Mathematics: Applied Business Math A
Unit 5: Owning a Home or Car

Essential Understandings	▪ The total cost of buying a home includes the purchase price, the cost of borrowing for the purchase and the closing costs. ▪ With home ownership a homeowner has many ongoing expenses. ▪ The cost of buying a car includes the purchase price, the cost of borrowing for the car, and sales tax. ▪ Car ownership also entails many ongoing expenses.
Essential Questions	▪ What are the costs involved in purchasing a home? ▪ What are the ongoing costs involved in home ownership? ▪ What are the costs involved when purchasing a car? ▪ What are the ongoing costs involved in car ownership?
Essential Knowledge	▪ Buying a home involves a down payment, closing costs, and a mortgage loan amount. ▪ The ongoing expenses associated with home ownership include property taxes, repairs, maintenance, utilities, insurance, mortgage payments and special services such as trash removal. ▪ Property taxes are taxes on the assessed value of real estate such as homes, business property and farmland. ▪ Homeowner's insurance policy covers and protects a home against damage. ▪ Costs associated with buying a car include purchase price, delivered price, sales tax, down payment and registration fees. ▪ A car's loss of value as it grows older is called depreciation. ▪ Car insurance includes coverage for bodily injury, property damage, collision damage and comprehensive damage.
Vocabulary	▪ <u>Terms</u>: ○ assessed value, bodily injury, closing costs, collision, comprehensive damage, depreciation, down payment, homeowners insurance, lease, manufacturer's suggested retail price (MSRP), mortgage loan, premium, property damage, property taxes, renters policy, resale value, security deposit, trade-in value

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Essential Skills	▪ Calculate down payments. ▪ Calculate loan amounts. ▪ Calculate closing costs. ▪ Calculate monthly payments. ▪ Calculate and compare refinancing options. ▪ Compare renting vs. buying a home. ▪ Calculate property taxes. ▪ Calculate property insurance. ▪ Calculate how much can be collected on insurance claims. ▪ Calculate MSRP for a new car. ▪ Calculate the delivered price and the balance due for a new or used car. ▪ Calculate average annual depreciation for a car. ▪ Calculate the rate of depreciation. ▪ Calculate car insurance premiums. ▪ Calculate the total amount paid for a car and the finance charge for installment loan car purchases. ▪ Calculate the cost of leasing a car. ▪ Compare the costs of leasing and buying cars. ▪ Calculate the cost of operating a car.

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Related Maine Learning Results	Mathematics A. Number Real Number A1. Students know how to represent and use real numbers. a. Use the concept of nth root. b. Estimate the value(s) of roots and use technology to approximate them. c. Compute using laws of exponents. d. Multiply and divide numbers expressed in scientific notation. e. Understand that some equations do not have real solutions and that there exist other number systems to allow for solutions to these equations. B. Data Data Analysis B2. Students understand correlation and cause and effect. a. Recognize when correlation has been confused with cause and effect. b. Create and interpret scatter plots and estimate correlation and lines of best fit. c. Recognize positive and negative correlations based on data from a table or scatter plot. d. Estimate the strength of correlation based on a scatter plot. B3. Students understand and know how to describe distributions and find and use descriptive statistics for a set of data. a. Find and apply range, quartiles, mean absolute deviation, and standard deviation (using technology) of a set of data. b. Interpret, give examples of, and describe key differences among different types of distributions: uniform, normal, and skewed. c. For the same mean of normal distributions, use the standard deviation for a group of observations to establish 90%, 95%, or 99% confidence intervals. B4. Students understand that the purpose of random sampling is to reduce bias when creating a representative sample for a set of data. a. Describe and account for the difference between sample statistics and statistics describing the distribution of the entire population. b. Recognize that sample statistics produce estimates for the distribution of an entire population and recognize that larger sample sizes will produce more reliable estimates. c. Apply methods of creating random samples and recognize possible sources of bias in samples.

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Sample Lessons And Activities	▪ Depreciation Lesson: o Review computation with decimals. o Define depreciation. o Calculate average annual depreciation. o Calculate Rate of Depreciation.
Sample Classroom Assessment Methods	▪ Quizzes ▪ Take-home Worksheets ▪ Tests
Sample Resources	▪ Publications: o Business Math