

Mathematics: Applied Business Math B
Unit 3: Managing People and Business Costs

Essential Understandings	<ul style="list-style-type: none"> ▪ Managing human resources and tracking inventory costs are key to maintaining profitability.
Essential Questions	<ul style="list-style-type: none"> ▪ What costs are associated with hiring employees? ▪ What is the cost of labor input in the business model? ▪ How does one track and control inventory? ▪ What costs are associated with the manufacturing process?
Essential Knowledge	<ul style="list-style-type: none"> ▪ Hiring and keeping employees have associated costs. ▪ Effective inventory control helps minimize costs. ▪ Understanding the costs associated with manufacturing helps maintain profitability.
Vocabulary	<ul style="list-style-type: none"> ▪ <u>Terms:</u> <ul style="list-style-type: none"> ○ employee, cost of living, profit sharing, inventory, overhead, fixed costs, variable costs, break-even point
Essential Skills	<ul style="list-style-type: none"> ▪ Calculate the costs of hiring employees. ▪ Calculate the COLA, bonuses and profit sharing. ▪ Calculate the cost of full-time and part-time employees. ▪ Find the cost of ordering and carrying inventory. ▪ Find the total manufacturing cost. ▪ Calculate the break-even point. ▪ Calculate depreciation, shipping and freight charges.

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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	<ul style="list-style-type: none">▪ Design and calculate the cost of running an ad for a new employee.▪ Create an itinerary and expense form for a business trip to New York City.
Sample Classroom Assessment Methods	<ul style="list-style-type: none">▪ Homework▪ Quizzes▪ Chapter Test
Sample Resources	<ul style="list-style-type: none">▪ <u>Publications:</u><ul style="list-style-type: none">○ <u>Business Math</u>