

COURSE OUTLINE

School: **KEEWAYTINOOK INTERNET HIGH SCHOOL**

Department Name: Mathematics

Ministry of Education Course Title: Mathematics for Everyday Life

Grade Level: 11 Workplace Preparation

Ministry Course Code: MEL3E

Teacher's Name: Erik Tu

Developed by: Kori Ruff

Date: November 2007

Revision Date: September 2015

Developed from: The Ontario Curriculum, Grades 11 and 12: Mathematics 2007

Text: N/A

Prerequisite: Mathematics, Grade 10 , Academic or Applied

Credits: 1

Length: 110 hours

Principal's Name: Kevin Dempsey

Principal's Approval (signature)



Approval Date: September 11, 2015

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

| <i>Unit</i> | | <i>Length</i> |
|--------------------|----------------------------|----------------------|
| Unit 1 | Working for your Money | 15 hours |
| Unit 2 | Hello, Good Buy! | 12 hours |
| Unit 3 | Bank On It! | 17 hours |
| Unit 4 | Making your Money Work | 11 hours |
| Unit 5 | It's in your Best Interest | 13 hours |
| Unit 6 | You Auto Know | 17 hours |
| Unit 7 | Transportations | 13 hours |
| Unit 8 | Summative Activity | 12 hours |
| Total | | 110 hours |

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.

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.

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.

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.

Unit 7: Transportations

Students access authentic resources, e.g., automobile association, Internet, travel guides, to plan an automobile trip, and to both 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.

Unit 8: Summative Activity

In this summative unit, students create a fictitious local music band that they manage. In an effort to raise money for new band equipment, the band manager plans a tour consisting of four consecutive weekend performances. Students estimate expenses and potential revenue to anticipate profits, which determines if the tour is feasible. Particular emphasis is placed on estimating expenses related to renting and maintaining a touring vehicle, accommodation, and food, as well as projecting potential revenue from ticket sales and souvenir sales. Findings are presented in the form of an organized tour proposal summary. Critical thinking skills are demonstrated throughout the unit as student investigations result in making informed decisions and justifying choices.

Teaching/Learning Strategies

This teacher will:

- use current and local information to promote relevance;
- provide many opportunities for student success;
- provide regular, constructive feedback;
- use positive reinforcement to foster students' confidence in their mathematical abilities;
- provide review and remediation where appropriate;
- integrate technology when appropriate;
- draw from a workplace setting.

In achieving the expectations of this course, students:

- become independent and active learners;
- recognize the importance of math in the workplace and in daily life;
- investigate and explore concepts using technology;
- utilize a variety of resources to solve problems;
- become informed consumers and develop personal financial management skills;
- use estimation to judge the reasonableness of their answers;
- create a glossary of terms and add to it on an on-going basis.

Assessment and Evaluation

The final grade will be determined as follows:

- Seventy per cent 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 per cent 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.

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

| Type of Assessment | Category | Details | Weighting (%) | |
|-------------------------------|--------------------------|--|---------------|---|
| Term Work (70%) | Knowledge/ Understanding | -calculate the total interest paid over the life of a personal loan -make the correct change from an amount offered to pay a charge | 10 | |
| | Thinking/ Inquiry | -compare the effects of various payment periods on the length of time taken to repay a loan and on the total interest paid -compare the unit prices of related items to help determine the best buy | 20 | |
| | 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 non-financial consequences -describe the relationship between gross pay, net pay, and payroll deductions | 20 | |
| | Application | -solve problems and make decisions involving different remuneration methods and schedules -estimate the sale price before taxes when making a purchase | 20 | |
| Final Assessment (30%) | Culminating Activity | -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/I | 4 |
| | | | C | 4 |
| | | | A | 4 |
| | Final Exam | -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/I | 4 |
| | | | C | 4 |
| | | | A | 4 |
| TOTAL | | | 100 | |

Assessment/Evaluation Strategies

Teachers should use a variety of assessment methods to assess:

- Understanding/Knowledge through tests and quizzes;
- Thinking/Inquiry/Problem Solving through performance assessment, and projects;
- Communication through performance assessments and presentations;
- Application in familiar settings through tests, quizzes, and performance assessment.

Assessment and Evaluation tools to be used throughout the course may include:

- the four-level Achievement Chart for Mathematics;
- checklists;
- rating scales;
- marking schemes;
- anecdotal comments.

Resources

Ministry of Education, Ontario. *Growing Success, Assessment, Evaluation, and Reporting in Ontario Schools*. First Edition, Covering Grades 1 to 12, 2010

Websites

www.allcanadianjobs.com

www.cera-adrc.gc.ca

www.bmo.com

www.royalbank.ca

Software

Quattro Pro, Excel Sheets (optional)

WordPerfect, Open Office

Program Planning

This course is offered to students living in isolated northern Ontario communities which do not have access to regular high school facilities, equipment, or teachers associated with secondary education. 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 800 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 resources in each classroom. The student and instructor communicate via internet, while a classroom mentor (a fully qualified teacher) assists students in completing tasks in a timely manner and provides tutoring as required.