

High School Course Description for Consumer Mathematics

Course Title: Consumer Mathematics

Curricular Area: Mathematics

Course Number: MTH021/MTH022

Length: One year

Grade Level: 11/12

Prerequisites:

Algebra I (Pass or Concurrent enrollment)

Meets a UC a-g Requirement: No

Meets NCAA Requirement: No

Meets High School Graduation Requirement for: Mathematics

Course Description

This course is designed for students who are deficient in Mathematics credit for graduation. It is intended to help students develop into active, knowledgeable, thoughtful consumers, and to prepare them to skillfully engage in consumer activities and to understand the mathematics that underlie their choices and decision-making. Computational skills in the areas of whole numbers, fractions, decimals, percent and measurement are reviewed and taught as they apply to consumer applications. Topics to be studied include personal and home finances; transportation and housing; investments; loans and credit cards; taxation; and insurance.

Alignment This course is aligned with selections from the California Mathematic Standards for Grade Five, Grade Six, Grade Seven, and Algebra.

Instructional Materials

Required Textbook(s)

1. Practical Mathematics, Consumer Applications - Holt, Rinehart and Winston, 3d Edition, 1998.
ISBN 10: 0-03-051339-1

Supplemental Materials

1. Tax materials from the IRS available free at local libraries or www.IRS.gov.com
2. Local newspapers for want ads and sales information

Web Sites

1. www.practicalmoneyskills.com Lesson plans, activities, worksheets, and presentations on a variety of consumer topics.
2. www.moneyinstructor.com Lesson plans and worksheets on money matters.
3. www.bankofamerica.com/financialtools/index.cfm Interactive tools for decision-making.
4. www.snagajob.com Job advertisements including qualification and income.
5. www.moneyinstructor.com/wsp/printchecks.asp Printable facsimile checks and registers for practice.
6. www.mathworksheetsworld.com/math/ Free worksheets on a wide variety of math topics.
7. www.math-drills.com Free worksheets on a basic math skills.
8. www.irs.gov.com Tax documents.

Software

1. Interwrite software
2. Tax Preparation Software

High School Course Description for Consumer Mathematics

Exit Criteria

<u>Activities</u>	<u>Percentage</u>
Homework/Classwork.....	40%
Tests/Quizzes/Projects/Presentations.....	40%
Final Examination.....	<u>20%</u>
Total:	100%

Development Team

This Course of Study was first written in 2010 by: BHS/CHS Math Departments

Pacing Guide for Consumer Mathematics

First Semester: First Quarter

Week: 1: Class Basics and Expectations

Schedule balancing, pre-assessment, course expectations/syllabus, motivating students

Weeks 2-3: Paper and Pencil Calculations

Lesson 1.1 – Adding Whole Numbers and Decimals

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 1.2 – Subtracting Whole Numbers and Decimals

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 1.3 – Multiplying Whole Numbers and Decimals

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 1.4 – Dividing Whole Numbers and Decimals

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 1.5 – Fractions, Decimals, and Percents

Grade Seven - Number Sense - 1.0 Students know the properties of, and compute with, rational numbers expressed in a variety of forms:

1.3 Convert fractions to decimals and percents and use these representations in estimations, computations, and applications.

Lesson 1.6 – Finding the Percent of a Number

Grade Six - Number Sense - 1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

1.4 Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips.

Lesson 1.7 – Problem Solving Strategy: Interpreting Data From Tables and Graphs

Grade Seven - Mathematical Reasoning - 2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

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Lesson 1.8 – Mean, Median, and Mode

Grade Six - Statistics, Data Analysis, and Probability - 1.0 Students compute and analyze statistical measurements for data sets:

1.1 Compute the range, mean, median, and mode of data sets.

Review and Assessment

Weeks 4-5: Calculators and Estimation

Lesson 2.1 – Basic Operations on a Calculator

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 2.2 – Computing Mentally

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 2.3 – Estimating Sums and Differences

Grade Five - Number Sense - 1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers:

1.1 Estimate, round, and manipulate very large (e.g., millions) and very small (e.g., thousandths) numbers.

Lesson 2.4 – Estimating Products and Quotients

Grade Five - Number Sense - 1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers:

1.1 Estimate, round, and manipulate very large (e.g., millions) and very small (e.g., thousandths) numbers.

Lesson 2.5 – Estimating with Mixed Numbers

Grade Five - Number Sense - 1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers:

1.1 Estimate, round, and manipulate very large (e.g., millions) and very small (e.g., thousandths) numbers.

Lesson 2.6 – Uses of Estimation

Grade Five - Number Sense - 1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers:

1.1 Estimate, round, and manipulate very large (e.g., millions) and very small (e.g., thousandths) numbers.

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Lesson 2.7 – Problem Solving Strategy: Which Way to Compute

Grade Five - Number Sense - 1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers:

1.1 Estimate, round, and manipulate very large (e.g., millions) and very small (e.g., thousandths) numbers.

Review and Assessment

Weeks 6-7: Part-Time and Summer Jobs

Lesson 3.1 – Finding a Job

Algebra 1 -- 5.0 Students solve multistep problems, including word problems, involving linear equations and linear inequalities in one variable and provide justification for each step

Lesson 3.2 – Computing Pay

Algebra 1 -- 5.0 Students solve multistep problems, including word problems, involving linear equations and linear inequalities in one variable and provide justification for each step

Lesson 3.3 –Tips

Grade Six - Number Sense - 1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

1.4 Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips.

Lesson 3.4 –Social Security

Grade Six - Number Sense - 1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

1.4 Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips.

Lesson 3.5 – Guessing and Checking

Grade Six - Mathematical Reasoning - 2.0 Students use strategies, skills, and concepts in finding solutions:

2.7 Make precise calculations and check the validity of the results from the context of the problem.

Lesson 3.6 – Decision Making: Investigating Want Ads

Grade Seven - Mathematical Reasoning - 1.0 Students make decisions about how to approach problems:

1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.

Review and Assessment

Pacing Guide for Consumer Mathematics

Weeks 8-9: Full-Time Work

Lesson 4.1 – Hourly Wages and Overtime Pay

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 4.2 – Time Sheets and Time Cards

Grade Seven - Mathematical Reasoning - 2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Lesson 4.3 – Salary

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 4.4 – Piecework

Grade Seven - Algebra and Functions - 4.0 Students solve simple linear equations and inequalities over the rational numbers:

4.2 Solve multi step problems involving rate, average speed, distance, and time or a direct variation.

Lesson 4.5 – Commission

Grade Six - Number Sense - 1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

1.4 Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips.

Lesson 4.6 – Payroll Deductions and Net Pay

Algebra 1 - 4.0 Students simplify expressions before solving linear equations and inequalities in one variable, such as $3(2x-5) + 4(x-2) = 12$.

Lesson 4.7 – Health Insurance

Grade Six - Number Sense - 1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

1.4 Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips.

Lesson 4.8 – Life Insurance

Grade Six - Algebra and Functions - 2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:

2.3 Solve problems involving rates, average speed, distance, and time.

Lesson 4.9 – Decision Making: Buying Insurance

Grade Six - Algebra and Functions - 2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:

2.3 Solve problems involving rates, average speed, distance, and time.

Review and Assessment

First Semester: Second Quarter

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Week 10: Recreation and Sports

Lesson 5.1 – Going to Movies and Shows

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 5.2 – Going to Parks and Sports Events

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 5.3 – Hobbies

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 5.4 – Sports Equipment and Fees

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 5.5 – Health Clubs and Fitness Classes

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 5.6 – Interpreting Remainders

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 5.7 – Decision Making: Selecting a Sport

Grade Six - Algebra and Functions - 2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:

2.3 Solve problems involving rates, average speed, distance, and time.

Review and Assessment

Pacing Guide for Consumer Mathematics

Weeks 11-12: Basic Purchases

Lesson 6.1 – Buying Audio and Video

Grade Seven - Number Sense - 1.0 Students know the properties of, and compute with, rational numbers expressed in a variety of forms:

1.7 Solve problems that involve discounts, markups, commissions, and profit and compute simple and compound interest

Lesson 6.2 – Buying Clothes

Grade Seven - Number Sense - 1.0 Students know the properties of, and compute with, rational numbers expressed in a variety of forms:

1.7 Solve problems that involve discounts, markups, commissions, and profit and compute simple and compound interest

Lesson 6.3 – Sales Tax

Grade Seven - Number Sense - 1.0 Students know the properties of, and compute with, rational numbers expressed in a variety of forms:

1.7 Solve problems that involve discounts, markups, commissions, and profit and compute simple and compound interest

Lesson 6.4 – Catalog Shopping

Grade Six - Algebra and Functions - 2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:

2.3 Solve problems involving rates, average speed, distance, and time.

Lesson 6.5 – Buying Food

Grade Six - Algebra and Functions - 2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:

2.3 Solve problems involving rates, average speed, distance, and time.

Lesson 6.6 – Eating in a Restaurant

Grade Seven - Algebra and Functions - 4.0 Students solve simple linear equations and inequalities over the rational numbers:

4.2 Solve multi step problems involving rate, average speed, distance, and time or a direct variation.

Lesson 6.7 – Decision Making: Comparing Food Costs

Grade Five - Number Sense - 1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers:

1.1 Estimate, round, and manipulate very large (e.g., millions) and very small (e.g., thousandths) numbers.

Review and Assessment

Weeks 13-14: Checking and Savings Accounts

Lesson 7.1 – Checking Accounts

Grade Five - Number Sense - 1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers:

1.1 Estimate, round, and manipulate very large (e.g., millions) and very small (e.g., thousandths) numbers.

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Lesson 7.2 – Reconciling a Checking Account Statement

Grade Five - Number Sense - 1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers:

1.1 Estimate, round, and manipulate very large (e.g., millions) and very small (e.g., thousandths) numbers.

Lesson 7.3 – Savings Accounts

Grade Five - Number Sense - 1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers:

1.1 Estimate, round, and manipulate very large (e.g., millions) and very small (e.g., thousandths) numbers.

Lesson 7.4 – Simple and Compound Interest

Grade Seven - Number Sense - 1.0 Students know the properties of, and compute with, rational numbers expressed in a variety of forms:

1.7 Solve problems that involve discounts, markups, commissions, and profit and compute simple and compound interest.

Lesson 7.5 – Decision Making: Which Bank Account Is Best?

Grade Seven - Mathematical Reasoning - 2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Review and Assessment

Weeks 15-16: Credit

Lesson 8.1 – Using Credit Cards

Grade Five - Number Sense - 1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers:

1.1 Estimate, round, and manipulate very large (e.g., millions) and very small (e.g., thousandths) numbers.

Lesson 8.2 – Credit Finance Charges

Grade Seven - Algebra and Functions - 4.0 Students solve simple linear equations and inequalities over the rational numbers:

4.2 Solve multi step problems involving rate, average speed, distance, and time or a direct variation.

Lesson 8.3 – Overdraft Checking

Grade Seven - Algebra and Functions - 4.0 Students solve simple linear equations and inequalities over the rational numbers:

4.2 Solve multi step problems involving rate, average speed, distance, and time or a direct variation.

Lesson 8.4 – Taking Out a Loan

Grade Six - Algebra and Functions - 2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:

2.3 Solve problems involving rates, average speed, distance, and time.

Pacing Guide for Consumer Mathematics

Lesson 8.5 – Installment Buying

Grade Five - Number Sense - 1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers:

1.1 Estimate, round, and manipulate very large (e.g., millions) and very small (e.g., thousandths) numbers.

Lesson 8.6 – Finding a Pattern

Grade Seven - Mathematical Reasoning - 1.0 Students make decisions about how to approach problems:

1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.

Lesson 8.7 – Decision Making: Which Bank Account is Best?

Grade Seven - Mathematical Reasoning - 1.0 Students make decisions about how to approach problems:

1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.

Review and Assessment

Weeks 17-18: Automobile Expenses

Lesson 9.1 – Buying a Car

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 9.2 – Automobile Loans

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 9.3 – Automobile Operating Expenses

Grade Six - Algebra and Functions - 2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:

2.3 Solve problems involving rates, average speed, distance, and time.

Lesson 9.4 – Automobile Insurance

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 9.5 – Renting a Car

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 9.6 – Decision Making: Choosing a New Car

Pacing Guide for Consumer Mathematics

Grade Seven - Mathematical Reasoning - 2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Review and Assessment

Week 19: Semester Final Examinations

Review and Semester Final Examinations

Second Semester: Third Quarter

Weeks 1-2: Transportation

Lesson 10.1 – Estimating Distances and Travel Times

Grade Seven - Mathematical Reasoning - 2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Lesson 10.2 – Problem Solving Strategy: Using a Map

Grade Six - Algebra and Functions - 2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:

2.3 Solve problems involving rates, average speed, distance, and time.

Lesson 10.3 – Bus and Train Travel

Grade Three - Measurement and Geometry - 1.0 Students choose and use appropriate units and measurement tools to quantify the properties of objects:

1.4 Carry out simple unit conversions within a system of measurement (e.g., centimeters and meters, hours and minutes).

Lesson 10.4 – Air Travel

Grade Seven - Mathematical Reasoning - 2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Lesson 10.5 – Using Subways

Grade Seven - Mathematical Reasoning - 2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Lesson 10.6 – Taxi Fares

Grade Six - Algebra and Functions - 2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:

2.3 Solve problems involving rates, average speed, distance, and time.

Lesson 10.7 – Determining the Cost of a Trip

Grade Six - Algebra and Functions - 2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:

2.3 Solve problems involving rates, average speed, distance, and time.

Lesson 10.8 – Decision Making: The Most Economical Way to Travel

Pacing Guide for Consumer Mathematics

Grade Seven - Mathematical Reasoning - 2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Review and Assessment

Weeks 3-5: Taxes

Lesson 11.1 – Reporting Income

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 11.2 – Federal Income Taxes

Grade Seven - Mathematical Reasoning - 2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Lesson 11.3 – Using Form 1040EZ

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 11.4 – Itemized Deductions

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 11.5 – State and City Income Taxes

Grade Seven - Number Sense - 1.0 Students know the properties of, and compute with, rational numbers expressed in a variety of forms:

1.7 Solve problems that involve discounts, markups, commissions, and profit and compute simple and compound interest.

Lesson 11.6 – Problem Solving Strategy: Projecting Estimates

Grade Five - Number Sense - 1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers:

1.1 Estimate, round, and manipulate very large (e.g., millions) and very small (e.g., thousandths) numbers.

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Lesson 11.7 – Decision Making: Choosing the Correct Tax Form

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Review and Assessment

Weeks 6-7: Housing

Lesson 12.1 – Renting an Apartment

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 12.2 – Buying a House

Grade Six - Algebra and Functions - 2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:

2.3 Solve problems involving rates, average speed, distance, and time.

Lesson 12.3 – Buying a Condominium

Grade Five - Number Sense - 1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers:

1.1 Estimate, round, and manipulate very large (e.g., millions) and very small (e.g., thousandths) numbers.

Lesson 12.4 – Getting a Mortgage

Grade Six - Algebra and Functions - 2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:

2.3 Solve problems involving rates, average speed, distance, and time.

Lesson 12.5 – Real Estate Taxes

Grade Six - Algebra and Functions - 2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:

2.3 Solve problems involving rates, average speed, distance, and time.

Lesson 12.6 – Homeowner’s Insurance

Grade Six - Algebra and Functions - 2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:

2.3 Solve problems involving rates, average speed, distance, and time.

Lesson 12.7 – Utilities

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Pacing Guide for Consumer Mathematics

Lesson 12.8 – Decorating and Remodeling

Grade Seven - Measurement and Geometry - 2.0 Students compute the perimeter, area, and volume of common geometric objects and use the results to find measures of less common objects. They know how perimeter, area, and volume are affected by changes of scale:

2.1 Use formulas routinely for finding the perimeter and area of basic two-dimensional figures and the surface area and volume of basic three-dimensional figures, including rectangles, parallelograms, trapezoids, squares, triangles, circles, prisms, and cylinders.

Lesson 12.9 – Decision Making: Choosing a Mortgage

Grade Six - Algebra and Functions - 2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:

2.3 Solve problems involving rates, average speed, distance, and time.

Review and Assessment

Weeks 8-9: Career Fields

Lesson 13.1 – Carpentry

Grade Seven - Measurement and Geometry - 2.0 Students compute the perimeter, area, and volume of common geometric objects and use the results to find measures of less common objects. They know how perimeter, area, and volume are affected by changes of scale:

2.1 Use formulas routinely for finding the perimeter and area of basic two-dimensional figures and the surface area and volume of basic three-dimensional figures, including rectangles, parallelograms, trapezoids, squares, triangles, circles, prisms, and cylinders.

Lesson 13.2 – Plumbing

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.3 Solve simple problems, including ones arising in concrete situations, involving the addition and subtraction of fractions and mixed numbers (like and unlike denominators of 20 or less), and express answers in the simplest form.

Lesson 13.3 – Electrical Contracting

Grade Five - Number Sense - 1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers:

1.1 Estimate, round, and manipulate very large (e.g., millions) and very small (e.g., thousandths) numbers.

Lesson 13.4 – Painting

Grade Seven - Measurement and Geometry - 2.0 Students compute the perimeter, area, and volume of common geometric objects and use the results to find measures of less common objects. They know how perimeter, area, and volume are affected by changes of scale:

2.1 Use formulas routinely for finding the perimeter and area of basic two-dimensional figures and the surface area and volume of basic three-dimensional figures, including rectangles, parallelograms, trapezoids, squares, triangles, circles, prisms, and cylinders.

Lesson 13.5 – Masonry

Pacing Guide for Consumer Mathematics

Grade Seven - Measurement and Geometry - 2.0 Students compute the perimeter, area, and volume of common geometric objects and use the results to find measures of less common objects. They know how perimeter, area, and volume are affected by changes of scale:

2.1 Use formulas routinely for finding the perimeter and area of basic two-dimensional figures and the surface area and volume of basic three-dimensional figures, including rectangles, parallelograms, trapezoids, squares, triangles, circles, prisms, and cylinders.

Lesson 13.6 – Problem Solving Strategy: Drawing a Diagram

Grade Seven - Measurement and Geometry - 2.0 Students compute the perimeter, area, and volume of common geometric objects and use the results to find measures of less common objects. They know how perimeter, area, and volume are affected by changes of scale:

2.1 Use formulas routinely for finding the perimeter and area of basic two-dimensional figures and the surface area and volume of basic three-dimensional figures, including rectangles, parallelograms, trapezoids, squares, triangles, circles, prisms, and cylinders.

Lesson 13.7 – Decision Making: Quality and Quantity vs. Price

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 14.1 – Advertising

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Lesson 14.2 – Sales

Grade Seven - Mathematical Reasoning - 2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Lesson 14.3 – Travel

Grade Six - Algebra and Functions - 2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:

2.1 Convert one unit of measurement to another (e.g., from feet to miles, from centimeters to inches).

Lesson 14.4 – Manufacturing

Grade Six - Number Sense - 1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

1.3 Use proportions to solve problems (e.g., determine the value of N if $4/7 = N/21$, find the length of a side of a polygon similar to a known polygon). Use cross-multiplication as a method for solving such problems, understanding it as the multiplication of both sides of an equation by a multiplicative inverse.

Pacing Guide for Consumer Mathematics

Lesson 14.5 – Health Care

Grade Six - Number Sense - 1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

1.3 Use proportions to solve problems (e.g., determine the value of N if $4/7 = N/21$, find the length of a side of a polygon similar to a known polygon). Use cross-multiplication as a method for solving such problems, understanding it as the multiplication of both sides of an equation by a multiplicative inverse.

Lesson 14.6 – Communications

Grade Three - Measurement and Geometry - 1.0 Students choose and use appropriate units and measurement tools to quantify the properties of objects:

1.4 Carry out simple unit conversions within a system of measurement (e.g., centimeters and meters, hours and minutes).

Lesson 14.7 – Decision Making: Evaluating Raises and Promotions

Grade Seven - Mathematical Reasoning - 2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Review and Assessment

Second Semester: Fourth Quarter

Weeks 10-11: Personal Finance

Lesson 15.1 – Purchasing Power

Grade Six - Algebra and Functions - 2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:

2.3 Solve problems involving rates, average speed, distance, and time.

Lesson 15.2 – Fixed and Variable Expenses

Grade Six - Statistics, Data Analysis, and Probability - 1.0 Students compute and analyze statistical measurements for data sets:

1.1 Compute the range, mean, median, and mode of data sets.

Lesson 15.3 – Budgeting Expenses

Grade Seven - Mathematical Reasoning - 2.0 Students use strategies, skills, and concepts in finding solutions:

2.2 Apply strategies and results from simpler problems to more complex problems.

Lesson 15.4 – The Costs of Raising a Family

Grade Seven - Mathematical Reasoning - 2.0 Students use strategies, skills, and concepts in finding solutions:

2.2 Apply strategies and results from simpler problems to more complex problems.

Lesson 15.5 – Determining Net Worth

Grade Five - Number Sense - 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results

Pacing Guide for Consumer Mathematics

Lesson 15.6 – Decision Making: Adjusting a Budget

Grade Seven - Mathematical Reasoning - 2.0 Students use strategies, skills, and concepts in finding solutions:

2.2 Apply strategies and results from simpler problems to more complex problems.

Review and Assessment

Weeks 12-13: Investments

Lesson 16.1 – U.S. Savings Bonds

Grade Six - Number Sense - 1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

1.4 Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips.

Lesson 16.2 – Certificates of Deposit

Grade Six - Number Sense - 1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

1.4 Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips.

Lesson 16.3 – Corporate Stocks

Grade Seven - Number Sense - 1.0 Students know the properties of, and compute with, rational numbers expressed in a variety of forms:

1.7 Solve problems that involve discounts, markups, commissions, and profit and compute simple and compound interest

Lesson 16.4 – Corporate and Municipal Bonds

Grade Six - Number Sense - 1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

1.4 Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips.

Lesson 16.5 – Mutual Funds

Grade Six - Number Sense - 1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

1.4 Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips.

Lesson 16.6 – Pensions Plans

Grade Seven - Mathematical Reasoning - 2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Lesson 16.7 – Problem Solving Strategy: Working Backward

Grade Six - Algebra and Functions - 1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results:

1.2 Write and evaluate an algebraic expression for a given situation, using up to three variables.

Pacing Guide for Consumer Mathematics

Lesson 16.8 – Decision Making: Buying Stocks

Grade Seven - Mathematical Reasoning - 2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Review and Assessment

Week 14-15: Probability

Lesson 17.1 – Simple Probability

Grade Six - Statistics, Data Analysis, and Probability - 3.0 Students determine theoretical and experimental probabilities and use these to make predictions about events:

3.3 Represent probabilities as ratios, proportions, decimals between 0 and 1, and percentages between 0 and 100 and verify that the probabilities computed are reasonable; know that if P is the probability of an event, $1 - P$ is the probability of an event not occurring.

Lesson 17.2 – Sample Space

Grade Six - Statistics, Data Analysis, and Probability - 3.0 Students determine theoretical and experimental probabilities and use these to make predictions about events:

3.1 Represent all possible outcomes for compound events in an organized way (e.g., tables, grids, tree diagrams) and express the theoretical probability of each outcome.

Lesson 17.3 – Independent Events

Probability and Statistics - 1.0 Students know the definition of the notion of independent events and can use the rules for addition, multiplication, and complementation to solve for probabilities of particular events in finite sample spaces.

Lesson 17.4 – Dependent Events

Probability and Statistics - 1.0 Students know the definition of the notion of independent events and can use the rules for addition, multiplication, and complementation to solve for probabilities of particular events in finite sample spaces.

Lesson 17.5 – Making Predictions

Grade Six - Statistics, Data Analysis, and Probability - 3.0 Students determine theoretical and experimental probabilities and use these to make predictions about events:

3.2 Use data to estimate the probability of future events (e.g., batting averages or number of accidents per mile driven).

Lesson 17.6 – Problem Solving Strategy: Making and Organized List

Grade Six - Statistics, Data Analysis, and Probability - 3.0 Students determine theoretical and experimental probabilities and use these to make predictions about events:

3.1 Represent all possible outcomes for compound events in an organized way (e.g., tables, grids, tree diagrams) and express the theoretical probability of each outcome.

Review and Assessment

Week 16-17: Equations

Pacing Guide for Consumer Mathematics

Lesson 18.1 – Order of Operations

Grade Seven - Algebra and Functions - 1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results:

1.2 Write and evaluate an algebraic expression for a given situation, using up to three variables.

Lesson 18.2 – Expressions and Equations

Grade Six - Algebra and Functions - 1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results:

1.2 Write and evaluate an algebraic expression for a given situation, using up to three variables.

Lesson 18.3 – Evaluating Expressions and Formulas

Grade Six - Algebra and Functions - 1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results:

1.3 Apply algebraic order of operations and the commutative, associative, and distributive properties to evaluate expressions; and justify each step in the process.

Lesson 18.4 – Solving Addition and Subtraction Equations

Grade Six - Algebra and Functions - 1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results:

1.1 Write and solve one-step linear equations in one variable.

Lesson 18.5 – Solving Multiplication and Division Equations

Grade Six - Algebra and Functions - 1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results:

1.1 Write and solve one-step linear equations in one variable.

Lesson 18.6 – Solving 2-Step Equations

Grade Seven - Algebra and Functions - 4.0 Students solve simple linear equations and inequalities over the rational numbers:

4.1 Solve two-step linear equations and inequalities in one variable over the rational numbers, interpret the solution or solutions in the context from which they arose, and verify the reasonableness of the results.

Lesson 18.7 – Problem Solving Strategy: Solving a Simpler Problem

Grade Six - Algebra and Functions - 1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results:

1.4 Solve problems manually by using the correct order of operations or by using a scientific calculator..

Review and Assessment

Weeks 18- 19: Final Examinations

Review and Semester Final Examinations

Instructional Guides for Consumer Mathematics

Learning Experiences and Instruction

This course will be taught using a variety of instructional methods and “realistic, consumer-oriented applications”. Students will be taught directly via an auditory and visual approach through lecture and note-taking. Indirect instruction via an auditory and visual approach will be presented through the use of multimedia presentations as well as technological presentations. Teachers will use technology and manipulatives to assist students who require a more kinesthetic teaching approach for success. Students will be given homework and projects so they can work at home independently.

Students will not only be expected to work individually, but cooperatively as well. Group oral/visual representations will also be required of students during the school year. Most lessons will be taught in the context of real life situations where these students will later encounter the need to use mathematics for both work and their personal lives. Teachers may bring real-life supporting materials to class (e.g., checkbooks, bank statements, tax forms, etc.) to increase relevance of the lessons to students lives outside school.

Technology Integration to Advance Instruction and Student Comprehension:

- Calculators will be used when appropriate to advance understanding and ease calculations.
- Applicable internet applications (see “Instructional Materials”)
- Lessons may be presented using Interwrite technology.
- Teacher may integrate relevant videos from Youtube and other sources by lesson as available.

Support for English Language Learners:

Teachers will supplement with universal access materials from SB 472 training including word walls, visual aides, and graphic organizers. Additional instruction in academic and content vocabulary is provided to increase access to rigorous curriculum for limited English speakers.

Support for Special Education Students:

Teachers will supplement with universal access materials from SB 472 training including word walls, visual aides, and graphic organizers. Core teacher collaboration with Resource Teacher on assessment, progress reporting, and semester grades is required.

GATE Students:

GATE students enrolled in this course will not have not had success in other mathematic courses, hence, special considerations for GATE students should not be necessary.