and methods involved in making and justifying informed purchasing decisions.

### Saving, Investing, and Borrowing

- Describe and compare services available from financial institutions;
- Demonstrate an understanding of simple and compound interest, and solve problems involving related applications;
- Interpret information about different ways of borrowing and their associated costs, and make and justify informed borrowing decisions.

### Transportation and Travel

- Interpret information about owning and operating a vehicle, and solve problems involving the associated costs;
- Plan and justify a route for a trip by automobile, and solve problems involving the associated costs;
- Interpret information about different modes of transportation, and solve related problems.

## Course Content

Unit	Length
1. Working for Your Money	17 hours
2. Hello, Good Buy!	14 hours
3. Bank On It!	18 hours
4. Making Your Money Work	13 hours
5. It's in Your Best Interest	14 hours
6. You Auto Know	18 hours
7. Transportations	16 hours
<b>Total</b>	<b>110 hours</b>

## Unit Descriptions

### Unit 1 – Working for Your Money

Students investigate remuneration and personal taxation. Students use appropriate technology to develop a working knowledge of salary, hourly rate, overtime, commission, and personal income tax. Utilizing this information, students investigate the relationship between net pay and gross pay. Opportunities are given for students to explore various spending habits as related to pay period. Students investigate the resources necessary for the completion of personal income tax returns. Throughout this unit, students utilize charts, spreadsheets, and appropriate technology to support their understanding of personal income. This unit connects to Indigenous education as it provides opportunities for analysing when and why a Status Indigenous person would have tax exemption under section 87 of the Indian Act.

## **Unit 2 – Hello, Good Buy!**

Throughout this unit, students are involved in various investigations and activities that allow them to apply responsible decision-making to purchasing situations. Students are given the opportunity to make correct change, perform cost comparisons, and calculate discounts, sale prices, and taxes. Students also identify and compare various purchase plans. Technology is used to enhance student understanding. Students are encouraged to utilize estimation to ensure that their calculated results are reasonable. This unit connects to Indigenous education as it provides opportunities to compare and contrast unit prices at the local Northern Stores and community stores.

## **Unit 3 – Bank On It!**

Students explore the world of financial institutions as it relates to saving their money. Particular emphasis is placed on simple and compound interest. Students identify and investigate various financial services in the context of real-life situations. Applying appropriate technology, students calculate investment growth, examine differences between simple interest and compound interest, and compare savings alternatives. This unit connects to Indigenous education as it provides opportunities to compare and contrast financial institutions and analyse which offer the best features for their life living on a First Nation reserve.

## **Unit 4 – Making Your Money Work**

Students investigate different types of investment strategies and associated characteristics. Students examine both long-term and short-term investments. Applications of both simple interest and compound interest with varying compounding periods are compared. Using appropriate technology, students analyse expected growth of investments and their associated risks. The results of this analysis enable students to make informed decisions regarding money management to optimize investment opportunities.

## **Unit 5 – It's in Your Best Interest**

Students investigate the features and conditions of credit cards, debit cards, and short-term loans. Using spreadsheet software, students examine the financial implications of delayed credit card payments and of personal loan features. The total interest paid is compared to the principal amount to determine advantages or disadvantages of borrowing options. Various payment alternatives are explored to make informed decisions regarding available loan features.

## **Unit 6 – You Auto Know**

Students investigate the costs of owning and operating both new and used vehicles by collecting data from current resources such as newspapers, Internet, and local car dealers. The long-term fixed and variable-operating costs of buying and leasing vehicles will be compared to the costs of using public transportation. Students explore issues relating to vehicle insurance, to obtaining a driver's license, and to the consequences of irresponsible operation of a vehicle. Particular emphasis is placed on making informed financial decisions. Appropriate technology is used to aid in the analysis of data. This unit connects to Indigenous education as it provides opportunities to weigh the benefits and drawbacks of owning versus leasing a vehicle while living on a First Nation reserve.

## **Unit 3 – Transportations**

Students access authentic resources, such as automobile associations, Internet, and travel guides, to plan an automobile trip, and to identify and estimate any associated costs. Students explore the costs of completing this trip using alternate modes of transportation, such as by airplane, bus, and train. By examining and evaluating the advantages and the disadvantages of these options, students justify and present a decision on the most appropriate choice for their trip. This unit connects to Indigenous education as it provides opportunities to compare and contrast various methods of traveling from their First Nation community to a destination of their choosing.

# ***Teaching/Learning Strategies***

This course is organized into an eight-week series of lessons and activities that are presented to students in remote northern communities via the internet. The eighth week is used for course consolidation, review, and the final examination. Teacher and students communicate over the internet through timely activity feedback, emails, messages, video and audio calls. Mentors in the classrooms assume the role of liaison between the teacher and student while also supporting a holistic approach to motivate, engage and support each individual student.

A variety of strategies are used in the online delivery of this course. Some instructional strategies include:

- Use of current and local information to promote relevance
- Many opportunities for student success
- Regular, constructive feedback
- Positive reinforcement to foster students' confidence in their mathematical abilities
- Opportunities for review and consolidation
- Integrated technology

Learning goals are discussed at the beginning of each assignment and success criteria is provided to students. The success criteria are used to develop the assessment tools in this course, including rubrics and checklists.

## Evaluation

The final grade will be determined as follows (Ontario Ministry of Education, 2010):

- Seventy percent 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 should be given to more recent evidence of achievement.
- Thirty percent of the grade will be based on a final evaluation administered at or towards the end of the course. This evaluation will be based on evidence from one or a combination of the following: an examination, a performance, an essay, and/or another method of evaluation suitable to the course content. The final evaluation allows the student an opportunity to demonstrate comprehensive achievement of the overall expectations for the course (p. 41).

Ontario Ministry of Education. (2010). *Growing success: Assessment, evaluation and reporting in Ontario schools*. Toronto ON: Queen's Printer for Ontario.

Type of Assessment	Category	Details	Weight (%)
Term Work (70%)	Knowledge/ Understanding	Calculate the total interest paid over the life of a personal loan Make the correct change using coins and cash from a cash payment.	13
	Thinking	Compare the effects of various payment periods on the length of time take to repay a loan and on the total interest paid Compare the unit prices of related items to help determine the best buy	19
	Communication	Describe the relationship between gross pay, net pay, and payroll deductions Describe ways of failing to operate a vehicle responsibly and possible financial and nonfinancial consequences Describe the relationship between gross pay, net pay, and payroll deductions	19

	Application	Solve problems and make decisions involving different remuneration methods and schedules Estimate the sale price before taxes when making a purchase		19
Final Evaluation (30%)	Culminating Activity (15%)	Plan and manage a band tour Investigate vehicle purchase/lease/renting options Calculate travel costs such as fuel, food, hotels Calculate income from tour, including deductions (taxes, IE, etc.) Investigate options for borrowing money to pay for new equipment Produce an investment folder	K/U	3
			T	4
			C	4
			A	4
	Exam (15%)	Solve problems from all strands of the course Compare banking options Calculate investment outcomes Calculate costs for travel, plan travel route Calculate loan costs	K/U	3
			T	4
			C	4
			A	4
<b>TOTAL</b>				<b>100</b>

## Assessment/Evaluation Strategies

A variety of assessment and evaluation methods, strategies and tools are required as appropriate to the expectation being assessed. These include diagnostic, formative, and summative within the course and within each unit.

Assessment *for* learning and assessment *as* learning is obtained through a variety of means, including the following:

- Ongoing descriptive feedback
- Self-assessment
- Peer assessment
- Mentor observations
- Conversations with student on a regular basis to verbalize observations, ask questions, and clarify understanding.

Evidence of student achievement (assessment *of* learning) is collected from various sources, including the following:

- Ongoing observations of most consistent work, with consideration given to most recent work
- Conversations with students
- Unit activities
- Culminating activity
- Exam.

The Ministry of Education's 2010 document, *Growing Success*, outlines the seven fundamental principles that guide best practice in the assessment and evaluation of students. KiHS teachers use practices that:

- are fair, transparent, and equitable for all students;
- support all students, including those with special education needs, those who are learning the language of instruction (English or French), and those who are First Nation, Métis, or Inuit;

- are carefully planned to relate to the curriculum expectations and learning goals and, as much as possible, to the interests, learning styles and preferences, needs, and experiences of all students;
- are communicated clearly to students and parents at the beginning of the course and at other points throughout the school year or course;
- are ongoing, varied in nature, and administered over a period of time to provide multiple opportunities for students to demonstrate the full range of their learning;
- provide ongoing descriptive feedback that is clear, specific, meaningful, and timely to support improved learning and achievement;
- develop students' self-assessment skills to enable them to assess their own learning, set specific goals, and plan next steps for their learning (p.6).

## **Resources**

Bank of Montreal. (n.d.). <https://www.bmo.com/main/personal>

Government of Canada. (2020, August 4). *Job bank*. <https://www.jobbank.gc.ca/home>

Government of Canada. (2019, November 27). *Canada revenue agency*. [https://www.canada.ca/en/revenue-agency/cra-canada.html?utm\\_campaign=not-applicable&utm\\_medium=redirect&utm\\_source=cra-arc.gc.ca\\_redirect](https://www.canada.ca/en/revenue-agency/cra-canada.html?utm_campaign=not-applicable&utm_medium=redirect&utm_source=cra-arc.gc.ca_redirect)

Ontario Ministry of Education. (n.d.). *Indigenous education strategy*. <http://www.edu.gov.on.ca/eng/aboriginal/>

Ontario Ministry of Education. (2004). *Guide to locally developed courses grades 9 to 12: Development and approval procedures*. <http://www.edu.gov.on.ca/eng/document/curricul/secondary/localdev/locdeve.pdf>

Ontario Ministry of Education. (2007). *The Ontario curriculum, grades 11 to 12: Mathematics*. Toronto ON: Queen's Printer for Ontario. <http://www.edu.gov.on.ca/eng/curriculum/secondary/math1112currb.pdf>

Ontario Ministry of Education. (2010). *Growing success: Assessment, evaluation and reporting in Ontario schools*. Toronto ON: Queen's Printer for Ontario. <http://www.edu.gov.on.ca/eng/policyfunding/growSuccess.pdf>

Ontario Ministry of Education. (2016). *Ontario Schools, Kindergarten to Grade 12: Policy and Program Requirements*. <http://edu.gov.on.ca/eng/document/policy/os/index.html>

Royal Bank. (n.d.). <https://www.rbcroyalbank.com/personal.html>

Toulouse, P.R. (2016). What matters in Indigenous Education: Implementing a vision committed to holism, diversity and engagement. <https://peopleforeducation.ca/wp-content/uploads/2017/07/MWM-What-Matters-in-Indigenous-Education.pdf>

## **Program Planning**

This course is offered to Indigenous students living in isolated, northern Ontario communities. It is offered by qualified teachers in a blended classroom with a balance of academic, wellness, land-based learning, local language and culture to support the success of the whole student. This course uses the internet for instruction, demonstration and research. It utilizes a student-centered semi-virtual classroom which capitalizes on the strengths of internet program delivery to minimize the disadvantages of geographic remoteness.

Students are presented with 1320 minutes of instruction/activity via the internet over the period of one week. All lessons, assignments, questions and course material is presented in this manner, with approved print materials available as a student resource in each classroom. The student and instructor communicate via the internet, while a classroom mentor (a fully qualified teacher) assists students in completing tasks in a timely manner and provides support as required.

Indigenous and local content is used throughout the course to meet students' learning needs. Opportunities for outdoor activities and land-based learning are also incorporated and students are encouraged to use local knowledge in their products. Considerations are made to the learning preferences of the student population and lessons can be adjusted for individual students as required. Opportunities have been provided for students to apply ideas and concepts encountered in this course to their lives as an individual and as a member of a First Nations community. Teachers consult the Ontario Ministry of Education policies, guidelines and important initiatives when planning a comprehensive program in this area.