



## **Consumer Mathematics – Part 2**

### Michigan State Mathematics Content Expectations

#### **Course Description**

Consumer Mathematics Part 2 is a comprehensive course focusing on consumer applications of math. It includes problem-solving strategies and alternate methods of computation to solve a wide range of consumer problems, and it also employs basic math skills.

#### **Text Book**

Consumer Mathematics – Kathleen M. Harmeyer (AGS Publishing 2003)

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#### **Unit 1 Description**

This unit will explore home improvements and how people make their homes inviting and attractive inside and out. Students will calculate the expenses of common home improvements.

#### **Essential Content and Skills**

The learner will:

- Analyze discounted items.
  - Explore the 90-day purchase plan.
  - Find the perimeter and area of regular figures.
  - Find the area of a surface to be painted.
  - Find the amount of paint needed to cover an area.
  - Compute the total cost of paint purchased in quarts and gallons.
  - Compute the number of double rolls of wallpaper needed.
  - Compute the cost of covering a floor, given the room dimensions and unit cost.
  - Use the perimeter of a room to determine the amount of molding needed.
  - Estimate the cost of carpeting by area and cost per square yard.
  - Compute the cost of building an addition.
  - Find the cost per square foot of insulation.
  - Compute the amount and cost of grass seed required to seed a given area.
  - Compute the annual cost of fertilizing a lawn.
  - Find the amount of fencing required to enclose a given lot.
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#### **Unit 1 Michigan State Content Expectations**

[Click here to view the Michigan DOE Curriculum Content Standards.](#)

## Course Name - Part

Michigan State Curriculum Content Standards (continued)

### Unit 1 Lesson 1: Buying Furniture and Appliances and 90 day Purchase Plan

State Standard	Description
N.FL.05.20	Solve applied problems involving fractions and decimals; include rounding of answers and checking reasonableness. Solve applied problems that use the four operations with appropriate decimal numbers.
N.FL.06.15	

### Unit 1 Lesson 2: The Key to Perimeter and Area

State Standard	Description
M.TE.04.06	Know and understand the formulas for perimeter and area of a square and a rectangle; calculate the perimeters and areas of these shapes and combinations of these shapes using the formulas. Understand the definition of a circle; know and use the formulas for circumference and area of a circle to solve problems.
G.SR.08.03	

### Unit 1 Lesson 3: Painting a Room and Buying Paint and Wallpaper

State Standard	Description
M.TE.04.06	Know and understand the formulas for perimeter and area of a square and a rectangle; calculate the perimeters and areas of these shapes and combinations of these shapes using the formulas. Understand and know how to use the area formula for a parallelogram: $A = bh$ , and represent using models and manipulatives. Solve applied problems that use the four operations with appropriate decimal numbers. Compute the volume and surface area of cubes and rectangular prisms given the lengths of their sides, using formulas. Understand the concept of surface area, and find the surface area of prisms, cones, spheres, pyramids, and cylinders.
M.TE.05.07	
N.FL.06.15	
G.SR.08.06	
G.SR.08.07	

### Unit 1 Lesson 4: Covering the Floor

State Standard	Description
M.TE.04.06	Know and understand the formulas for perimeter and area of a square and a rectangle; calculate the perimeters and areas of these shapes and combinations of these shapes using the formulas. Solve applied problems that use the four operations with appropriate decimal numbers.
N.FL.06.15	

### Unit 1 Lesson 5: Computing Length of Molding

State Standard	Description
M.TE.04.06	Know and understand the formulas for perimeter and area of a square and a rectangle; calculate the perimeters and areas of these shapes and combinations of these shapes using the formulas. Solve applied problems that use the four operations with appropriate decimal numbers.
N.FL.06.15	

## Course Name - Part

Michigan State Curriculum Content Standards (continued)

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### Unit 1 Lesson 6: Wall-to-Wall Carpeting

State Standard	Description
M.TE.04.06	Know and understand the formulas for perimeter and area of a square and a rectangle; calculate the perimeters and areas of these shapes and combinations of these shapes using the formulas. Solve applied problems that use the four operations with appropriate decimal numbers.
N.FL.06.15	

### Unit 1 Lesson 7: Additions to Existing Homes

State Standard	Description
M.TE.04.06	Know and understand the formulas for perimeter and area of a square and a rectangle; calculate the perimeters and areas of these shapes and combinations of these shapes using the formulas. Solve applied problems that use the four operations with appropriate decimal numbers.
N.FL.06.15	

### Unit 1 Lesson 8: Insulation

State Standard	Description
M.TE.04.06	Know and understand the formulas for perimeter and area of a square and a rectangle; calculate the perimeters and areas of these shapes and combinations of these shapes using the formulas. Solve applied problems that use the four operations with appropriate decimal numbers.
N.FL.06.15	

### Unit 1 Lesson 9: Seeding and Feeding a Yard

State Standard	Description
M.TE.04.06	Know and understand the formulas for perimeter and area of a square and a rectangle; calculate the perimeters and areas of these shapes and combinations of these shapes using the formulas. Solve applied problems that use the four operations with appropriate decimal numbers.
N.FL.06.15	

### Unit 1 Lesson 10: Fencing a Yard

State Standard	Description
M.TE.04.06	Know and understand the formulas for perimeter and area of a square and a rectangle; calculate the perimeters and areas of these shapes and combinations of these shapes using the formulas. Solve applied problems that use the four operations with appropriate decimal numbers.
N.FL.06.15	

## Course Name - Part

Michigan State Curriculum Content Standards (continued)

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### Unit 2 Description

This unit will explore how to use tools that travelers need and how to compute travel expenses.

### Essential Content and Skills

The learner will:

Read information from a map.

Interpret a map legend.

Find the distance between given locations.

Use a map scale to estimate distances between locations.

Use a mileage map to find the shortest distance between cities.

Identify how to read a bus schedule.

Interpret a bus rate chart.

Calculate the bus fare for a trip.

Calculate the total cost of renting a hotel room.

Calculate the cost of a package plan.

Convert U.S. dollars to currency of other countries and vice versa.

Use a rate chart to compare the costs of renting cars of various sizes.

Compute parking costs.

Analyze a time zone map.

Use information on a flight schedule to calculate flight times.

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### Unit 2 Michigan State Content Expectations

#### Unit 2 Lesson 1: Reading a Map

State Standard	Description
4G1.0.2	Use cardinal and intermediate directions to describe the relative location of significant places in the United States.

#### Unit 2 Lesson 2: Estimating Distances

State Standard	Description
M.TE.04.05	Carry out the following conversions from one unit of measure to a larger or smaller unit of measure: meters to centimeters, kilograms to grams, liters to milliliters, hours to minutes, minutes to seconds, years to months, weeks to days, feet to inches, ounces to pounds (using numbers that involve only simple calculations).

#### Unit 2 Lesson 3: Reading a Bus Schedule

State Standard	Description
D.RE.04.03	Solve problems using data presented in tables and bar graphs, e.g., compare data represented in two bar graphs and read bar graphs showing two data sets.
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

## Course Name - Part

Michigan State Curriculum Content Standards (continued)

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### Unit 2 Lesson 4: Computing Bus Fares

State Standard	Description
D.RE.04.03	Solve problems using data presented in tables and bar graphs, e.g., compare data represented in two bar graphs and read bar graphs showing two data sets.
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

### Unit 2 Lesson 5: Staying in Hotels and Package Plans

State Standard	Description
D.RE.04.03	Solve problems using data presented in tables and bar graphs, e.g., compare data represented in two bar graphs and read bar graphs showing two data sets.
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

### Unit 2 Lesson 6: Exchanging Currency

State Standard	Description
D.RE.04.03	Solve problems using data presented in tables and bar graphs, e.g., compare data represented in two bar graphs and read bar graphs showing two data sets.
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

### Unit 2 Lesson 7: Renting a Car

State Standard	Description
D.RE.04.03	Solve problems using data presented in tables and bar graphs, e.g., compare data represented in two bar graphs and read bar graphs showing two data sets.
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

### Unit 2 Lesson 8: Parking Expenses

State Standard	Description
D.RE.04.03	Solve problems using data presented in tables and bar graphs, e.g., compare data represented in two bar graphs and read bar graphs showing two data sets.
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

## Course Name - Part

Michigan State Curriculum Content Standards (continued)

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### Unit 2 Lesson 9: Time Zones

State Standard	Description
4-G2.0.1	Describe ways in which the United States can be divided into different regions (e.g., political regions, economic regions, landform regions, vegetation regions).

### Unit 2 Lesson 10: Traveling By Air

State Standard	Description
D.RE.04.03	Solve problems using data presented in tables and bar graphs, e.g., compare data represented in two bar graphs and read bar graphs showing two data sets.
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

## Course Name - Part

Michigan State Curriculum Content Standards (continued)

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### Unit 3 Description

This unit will explore budgeting money and paying taxes. Students will prepare, adjust, and balance a budget and plan a financial future. Also, students will compute income and property taxes.

### Essential Content and Skills

The learner will:

- Find average monthly income.
- Identify how to prepare, adjust, and balance a budget.
- Prepare, adjust, and balance a budget.
- Write large numbers and compare their values.
- Analyze the federal budget.
- Calculate total exemptions, deductions, and taxable income.
- Read a tax table.
- Use a tax schedule.
- Compute the tax balance due or the amount to be refunded.
- Compute the effective tax rate.

### Unit 3 Michigan State Content Expectations

#### Unit 3 Lesson 1: Finding Average Income

State Standard	Description
D.AN.05.03	Given a set of data, find and interpret the mean (using the concept of fair share) and mode.
D.AN.05.05	Solve multi-step problems involving means.

#### Unit 3 Lesson 2: Preparing, Adjusting, and Balancing a Budget

State Standard	Description
D.RE.04.01	Construct tables and bar graphs from given data.
D.RE.04.03	Solve problems using data presented in tables and bar graphs, e.g., compare data represented in two bar graphs and read bar graphs showing two data sets.
N.FL.05.20	Solve applied problems involving fractions and decimals; include rounding of answers and checking reasonableness.
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

#### Unit 3 Lesson 3: Using Circle Graphs

State Standard	Description
D.RE.07.01	Represent and interpret data using circle graphs, stem and leaf plots, histograms, and box-and-whisker plots, and select appropriate representation to address specific questions.

## Course Name - Part

Michigan State Curriculum Content Standards (continued)

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### Unit 3 Lesson 4: The Key to Large Numbers

State Standard	Description
N.ME.04.01	Read and write numbers to 1,000,000; relate them to the quantities they represent; compare and order.
N.ME.04.02	Compose and decompose numbers using place value to 1,000,000's, e.g., 25,068 is 2 ten thousands, 5 thousands, 0 hundreds, 6 tens, and 8 ones.
N.ME.04.03	Understand the magnitude of numbers up to 1,000,000; recognize the place values of numbers and the relationship of each place value to the place to its right, e.g., 1,000 is 10 hundreds.

### Unit 3 Lesson 5: The Federal Budget

State Standard	Description
D.RE.04.01	Construct tables and bar graphs from given data.
D.RE.04.03	Solve problems using data presented in tables and bar graphs, e.g., compare data represented in two bar graphs and read bar graphs showing two data sets.
N.FL.05.20	Solve applied problems involving fractions and decimals; include rounding of answers and checking reasonableness.
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

### Unit 3 Lesson 6: Paying Taxes

State Standard	Description
D.RE.04.01	Construct tables and bar graphs from given data.
D.RE.04.03	Solve problems using data presented in tables and bar graphs, e.g., compare data represented in two bar graphs and read bar graphs showing two data sets.
N.FL.05.20	Solve applied problems involving fractions and decimals; include rounding of answers and checking reasonableness.
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

### Unit 3 Lesson 7: Reading a Tax Table and Using a Tax Schedule

State Standard	Description
D.RE.04.01	Construct tables and bar graphs from given data.
D.RE.04.03	Solve problems using data presented in tables and bar graphs, e.g., compare data represented in two bar graphs and read bar graphs showing two data sets.
N.FL.05.20	Solve applied problems involving fractions and decimals; include rounding of answers and checking reasonableness.
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

### Unit 3 Lesson 8: Refund or Balance Due

## Course Name - Part

Michigan State Curriculum Content Standards (continued)

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State Standard	Description
D.RE.04.01 D.RE.04.03	Construct tables and bar graphs from given data. Solve problems using data presented in tables and bar graphs, e.g., compare data represented in two bar graphs and read bar graphs showing two data sets.
N.FL.05.20	Solve applied problems involving fractions and decimals; include rounding of answers and checking reasonableness.
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

### Unit 3 Lesson 9: Property Tax

State Standard	Description
D.RE.04.01 D.RE.04.03	Construct tables and bar graphs from given data. Solve problems using data presented in tables and bar graphs, e.g., compare data represented in two bar graphs and read bar graphs showing two data sets.
N.FL.05.20	Solve applied problems involving fractions and decimals; include rounding of answers and checking reasonableness.
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

### Unit 3 Lesson 10: Effective Tax Rate

State Standard	Description
D.RE.04.01 D.RE.04.03	Construct tables and bar graphs from given data. Solve problems using data presented in tables and bar graphs, e.g., compare data represented in two bar graphs and read bar graphs showing two data sets.
N.FL.05.20	Solve applied problems involving fractions and decimals; include rounding of answers and checking reasonableness.
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

## Course Name - Part

Michigan State Curriculum Content Standards (continued)

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### Unit 4 Description

This unit will explore mathematical skills required to understand banking and investing.

### Essential Content and Skills

The learner will:

- Compute simple interest.
- Compute compound interest.
- Analyze how to double your money.
- Identify how to write a personal check.
- Analyze how to keep a checking account up-to-date.
- Identify how to reconcile a checking account.
- Analyze the stock market.
- Compute the percentage of increase or decrease of an investment.
- Analyze dividends.
- Explore using credit and debit cards.

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### Unit 4 Michigan State Content Expectations

#### Unit 4 Lesson 1: Simple Interest

State Standard	Description
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

#### Unit 4 Lesson 2: Compound Interest

State Standard	Description
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

#### Unit 4 Lesson 3: Doubling Your Money

State Standard	Description
N.FL.06.12 N.MR.06.13 N.FL.06.15	Calculate part of a number given the percentage and the number. Solve contextual problems involving percentages such as sales taxes and tips. Solve applied problems that use the four operations with appropriate decimal numbers.

## Course Name - Part

Michigan State Curriculum Content Standards (continued)

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### Unit 4 Lesson 4: Checking Accounts

State Standard	Description
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

### Unit 4 Lesson 5: Keeping the Account Up To Date

State Standard	Description
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

### Unit 4 Lesson 6: Reconciling a Checking Account

State Standard	Description
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

### Unit 4 Lesson 7: Stock Market Mathematics

State Standard	Description
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

### Unit 4 Lesson 8: Evaluating Profits and Losses

State Standard	Description
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

### Unit 4 Lesson 9: Earning Dividends

State Standard	Description
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.

### Unit 4 Lesson 10: Using Credit and Debit Cards

State Standard	Description
N.FL.05.20	Solve applied problems involving fractions and decimals; include rounding of answers and checking reasonableness.
N.FL.06.12	Calculate part of a number given the percentage and the number.
N.MR.06.13	Solve contextual problems involving percentages such as sales taxes and tips.
N.FL.06.15	Solve applied problems that use the four operations with appropriate decimal numbers.