

Mathematical Models with Applications focuses on the application of algebraic, geometric, statistics and probability concepts to real world experiences in personal finance, science, art and social science. Through a "Discovery-Confirmation-Practice"-based exploration of these concepts, students are challenged to strengthen their computational skills, to deepen their understanding of key ideas and solution strategies, and to extend their knowledge through a variety of problem-solving applications.

Course topics include applying mathematics to personal finance topics such as income and budgeting, tax and interest, credit, loans, insurance, and retirement. Students will use exponential functions to model growth and decay, quadratic functions to model motion, and use trigonometry to model harmonic motion. Students will apply geometric concepts such as similarity and transformations, statistics and experimental design, and probability and counting principles to a variety of situations.

This course supports all students as they develop computational fluency, deepen conceptual understanding, and apply mathematical process standards. Throughout the course, students are equipped with tools for analyzing a variety of real-world scenarios and mathematical ideas and are asked to solve and communicate mathematics effectively.

The course is built to the TEKS Mathematical Models with Applications Standards.

Length: Two Semesters

## UNIT 1: INCOME AND BUDGETING

### LESSON 1: TYPES OF WAGES

#### Study: Types of Wages

Understand the difference between hourly rate and salary. Use the hourly rate to calculate gross pay from a time card. Learn how to take overtime and tips into account.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### Quiz: Types of Wages

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 2: COMPENSATION PACKAGES

#### Study: Compensation Packages

Learn the various types of benefits that may be part of a compensation package. Explore situations in which a higher-paying job is not necessarily the best overall compensation.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### Quiz: Compensation Packages

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 3: LINEAR EQUATIONS AND WAGES

#### Study: Linear Equations and Wages

Learn how to model salary that includes a start fee. Understand the concept of a  $y$ -intercept. Use piecewise functions to model bonus pay.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### **Quiz: Linear Equations and Wages**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 4: PERCENTAGES AND COMMISSION**

### **Study: Percentages and Commission**

Understand how to use percentages to calculate commission pay with the formula  $C = prn$ .

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### **Quiz: Percentages and Commission**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 5: TAKE-HOME PAY: REQUIRED DEDUCTIONS**

### **Study: Take-Home Pay: Required Deductions**

Understand how taxes, Social Security, and Medicare are required deductions. Practice calculating the effect of such deductions.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### **Quiz: Take-Home Pay: Required Deductions**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 6: TAKE-HOME PAY: OPTIONAL DEDUCTIONS**

### **Study: Take-Home Pay: Optional Deductions**

Explore the concept of an optional deduction, such as health insurance, life insurance, disability, and retirement. Practice calculating net or take-home pay.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### **Quiz: Take-Home Pay: Optional Deductions**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 7: COST OF LIVING AND BUDGET**

### **Study: Budget Sheets**

Explore various types of monthly expenditures. Practice preparing and using a budget.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### **Quiz: Cost of Living and Budget**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 8: INCOME AND BUDGETING WRAP-UP**

### **Review: Income and Budgeting**

Submit your work for a set of practice problems.

Duration: 0 hrs 30 mins Scoring: 0 points

### **Test (CS): Income and Budgeting**

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

### **Test (TS): Income and Budgeting**

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

## **UNIT 2: INCOME TAX**

### **LESSON 1: TAXABLE INCOME**

#### **Study: Taxable Income**

Understand the concept of taxable income. Make calculations based on the standard deduction. Consider issues surrounding filing status.

Duration: 0 hrs 45 mins Scoring: 0 points

#### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### **Quiz: Taxable Income**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### **LESSON 2: ITEMIZED DEDUCTIONS**

#### **Study: Itemized Deductions**

Understand the concept of adjusted gross income. Explore the types of itemized deductions.

Duration: 0 hrs 45 mins Scoring: 0 points

#### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### **Quiz: Itemized Deductions**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### **LESSON 3: TAX BRACKETS**

#### **Study: Tax Brackets**

Understand the tax bracket system.

Duration: 0 hrs 45 mins Scoring: 0 points

#### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### **Quiz: Tax Brackets**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 4: SUBMITTING YOUR TAX FORM

### Study: Submitting Your Tax Form

See how to fill out a tax form (1040EZ).

Duration: 0 hrs 45 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### Quiz: Submitting Your Tax Form

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### Discuss: Group Discussion

Discuss ideas from this unit that are still unclear. Inform others of strategies you developed during this unit.

Duration: 0 hrs 30 mins Scoring: 20 points

## LESSON 5: INCOME TAX WRAP-UP

### Review: Income Tax

Submit your work for a set of practice problems.

Duration: 0 hrs 30 mins Scoring: 0 points

### Test (CS): Income Tax

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

### Test (TS): Income Tax

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

## UNIT 3: CHECKING AND SAVINGS

### LESSON 1: SIMPLE INTEREST

#### Study: Simple Interest

Define interest. Understand simple interest and the formula  $I = prt$ . Practice computing a balance in an account while incorporating interest.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### Quiz: Simple Interest

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 2: EXPONENTIAL GROWTH

#### Study: Exponential Growth

Review exponents. Practice evaluating exponential expressions. Define the concept of exponential growth and decay.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### Quiz: Exponential Growth

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 3: COMPOUND INTEREST

#### Study: Compound Interest

Define compound interest for a general number of periods. Practice using the formula  $B = p(1 + r)^n$  and reading compound interest tables. Explore continuous compounding as an example of exponential growth.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### Quiz: Compound Interest

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 4: CHECKING ACCOUNTS

#### Study: Checking Accounts

Understand how checking accounts work, including interest, and how to write a check. Understand the fees associated with a checking account, such as overdraft fees and service charges.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### Quiz: Checking Accounts

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 5: BALANCING YOUR CHECKBOOK

#### Study: Balancing Your Checkbook

Practice balancing a checkbook. Learn how to read bank statements.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### Quiz: Balancing Your Checkbook

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 6: COMPARING CHECKING ACCOUNTS

#### Study: Comparing Checking Accounts

Compare two checking accounts based on various factors.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### Quiz: Comparing Checking Accounts

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 7: SAVINGS ACCOUNTS

**Study: Savings Accounts**

Understand the difference between a savings account and a checking account. Work with APR and APY. Perform calculations involving deposits and withdrawals.

Duration: 0 hrs 45 mins Scoring: 0 points

**Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

**Quiz: Savings Accounts**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

**LESSON 8: COMPARING SAVINGS ACCOUNTS****Study: Comparing Savings Accounts**

Compare two savings accounts based on various factors.

Duration: 0 hrs 45 mins Scoring: 0 points

**Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

**Quiz: Comparing Savings Accounts**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

**Discuss: Group Discussion**

Discuss ideas from this unit that are still unclear. Inform others of strategies you developed during this unit.

Duration: 0 hrs 30 mins Scoring: 20 points

**LESSON 9: CHECKING AND SAVINGS WRAP-UP****Review: Checking and Savings**

Submit your work for a set of practice problems.

Duration: 0 hrs 30 mins Scoring: 0 points

**Test (CS): Checking and Savings**

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

**Test (TS): Checking and Savings**

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

**UNIT 4: CREDIT****LESSON 1: CREDIT CARDS****Study: Credit Cards**

Understand how credit cards work and learn the language of credit. Compute the APR and effective rate of a given credit card.

Duration: 0 hrs 45 mins Scoring: 0 points

**Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

**Quiz: Credit Cards**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 2: CALCULATING CREDIT CARD INTEREST

### Study: Calculating Credit Card Interest

Learn how credit card companies compute interest. Explore the average daily balance, previous balance, and adjusted balance methods.

Duration: 0 hrs 45 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### Quiz: Calculating Credit Card Interest

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 3: TRACKING PAYMENTS AND PURCHASES

### Study: Tracking Payments and Purchases

Make a table that shows the effects of making payments and additional purchases on the balance.

Duration: 0 hrs 45 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### Quiz: Tracking Payments and Purchases

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 4: COMPARING CREDIT CARDS

### Study: Comparing Credit Cards

Compare the advantages and disadvantages of using cash versus a credit card. Compare cards by considering terms of use such as annual fees and a lower APR, no fees and a higher APR, or an introductory APR.

Duration: 0 hrs 45 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### Quiz: Comparing Credit Cards

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 5: CREDIT SCORES

### Study: Credit Scores

Learn the factors that are used to compute a credit score. Understand the scoring system. Understand how to improve your credit score. Use a hypothetical credit score table to determine a credit score.

Duration: 0 hrs 45 mins Scoring: 0 points

### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### Quiz: Credit Scores

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 6: CREDIT WRAP-UP

### Review: Credit

Submit your work for a set of practice problems.

Duration: 0 hrs 30 mins Scoring: 0 points

### **Test (CS): Credit**

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 48 points

### **Test (TS): Credit**

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

## **UNIT 5: HOME OWNERSHIP**

### **LESSON 1: MORTGAGES: FIXED RATE**

#### **Study: Mortgages: Fixed Rate**

Define a fixed-rate mortgage. Calculate monthly payment based on the interest rate, compounding period, and length of the loan.

Duration: 0 hrs 45 mins Scoring: 0 points

#### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### **Quiz: Mortgages: Fixed Rate**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### **LESSON 2: MORTGAGES: VARIABLE RATE**

#### **Study: Mortgages: Variable Rate**

Define variable-rate mortgages. Use the monthly payment formula to calculate the effects of a rate increase.

Duration: 0 hrs 45 mins Scoring: 0 points

#### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### **Quiz: Mortgages: Variable Rate**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### **LESSON 3: MULTIPLE MORTGAGES AND REFINANCING**

#### **Study: Multiple Mortgages and Refinancing**

Explore the 80/20 mortgage, which allows for no down payment. Investigate a scenario in which refinancing is optimal.

Duration: 0 hrs 45 mins Scoring: 0 points

#### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### **Quiz: Multiple Mortgages and Refinancing**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### **LESSON 4: BALLOON MORTGAGES**

#### **Study: Balloon Mortgages**

Understand how balloon mortgages work. Calculate the cost of exercising the reset option. Explore the costs and benefits of using a balloon mortgage.

Duration: 0 hrs 45 mins Scoring: 0 points

#### **Checkpoint: Practice Problems**



Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### **Quiz: Balloon Mortgages**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 5: ADDITIONAL COSTS: FEES**

### **Study: Additional Costs: Fees**

Understand the additional fees associated with a house purchase. Understand processing fees, loan-level price adjustments, and appraisal fees.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkup: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### **Quiz: Additional Costs: Fees**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 6: ADDITIONAL COSTS: ESCROW**

### **Study: Additional Costs: Escrow**

Understand the role of escrow in financing a house. Calculate the additional costs of PMI, taxes, and homeowners insurance.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkup: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### **Quiz: Additional Costs: Escrow**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 7: TOTAL HOUSING PAYMENTS**

### **Study: Total Housing Payments**

Compute total housing payments, taking mortgage, additional fees, and escrow into account.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkup: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### **Quiz: Total Housing Payments**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 8: HOME OWNERSHIP WRAP-UP**

### **Review: Home Ownership**

Submit your work for a set of practice problems.

Duration: 0 hrs 30 mins Scoring: 0 points

### **Test (CS): Home Ownership**

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 36 points

### **Test (TS): Home Ownership**

Take a teacher-scored test to assess what you have learned in this unit.

## UNIT 6: CARS, INSURANCE, AND RETIREMENT

### LESSON 1: CAR LEASING

#### Study: Car Leasing

Understand the terms of a car lease. Factor the total payment, including the amount due at signing. Understand the required insurance for a car lease.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### Quiz: Car Leasing

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 2: PAYMENTS

#### Study: Payments

Compute the total cost of a car purchase. Compute the monthly payment. Investigate the effect of a down payment on the total cost and monthly payment.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### Quiz: Payments

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 3: EQUITY AND DEPRECIATION

#### Study: Equity and Depreciation

Define the concepts of equity and depreciation. Understand that equity decreases as the automobile depreciates.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### Quiz: Equity and Depreciation

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 4: CAR INSURANCE PREMIUMS

#### Study: Car Insurance Premiums

Understand how annual insurance premiums are determined.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### Quiz: Car Insurance Premiums

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 5: SUGGESTED PREMIUM

**Study: Suggested Premium**

Explore how an insurance provider calculates a suggested premium.

Duration: 0 hrs 45 mins Scoring: 0 points

**Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

**Quiz: Suggested Premium**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

**LESSON 6: PROPERTY AND RENTERS INSURANCE****Study: Property and Renters Insurance**

Understand the need for property insurance. Calculate the additional cost of property or renters insurance.

Duration: 0 hrs 45 mins Scoring: 0 points

**Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

**Quiz: Property and Renters Insurance**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

**LESSON 7: LIFE INSURANCE****Study: Life Insurance**

Learn how life insurance works. Determine the amount of insurance needed by considering salary replacement versus income needed.

Duration: 0 hrs 45 mins Scoring: 0 points

**Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

**Quiz: Life Insurance**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

**LESSON 8: CALCULATING LIFE INSURANCE PREMIUMS****Study: Calculating Life Insurance Premiums**

Understand how mortality tables are used to calculate premiums.

Duration: 0 hrs 45 mins Scoring: 0 points

**Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

**Quiz: Calculating Life Insurance Premiums**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

**LESSON 9: RETIREMENT ACCOUNTS****Study: Retirement Accounts**

Understand IRA accounts and 401(k) plans. Compare IRAs to 401(k) plans with matching employer contributions.

Duration: 0 hrs 45 mins Scoring: 0 points

**Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### **Quiz: Retirement**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### **Discuss: Group Discussion**

Discuss ideas from this unit that are still unclear. Inform others of strategies you developed during this unit.

Duration: 0 hrs 30 mins Scoring: 30 points

## **LESSON 10: CARS, INSURANCE, AND RETIREMENT WRAP-UP**

### **Review: Cars, Insurance, and Retirement**

Submit your work for a set of practice problems.

Duration: 0 hrs 30 mins Scoring: 0 points

### **Test (CS): Cars, Insurance, and Retirement**

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

### **Test (TS): Cars, Insurance, and Retirement**

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

## **UNIT 7: INVESTMENTS**

### **LESSON 1: CDS**

#### **Study: CDs**

Understand the function of a CD. Compare CDs to savings accounts. Perform calculations concerning tax deferral and early termination fees.

Duration: 0 hrs 45 mins Scoring: 0 points

#### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### **Quiz: CDs**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### **LESSON 2: ANNUITIES**

#### **Study: Annuities**

Define an annuity. Perform calculations using the time value of money equation. Perform calculations concerning tax and early termination fees.

Duration: 0 hrs 45 mins Scoring: 0 points

#### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

#### **Quiz: Annuities**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### **LESSON 3: BONDS**

#### **Study: Bonds**

Understand the definition of a bond. Calculate the coupon of a bond.

Duration: 0 hrs 45 mins Scoring: 0 points

#### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### **Quiz: Bonds**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 4: STOCKS**

### **Study: Stocks**

Understand the difference between a stock and a bond. Learn how to read a stock page. Learn the process of buying and selling stock. Understand the taxation of stocks.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### **Quiz: Stocks**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 5: THE STOCK MARKET**

### **Study: The Stock Market**

Study the rate of change of a stock. Learn how stock indices are created. Explore the Dow Jones, the Standard and Poor's 500, and the Nasdaq. Learn the definition of a mutual fund.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### **Quiz: The Stock Market**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 6: PERIODIC INVESTMENT**

### **Study: Periodic Investment**

Understand how dollar cost averaging works as an investment strategy.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### **Quiz: Periodic Investment**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 7: RETIREMENT AND PERIODIC INVESTMENT**

### **Study: Retirement**

Compare IRAs and 401(k)s. Understand the difference between traditional and Roth IRAs.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### **Quiz: Retirement**

Take a quiz to assess your understanding of the material.

## LESSON 8: INVESTMENTS WRAP-UP

### Review: Investments

Submit your work for a set of practice problems.

Duration: 0 hrs 30 mins Scoring: 0 points

### Test (CS): Investments

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 38 points

### Test (TS): Investments

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 50 mins Scoring: 50 points

## UNIT 8: SEMESTER EXAM

### LESSON 1: SEMESTER EXAM

#### Review: Semester Review

Prepare for the final exam by reviewing key concepts and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

#### Exam: Semester Exam

Take a computer-scored exam to demonstrate your mastery of concepts and skills covered in Semester 1.

Duration: 0 hrs 50 mins Scoring: 200 points

## UNIT 9: INVERSE VARIATION, EXPONENTIAL FUNCTIONS, AND QUADRATIC FUNCTIONS

### LESSON 1: INVERSE VARIATION

#### Study: Inverse Variation

Review direct variation and how increasing input leads to proportionally increasing output. Review inverse variation and how increasing input leads to proportionally decreasing output. Review finding the constant of variation.

Duration: 0 hrs 35 mins Scoring: 0 points

#### Checkup: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Inverse Variation

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

#### Practice: Modeling: Finding the Constant in Inverse Variation

Create a graph using a table of inverse variation data, and determine a constant value to create an approximate functional model.

Duration: 0 hrs 30 mins Scoring: 20 points

### LESSON 2: REPRESENTING EXPONENTIAL FUNCTIONS

#### Study: Representing Exponential Functions

Define an exponential function and explore applications of exponential functions, such as exponential growth and decay. Use exponential expressions to model real-world contexts.

Duration: 0 hrs 45 mins Scoring: 0 points

#### Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Representing Exponential Functions

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

### **Practice: Modeling: Exponential Functions**

Model and solve a real-world problem.

Duration: 0 hrs 50 mins Scoring: 20 points

## **LESSON 3: GRAPHING EXPONENTIAL FUNCTIONS**

### **Study: Graphing Exponential Functions**

Learn about graphs of exponential functions with different bases. Identify the domain, range, asymptote, and  $y$ -intercept of an exponential function from its equation and from its graph. Use graphs to evaluate exponential functions for given  $x$ -values.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkup: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Graphing Exponential Functions**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

### **Journal: Graphing Exponential Functions**

Construct arguments and critique the reasoning of others as you write about topics in algebra.

Duration: 0 hrs 50 mins Scoring: 20 points

## **LESSON 4: SOLVING QUADRATIC EQUATIONS: FACTORING AND SQUARE ROOTS**

### **Study: Solving Quadratic Equations: Factoring and Square Roots**

Learn to solve quadratics in the form  $x^2 = b$  by taking square roots. Use the zero product property to solve quadratic equations by factoring. Learn about standard form and rewrite quadratic equations in that form.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkup: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Solving Quadratic Equations: Factoring and Square Roots**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

### **Practice: Modeling: Factoring and Square Roots**

Model and solve a real-world problem.

Duration: 0 hrs 50 mins Scoring: 20 points

## **LESSON 5: SOLVING QUADRATIC EQUATIONS: QUADRATIC FORMULA**

### **Study: Solving Quadratic Equations: Quadratic Formula**

Learn the quadratic formula and see how it can be used to solve quadratic equations. Understand that the discriminant can be used to determine whether a quadratic equation has 0, 1, or 2 real solutions.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkup: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Solving Quadratic Equations: Quadratic Formula**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

## **LESSON 6: GRAPHING QUADRATIC FUNCTIONS**

### **Study: Graphing Quadratic Functions**

Graph quadratic functions. Relate factors of a quadratic function to its graph and its corresponding  $x$ -intercepts. Locate the vertex of a quadratic function graphically and algebraically. Use the graph of a quadratic function to write its equation. Understand vertex form and use it to identify the vertex of a quadratic function.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Graphing Quadratic Functions**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 25 mins Scoring: 20 points

## **LESSON 7: INVERSE VARIATION, EXPONENTIAL FUNCTIONS, AND QUADRATIC FUNCTIONS WRAP-UP**

### **Review: Inverse Variation, Exponential Functions, and Quadratic Functions**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 30 mins Scoring: 0 points

### **Test (CS): Inverse Variation, Exponential Functions, and Quadratic Functions**

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

### **Test (TS): Inverse Variation, Exponential Functions, and Quadratic Functions**

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

## **UNIT 10: SIMILARITY AND TRANSFORMATIONS**

### **LESSON 1: SIMILAR TRIANGLES**

#### **Study: Similar Triangles**

Learn about similarity versus congruence, testing for similarity among triangles, proportionality, the definition of similar triangles, and scale factor.

Duration: 0 hrs 35 mins Scoring: 0 points

#### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Similar Triangles**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

### **LESSON 2: SIMILARITY THEOREMS AND PROPORTIONAL REASONING**

#### **Study: Similarity Theorems and Proportional Reasoning**

Learn about the ASA similarity postulate, the SSS similarity theorem, and the SAS similarity theorem.

Duration: 0 hrs 35 mins Scoring: 0 points

#### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### **Quiz: Similarity Theorems**

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

#### **Practice: Modeling: Similarity Theorems**

Use your knowledge of similarity to model and solve a real-world problem.

Duration: 0 hrs 30 mins Scoring: 20 points



## LESSON 3: SIMILAR RIGHT TRIANGLES

### Study: Similar Right Triangles

Explore the properties of similar right triangles. Prove that if an altitude is drawn from the right-angle vertex of a right triangle to its hypotenuse, then three similar triangles are formed. Calculate the missing sides of similar right triangles by using proportions and apply concepts learned to a miniature-golf problem.

Duration: 0 hrs 35 mins Scoring: 0 points

### Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Similar Right Triangles

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

### Practice: Modeling: The Pool Table Problem

Use your knowledge of similar right triangles to model a pool table and hit your ball in the pocket.

Duration: 0 hrs 30 mins Scoring: 38 points

## LESSON 4: T TRANSFORMATIONS

### Study: Transformations

Learn about rigid motions, describe the image and preimage, predict the results of transformations, and use series of transformations to move figures onto themselves.

Duration: 0 hrs 35 mins Scoring: 0 points

### Quiz: Transformations

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

### Journal: Transformations

Critique a conjecture about a series of transformations.

Duration: 0 hrs 30 mins Scoring: 20 points

## LESSON 5: SYMMETRY

### Study: Symmetry

Learn about reflectional symmetry and line of symmetry and explore an example of an isosceles triangle. Learn about rotational symmetry, point of symmetry, and the symmetry of a human face.

Duration: 0 hrs 35 mins Scoring: 0 points

### Quiz: Symmetry

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 6: SIMILAR SOLIDS

### Study: Similar Solids

Learn about similar prisms, pyramids, cylinders, cones, and spheres; the constant ratio between corresponding parts of similar solids; and the ratio of volumes of similar solids.

Duration: 0 hrs 35 mins Scoring: 0 points

### Checkup: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Similar Solids

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 7: SIMILARITY AND TRANSFORMATIONS WRAP-UP

### Review: Similarity and Transformations

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 30 mins Scoring: 0 points

### Test (CS): Similarity and Transformations

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

### Test (TS): Similarity and Transformations

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

## UNIT 11: TRIGONOMETRY AND TRIGONOMETRIC FUNCTIONS

### LESSON 1: THE PYTHAGOREAN THEOREM

#### Study: The Pythagorean Theorem

Learn how the Pythagorean theorem applies only to right triangles and discover one proof of it. Learn about the converse of the Pythagorean theorem, Pythagorean triples, and applying the theorem to the problem of fitting a baseball bat into a rectangular trunk.

Duration: 0 hrs 35 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: The Pythagorean Theorem

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

#### Journal: Proving the Pythagorean Theorem

Use what you know about congruence of triangles to prove the Pythagorean Theorem.

Duration: 0 hrs 30 mins Scoring: 20 points

### LESSON 2: SPECIAL RIGHT TRIANGLES

#### Study: Special Right Triangles

Explore 45-45-90 and 30-60-90 triangles as special cases of right triangles and learn how to apply the ratios of their side lengths.

Duration: 0 hrs 35 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Special Right Triangles

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 3: TRIGONOMETRIC RATIOS

#### Study: Trigonometric Ratios

Learn the definitions of *sine*, *cosine*, and *tangent*. Memorize the shortcut "soh-cah-toa" as a way to relate these ratios. Explore the use of trigonometric ratios in the solution of a real-world problem involving the construction of a cable car.

Duration: 0 hrs 35 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Trigonometric Ratios

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

### **Practice: Modeling: Leaning Towers**

Use your knowledge of right triangles, trigonometric ratios, and the Pythagorean Theorem to model and solve a real-world problem.

Duration: 0 hrs 30 mins Scoring: 20 points

## **LESSON 4: GRAPHS OF SINE AND COSINE**

### **Study: What Is a Sinusoid Anyway?**

Learn to build the graphs of sine and cosine.

Duration: 1 hr

### **Checkup: Lessons Learned**

Complete a set of practice problems on graphs of sine and cosine.

Duration: 0 hrs 50 mins

### **Quiz: Graphs of Sine and Cosine**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 40 mins Scoring: 20 points

## **LESSON 5: GRAPHS OF OTHER FUNCTIONS**

### **Study: Graphs of Other Functions**

Learn the graphs of the other four trigonometric functions.

Duration: 1 hr

### **Checkup: Practice Problems**

Complete a set of practice problems on graphs of other functions.

Duration: 0 hrs 50 mins

### **Quiz: Graphs of Other Functions**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 40 mins Scoring: 20 points

## **LESSON 6: SIMPLE TRANSFORMATIONS OF SINUSOIDS**

### **Study: Stretches, Shifts, and Flips, Oh My!**

Learn how to transform trigonometric graphs with reflections, shifts, and stretches.

Duration: 0 hrs 50 mins

### **Checkup: Lessons Learned**

Complete a set of practice problems on transformations of periodic graphs.

Duration: 0 hrs 50 mins

### **Quiz: Simple Transformations of Sinusoids**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 40 mins Scoring: 20 points

## **LESSON 7: MODELING SIMPLE HARMONIC MOTION**

### **Study: You Are Getting Sleepy**

Explore simple harmonic motion settings.

Duration: 0 hrs 50 mins

### **Checkup: Lessons Learned**

Complete a set of practice problems on simple harmonic motion.

Duration: 0 hrs 50 mins

### **Quiz: Modeling Simple Harmonic Motion**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 40 mins Scoring: 20 points

## LESSON 8: TRIGONOMETRY AND TRIGONOMETRIC FUNCTIONS WRAP-UP

### Review: Trigonometry and Trigonometric Functions

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 30 mins Scoring: 0 points

### Test (CS): Trigonometry and Trigonometric Functions

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 52 points

### Test (TS): Trigonometry and Trigonometric Functions

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

## UNIT 12: COLLECTING DATA

### LESSON 1: WHAT IS STATISTICS?

#### Study: What Is Statistics?

Learn reasons for studying statistics, how statistics is used, and the differences between sample data and population parameters.

Duration: 0 hrs 40 mins Scoring: 0 points

#### Checkup: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: What Is Statistics?

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 2: OBSERVATIONAL STUDIES

#### Study: Observational Studies

Learn about different sampling methods, biases in sampling, and how sampling methods and biases can affect conclusions drawn from studies.

Duration: 0 hrs 40 mins Scoring: 0 points

#### Checkup: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Observational Studies

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 3: EXPERIMENTAL DESIGN

#### Study: Experimental Design

Learn about experimental design, including but not limited to treatments, randomization, techniques to address extraneous factors, and appropriate conclusions.

Duration: 0 hrs 40 mins Scoring: 0 points

#### Checkup: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Experimental Design

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

#### Discuss: Applying Experimental Design Concepts to Real-World Studies

Join a three- to five-question discussion to practice methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

## LESSON 4: CATEGORICAL DATA

### Study: Categorical Data

Learn how to construct and interpret bar charts, pie graphs, and comparative bar charts.

Duration: 0 hrs 40 mins Scoring: 0 points

### Checkpoint: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Categorical Data

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 5: POINT ESTIMATES

### Study: Point Estimates

Learn how to calculate point estimates from a single sample mean and a single sample proportion.

Duration: 0 hrs 40 mins Scoring: 0 points

### Checkpoint: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Point Estimates

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 6: EVALUATING PUBLISHED REPORTS

### Study: Evaluating Published Reports

Learn how to evaluate the design of a study, the appropriateness of its analysis, and the validity of its conclusions.

Duration: 0 hrs 35 mins Scoring: 0 points

### Checkpoint: Practice Problems

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### Quiz: Evaluating Published Reports

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## LESSON 7: COLLECTING DATA WRAP-UP

### Review: Collecting Data

Submit your work for a set of 20 practice problems.

Duration: 0 hrs 30 mins Scoring: 0 points

### Test (CS): Collecting Data

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

### Test (TS): Collecting Data

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

## UNIT 13: DESCRIPTIVE STATISTICS

### LESSON 1: NUMERICAL DATA

#### Study: Numerical Data

Learn how to construct and interpret stem-and-leaf plots, histograms, and dot plots along with comparative stem-and-

leaf and dot plots.

Duration: 0 hrs 40 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### **Quiz: Numerical Data**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

### **Practice: Modeling: Numerical Data**

Use tools to model and solve a real-world problem.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 2: MEASURES OF CENTER**

### **Study: Measures of Center**

Learn how to calculate and interpret measures of center, such as mean, median, and mode.

Duration: 0 hrs 40 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### **Quiz: Measures of Center**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 3: MEASURES OF SPREAD**

### **Study: Measures of Spread**

Learn how to calculate and interpret variance, standard deviation, range, interquartile range, and outliers.

Duration: 0 hrs 40 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### **Quiz: Measures of Spread**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 4: BOX PLOTS**

### **Study: Box Plots**

Learn how to calculate and interpret box plots, comparative box plots, and modified box plots.

Duration: 0 hrs 40 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Complete a set of practice problems to check your understanding of the lesson.

Duration: 0 hrs 20 mins Scoring: 0 points

### **Quiz: Box Plots**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 20 mins Scoring: 20 points

## **LESSON 5: TWO-VARIABLE DATA AND SCATTERPLOTS**

### **Study: Two-Variable Data and Scatterplots**

Create scatterplots for bivariate data and recognize positive and negative correlations. Use a calculator to find correlation coefficients, and understand what the result says about the strength of the correlation. Know that correlation does not imply causation.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Two-Variable Data and Scatterplots**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

### **Study: Reading the Headlines**

Take a closer look at news headlines for claims of correlation and causation.

Duration: 0 hrs 40 mins Scoring: 0 points

## **LESSON 6: FITTING LINEAR MODELS TO DATA**

### **Study: Fitting Linear Models to Data**

Find equations for best-fit lines (regression equations) by estimation and by using a calculator. Use regression equations to make predictions. Understand whether a linear model is appropriate.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Fitting Linear Models to Data**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

### **Practice: Modeling: Fitting Linear Models to Data**

Model and solve a real-world problem.

Duration: 0 hrs 50 mins Scoring: 20 points

## **LESSON 7: NONLINEAR MODELS**

### **Study: Nonlinear Models**

Learn how to apply nonlinear (quadratic or exponential) regression to find an appropriate model for a data set.

Duration: 0 hrs 45 mins Scoring: 0 points

### **Checkpoint: Practice Problems**

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

### **Quiz: Nonlinear Models**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

### **Journal: Nonlinear Models**

Construct arguments and critique the reasoning of others as you write about topics in algebra.

Duration: 0 hrs 50 mins Scoring: 20 points

## **LESSON 8: DESCRIPTIVE STATISTICS WRAP-UP**

### **Review: Descriptive Statistics**

Check your understanding of the topics in this unit.

Duration: 0 hrs 30 mins Scoring: 0 points

### **Test (CS): Descriptive Statistics**

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

### **Test (TS): Descriptive Statistics**

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 50 points

## UNIT 14: APPLICATIONS OF PROBABILITY

### LESSON 1: WHAT IS PROBABILITY?

#### Study: What Is Probability?

Learn the definition for probability and explore its different forms.

Duration: 0 hrs 35 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Probability Concepts

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

#### Study: Organizing What Is Possible

Explore the numbers of possible outcomes from a brown bag containing gum balls of different colors.

Duration: 0 hrs 35 mins Scoring: 0 points

### LESSON 2: COUNTING PRINCIPLES

#### Study: Counting Principles

Learn about counting strategies and the multiplication principle. Practice using tree diagrams and Venn diagrams in probability problems.

Duration: 0 hrs 35 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Counting Principles

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 3: PERMUTATIONS AND COMBINATIONS

#### Study: Permutations and Combinations

Learn the definitions for permutation and combination. Distinguish which situations require permutations and which require combinations. Determine probabilities using permutation and combinations.

Duration: 0 hrs 35 mins Scoring: 0 points

#### Checkpoint: Practice Problems

Check your understanding of the lesson.

Duration: 0 hrs 25 mins Scoring: 0 points

#### Quiz: Permutations and Combinations

Take a quiz to check your understanding of what you have learned.

Duration: 0 hrs 20 mins Scoring: 20 points

### LESSON 4: GEOMETRIC MODELS FOR PROBABILITY AND STATISTICS

#### Study: Geometric Models for Probability and Statistics

Use area models to connect geometry to probability and statistics.

Duration: 0 hrs 50 mins Scoring: 0 points

#### Practice: Geometric Models: Solving for Probability

Use the properties of geometric shapes to calculate probability in real-life examples.

Duration: 0 hrs 30 mins Scoring: 25 points



### **Quiz: Geometric Models for Probability and Statistics**

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

## **LESSON 5: APPLICATIONS OF PROBABILITY WRAP-UP**

### **Review: Applications of Probability Practice Problems**

Check your understanding of the topics in this unit.

Duration: 0 hrs 30 mins Scoring: 0 points

### **Test (CS): Applications of Probability**

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 18 points

### **Test (TS): Applications of Probability**

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

## **UNIT 15: SEMESTER EXAM**

### **LESSON 1: SEMESTER EXAM**

#### **Review: Semester Review**

Prepare for the final exam by reviewing key concepts and skills.

Duration: 0 hrs 30 mins Scoring: 0 points

#### **Exam: Semester Exam**

Exam covering the entire semester

Duration: 0 hrs 50 mins Scoring: 180 points