

Mathematics of Personal Finance

Grade 11C - MBF3C

The "Big Ideas"



This has been adapted from a document created by Myrna Ingalls.

Big Ideas

The following Big Ideas drive the Grade 11 MBF3C college course. Teaching, learning and assessment activities should be guided to shine light on these key areas.

- Demonstrate understanding of exponential growth (or decay)
- Create mathematical models of exponential growth (e.g. tables of values, graphs, equations)
- Demonstrate understanding of the nature of exponential growth as it compares to other rates of change (e.g. linear, quadratic)
- Demonstrate understanding of the relationships between simple interest, arithmetic sequences, and linear growth
- Demonstrate an understanding of the relationships between compound interest, geometric sequences, and exponential growth
- Make informed financial decisions based on a variety of factors (e.g. cost, time, risk)
- Demonstrate understanding of the costs involved in owning and operating a vehicle
- Collect, organize, manipulate and analyze data involving costs
- Create mathematical models that allow conditions to be changed easily (e.g. spreadsheet charts)
- Investigate "What If?" scenarios (changing conditions and analyzing results)
- Solve problems by selecting a tool (formula) and fitting the information from the problem into the tool
- Demonstrate understanding of how time effects the value of money

Types of Investigations

The following types of investigations support understanding of the Big Ideas.

- Compare the effects of changing conditions in various investment or savings options
- Solve problems involving annuities
- Compare various mortgages with respect to interest calculations, payment periods, payment amounts, total time, and total interest
- Investigate the cost of using a credit card
- Design an effective financial plan to facilitate the achievement of a long-term goal
- Comparing 2 or more possible scenarios on the purchasing or leasing of a new vehicle (or purchasing a used vehicle) and giving advice as to which is best
- Design a family budget and investigate the effects of changing components
- Make a justified decision based on an investigation of the relevant factors
- Investigate the type of growth (exponential, linear, quadratic) for given a set of data.

Computational, Algorithmic, and Graphing and other Skills

These skills will be needed to conduct investigations and carry out activities that involve the Big Ideas of the course.

- Sketch graphs of simple functions without technology ($y = 2x$, $y = x^2$, $y = 2^x$)
- Describe properties of exponential functions
- Identify common financial terminology
- Use spreadsheets and technology
- Evaluate numerical expressions involving negative and decimal exponents, using scientific calculators
- Use financial formulas
- Create charts and tables
- Graph relationships with technology
- Calculate and compare first differences