June, 2008

Mathematics Alignment Guide

Mason-Lake Tech Prep

Course: Hospitality Management

*** *Note: If a standard is covered partially, then the part that is covered is underlined.*

High School Content Expectations							
Standard	Level of Coverage		Activities	Assessment Method		Assessment Correlation	Approximate Time Spend of on the Standard
	Partial	Complete		Performance Based	Written		
L1.1.4 Describe the reasons for the different effects of multiplication by, or exponentiation of, a positive number by a number less than 0, a number between 0 and 1, and a number greater than 1.	x		Students demonstrate proficiency by using proportions to determine scale factors for increasing or decreasing recipe sizes and multiplying each item by the scale factor. Students need to recognize the reasonableness of their calculations based on the scale factors. Students need to put measurements into appropriate units. (If calculations lead to 18 teaspoons, students should convert to 3 oz.)	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) lab-based competencies, 5) final exam.	Concepts are encountered at various times throughout the year

L1.2.4 Organize and summarize a data set in a table, plot, chart, or spreadsheet; find patterns in a display of data; understand and critique data displays in the media.		x	Students organize and summarize information in tables and charts when performing a menu analysis, organizing profitability data, tracking food costs, tracking inventory, and organizing the cost of goods sold. Students summarize information in a plot (graph) when comparing fixed costs to variable expenses and determining the break-even point. Students critique data in the media for sanitation (food-borne illness) and look at trends in media related to eating at home vs. eating out.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam.	Approximately 8 hours

A1.2.9 Know common formulas, and apply appropriately in contextual situations.		x	Students know common formulas for: 1) measuring and converting units, 2) calculating food costs, 3) determining menu prices and menu-mix percentage, 4) calculating averages, 5) rating customer satisfaction, 6) determining yield percents, 7) inventory management and reordering equations, 8) calculating balances, 9) AP/EP yield percents 10) depreciation on capital assets, 11) balancing a cash-register 12) interpret calculations of food, labor, and pricing to ensure profitability, 13) perform basic accounting functions (e. g. income statements, trial balance).	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered daily throughout the year

A2.1.3 Represent functions in symbols, graphs, tables, diagrams, or words, and translate among representations.		x	Students demonstrate proficiency by: 1) translating between written and verbal descriptions of situations that they need to write equations for (e.g. cost control, accounting, menu management), 2) reading tables and graphs and using information from these to make further calculations (e.g. looking up conversions between units and performing calculations, looking up approximate yield percentages and performing calculations) 3) making charts of temperature and taking corrective action based on patterns 4) making charts of menu sales and perform a menu analysis based on popularity and profitability.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered at various times throughout the year
S1.2.1 Calculate and interpret measures of center including: mean, median, and mode; explain uses, advantages and disadvantages of each measure given a particular set of data and its context.	x		Students calculate the mean by: 1) averaging sales with number of customers daily. 2) comparing the mean of inventory value with most-recent purchase price or beginning-inventory price, 3) figuring average inventory and comparing to industry standards, 4) In menu analysis, students determine the mode for which items sell the best.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam.	Approximately 8 hours

S2.1.4 Differentiate between correlation and causation; know that a strong correlation does not imply a cause-and effect relationship; recognize the role of lurking variables in correlation.		x	Students demonstrate proficiency by: 1) understanding causation and determining lurking variables in tracing the cause of food cost. Students determine which variable may be leading to the rise in cost (too much waste, poor training, prices going up, etc.), 2) students look for correlations in food sales; knowing that there may not be a cause but the result is linked to customer preferences and trends Business math and cost control, 3) forecasting food sales and cost based on historical data.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class.	Approximately 8 – 10 hours

L2.3.1 Convert units of measurement within and between systems; explain how arithmetic operations on measurements affect units, and carry units through calculations correctly.		x	Students demonstrate proficiency by: 1) converting between metric and standard US units, 2) converting within the standard US unit system (e.g. tablespoons to cups), 3) understanding how calculations involving units may require truncating or rounding (particularly with money units), 4) putting measurements into reasonable units following calculations and performing tasks that require the use of correct labels/units (e.g. if students calculate that they need to use 30 teaspoons then they would convert that to 5 oz.), 5) calculating the amount to purchase based on different units between serving portion (what you need to buy) and case pack (units per case sold).	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered at various times throughout the year

L2.4.1 Determine what degree of accuracy is reasonable for measurements in a given situation; express accuracy through use of significant digits, error tolerance, or percent of error; describe how errors in measurements are magnified by computation; recognize accumulated error in applied situations.	x		Students demonstrate proficiency by: 1) calibrating thermometers and taking temperatures based on error ranges, 2) setting critical limits to keep food out of a danger zone and identifying critical control points within the flow of foods, 3) baking science and changing the structure of foods based on temperature ranges (e.g. candy goes through softball to hard crack to dark caramel stages), 4) performing calculations with journal entries. Students need to understand that errors accumulate with multiple calculations. (Final calculations will not balance when journals are closed.)	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Approximately 12 hours

ACT Standards							
Perform one-operation computation with whole numbers and decimals. (Range 13 – 15)		x	Students demonstration proficiency in multiple ways, some include: 1) calculating percent yields, 2) calculating portions, 3) calculating yield conversions, 4) performing common measurement conversions, 5) calculating total costs, 6) determining profits.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered daily throughout the year
Solve problems in one or two steps using whole numbers. (Range 13 – 15)		x	Students demonstration proficiency by: 1) calculating percent yields, 2) calculating portions, 3) calculating yield conversions, 4) performing common measurement conversions, 5) calculating total costs, 6) determining profits.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered daily throughout the year
Perform common conversions (e.g., inches to feet or hours to minutes). (Range 13 – 15)		x	Students demonstrate proficiency by converting between and within systems of measure for 1) converting recipes based on number of servings, 2) converting between dollars and cents when calculating food costs, 3) converting between Celsius and Fahrenheit 4) converting between volume and weight measurements 5) converting between metric and US standard units of measure. 6) converting within standards units of measure (e.g. tablespoons to cups.)	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered daily throughout the year

Calculate the average of a list of positive whole numbers. (Range 13 – 15)		x	Students calculate the mean by: 1) averaging sales with number of customers daily, 2) comparing the mean of inventory value with most-recent purchase price or beginning-inventory price, 3) figuring average inventory and comparing to industry standards.		x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam.	Approximately 8 hours
Perform a single computation using information from a table or chart. (Range 13 – 15)		x	Students demonstrate proficiency by: 1) looking up conversion factors and using them to make conversion calculations, 2) looking up information on food costs and using that to determine total costs, menu prices, average cover, and profit., 3) looking up information on a food safety chart and using the information to calculate time and temperatures.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered at various times throughout the year
Recognize equivalent fractions and fractions in lowest terms. (Range 13 – 15)		x	Students need to recognize equivalent fractions and get fractions in lowest terms when converting units of measure.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered at various points throughout the year
Exhibit knowledge of basic expressions (e.g., identify an expression for a total as b + g). (Range 13 – 15)		x	Students demonstration proficiency in multiple ways, some include: 1) calculating portions, 2) calculating total costs, 3) determining profits, 4) accounting functions.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered daily throughout the year

Solve equations in the form x + a = b, where a and b are whole numbers or decimals. (Range 13 – 15)		x	Students demonstration proficiency in multiple ways, some include: 1) calculating total costs, 2) determining profits, 3) accounting functions.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam.	Approximately 4 hours
Solve routine one-step arithmetic problems (using whole numbers, fractions and decimals) such as single-step percent. (Range 16 – 19)		x	Students demonstration proficiency in multiple ways. Some include: 1) calculating percent yields, 2) calculating portions, 3) calculating yield conversions, 4) performing common measurement conversions, 5) calculating total costs, 6) determining profits.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered daily throughout the year
Solve some routine two-step arithmetic problems. (Range 16 – 19)		x	Students demonstrate proficiency in multiple ways. Some include: 1) calculating the amount to purchase based on different units between serving portion (what you need to buy) and case pack (units per case sold), 2) use a proportion to convert a recipe yield and then convert standards of measure for each ingredient.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered daily throughout the year
Calculate the average of a list of numbers. (Range 16 – 19)		x	Kitchen basics, business math, cost control, accounting, menu management.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam.	4 hours

Calculate the average, given the number of data values and the sum of the data values. (Range 16 – 19)		x	Students calculate the mean by: 1) averaging sales with number of customers daily. 2) comparing the mean of inventory value with most-recent purchase price or beginning-inventory price 3) figuring average inventory and comparing to industry standards.		x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam.	Approximately 8 hours
Read tables and graphs. (Range 16 – 19)		x	Students demonstrate proficiency by: 1) looking up conversion factors and using them to make conversion calculations, 2) looking up information on food costs and using that to determine total costs, menu prices, average cover, and profit., 3) looking up information on a food safety chart and using the information to calculate time and temperatures.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered at various times throughout the year
Perform computations on data from tables and graphs. (Range 16 – 19)		x	Students demonstrate proficiency by: 1) looking up conversion factors and using them to make conversion calculations, 2) looking up information on food costs and using that to determine total costs, menu prices, average cover, and profit, 3) looking up information on a food safety chart and using the information to calculate time and temperatures.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered at various times throughout the year

Identify a digit's place value. (Range 16 – 19)		x	Students identify place value when reviewing basic math concepts.		x	Students demonstrate proficiency on a worksheet.	Approximately 1 hour
Substitute whole numbers for unknown quantities to evaluate expressions. (Range 16 – 19)		x	Students use common formulas and substitute for unknowns in the following expressions: 1) yield percent, 2) cost proportion, 3) selling price, 4) edible portion, 5) cost per unit, 6) food cost percent.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class.	Concepts are encountered daily throughout the year
Solve one-step equations having integer or decimal answers. (Range 16 – 19)		x	Students demonstration proficiency in multiple ways, some include: 1) using equations for total costs, 2) determining profits, 3) accounting functions.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam.	Concepts are encountered at various times throughout the year
Combine like terms (e.g., 2x + 5x). (Range 16 – 19)		x	Students demonstrate proficiency when valuing inventory (adding packs and case expressions.)	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class.	Approximately 4 hours
Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average. (Range 20 – 23)		x	Students demonstrate proficiency in multiple ways. Some include: 1) using proportions to converting a recipe size, 2) calculations with tax and shipping, 3) calculating percent discount and mark-up, 4) determining a selling price, 5) calculating average costs and/or sales.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class.	Concepts are encountered at various times throughout the year

Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor. (Range 20 – 23)	x		Students demonstrate proficiency by: 1) rounding monetary values to the nearest cent, 2) ordering decimals when finding lowest ratios of cost per serving, 3) identifying patterns in menu analysis, 4) using prime numbers in reducing fractions, 5) using greatest common factor for reducing fractions within converting units of measure.		x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class.	Concepts are encountered at various times throughout the year
Evaluate algebraic expressions by substituting integers for unknown quantities. (Range 20 – 23)		x	Students substitute for unknowns in the following expressions: 1) yield percent, 2) cost proportion, 3) selling price, 4) edible portion, 5) cost per unit, 6) food cost percent.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class.	Concepts are encountered daily throughout the year
Add and subtract simple algebraic expressions. (Range 20 – 23)		x	Students demonstrate proficiency when valuing inventory (adding packs and case expressions.)	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class.	Approximately 4 hours
Solve routine first-degree equations. (Range 20 – 23)		x	Students demonstration proficiency in multiple ways, some include: 1) using equations for total costs, 2) determining profits, 3) accounting functions.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam.	Approximately 4 hours

Perform straightforward word-to-symbol translations. (Range 20 – 23)		x	Students demonstrate proficiency by: 1) translating between written and verbal descriptions of situations that they need to write equations for (e.g. cost control, accounting, menu management), 2) reading tables and graphs and using information from these to make further calculations (e.g. looking up conversions between units and performing calculations, looking up approximate yield percentages and performing calculations) 3) making charts of menu sales and perform a menu analysis based on popularity and profitability.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered at various times throughout the year
Solve multi-step arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour). (Range 24 – 27)		x	Students demonstrate proficiency in numerous activities, such as: 1) using a proportion, students change the yield of a recipe and then convert units to appropriate size measurements, 2) students prepare a purchase order after performing multiple calculations to determine each item and amount to purchase.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered at various times throughout the year
Manipulate data from tables and graphs. (Range 24 – 27)		x	Students demonstrate proficiency by: 1) looking up conversion factors and using them to make conversion calculations, 2) looking up information on food costs and using that to determine total costs, menu prices, average cover, and profit, 3) looking up information on a food safety chart and using the information to calculate time and temperatures.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered at various times throughout the year

Find and use the least common multiple. (Range 24 – 27)		x	Students demonstrate proficiency by finding common denominators when adding fractions.		x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class.	Concepts are encountered at various times throughout the year
Order fractions. (Range 24 – 27)		x	Students demonstrate proficiency when measuring amounts of ingredients.	x		Students demonstrate proficiency on lab competencies.	Concepts are encountered at various times throughout the year
Work with numerical factors. (Range 24 – 27)		x	Students demonstrate proficiency by using greatest common factor for reducing fractions within converting units of measure.		x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class.	Concepts are encountered at various times throughout the year
Solve real-world problems using first-degree equations. (Range 24 – 27)		x	Students demonstration proficiency in multiple ways, some include: 1) using equations for total costs, 2) determining profits, 3) accounting functions.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam.	Approximately 4 hours

Write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions). (Range 24 – 27)	x		Students demonstrate proficiency on multiple tasks including calculations with: 1) yield percentages, 2) scaling up or scaling down recipes, 3) purchase orders.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class.	Concepts are encountered at various times throughout the year
Solve word problems containing several rates, proportions, or percentages. (Range 28 – 32)		x	Students demonstrate proficiency by performing multiple calculations in steps such as scaling up a recipe and then determining the quantity needed to purchase (incorporating yield percent).		x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam.	Concepts are encountered at various times throughout the year
Interpret and use information from figures, tables, and graphs. (Range 28 – 32)		x	Students demonstrate proficiency by: 1) looking up conversion factors and using them to make conversion calculations, 2) looking up information on food costs and using that to determine total costs, menu prices, average cover, and profit, 3) looking up information on a food safety chart and using the information to calculate time and temperatures.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered at various times throughout the year
Manipulate expressions and equations. (Range 28 – 32)		x	Students manipulate variable in the following equations: 1) cost per portion, selling price, and food cost percent, 2) edible portion, as-purchased quantity, and yield percent, 3) part, whole, and percent.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class.	Concepts are encountered at various times throughout the year

Solve complex arithmetic problems involving percent of increase or decrease and problems requiring integration of several concepts from pre-algebra and/or pre-geometry (e.g., comparing percentages or averages, using several ratios, and finding ratios in geometry settings). (Range 33 – 36)		x	Students demonstrate proficiency by: 1) solving percent increase or percent decrease with yield percent and/ or food costs over time, 2) calculating averages on guest checks (sales per customer), 3) comparing yield percentages, food cost percentages, etc., 4) using ratios in scaling recipe size.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class.	Concepts are encountered at various times throughout the year
Analyze and draw conclusions based on information from figures, tables, and graphs. (Range 33 – 36)		x	Students demonstrate proficiency by: 1) making a table of menu items, incorporating sales data, analyzing the information, and drawing conclusions on what items are profitable, 2) analyzing variable and fixed costs on a graph and determining the break-even point, 3) analyze diagrams of food flow throughout the organization to determine where hazards could occur.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered at various times throughout the year
Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers (Range 33 – 36)	x		Students demonstrate proficiency while scaling up or scaling down recipes. They need to understand and estimate the results of multiplying each ingredient quantity by a conversion factor (scale factor).	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests 3) in-class projects, 4) final exam, 5) presentations to the class.	Concepts are encountered at various times throughout the year

Draw conclusions based on a set of conditions. (Range 33 – 36)	x		Students draw conclusions about variable costs based on data from labor cost, food cost, or sales history.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class.	Approximately 4 hours

WorkKeys Standards							
Solve problems that require a single type of mathematics operation (addition, subtraction, multiplication, and division) using whole numbers. (Level 3)		x	Students demonstration proficiency in multiple ways, some include: 1) determining number of employees for completing a job, 2) calculating portions.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class.	Approximately 4 hours
Change numbers from one form to another using whole numbers, fractions, decimals, or percentages. (Level 3)		x	Students demonstrate proficiency by: 1) changing from whole numbers and fractions to decimals when converting recipes, 2) changing decimals to percentages when calculating percent yield.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class.	Concepts are encountered at various times throughout the year
Solve problems that require one or two operations. (Level 4)		x	Students demonstration proficiency in multiple ways, some include: 1) calculating percent yields, 2) calculating portions, 3) calculating yield conversions, 4) performing common measurement conversions, 5) calculating total costs, 6) determining profits.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered daily throughout the year

Calculate averages, simple ratios, simple proportions, or rates using whole numbers and decimals. (Level 4)		x	Students calculate the mean by: 1) averaging sales with number of customers daily, 2) comparing the mean of inventory value with most-recent purchase price or beginning-inventory price, 3) figuring average inventory and comparing to industry standards. Students use ratios and proportions for doing recipe conversions. Students calculate rates for inventory turn-over.		x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) lab competencies, 6) in-class presentations.	Concepts are encountered at various times throughout the year
Add commonly known fractions, decimals, or percentages (e.g., 1/2, .75, 25%). (Level 4)	x		Students add fractions when figuring total amounts to measure. Students add decimals when determining total cost.		x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam.	Concepts are encountered at various times throughout the year
Put the information in the right order before performing calculations. (Level 4)		x	Students put information in the right order on their purchase order, inventory worksheets, and/or journal entries to calculate totals.		x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam.	Approximately 6 hours

Decide what information, calculations, or unit conversions to use to solve the problem. (Level 5)		x	Students demonstrate proficiency by: 1) converting between metric and standard US units, 2) converting within the standard US unit system (e.g. tablespoons to cups), 3) putting measurements into reasonable units following calculations and performing tasks that require the use of correct labels/units (e.g. if students calculate that they need to use 30 teaspoons then they would convert that to 5 oz.), 4) calculating the amount to purchase based on different units between serving portion (what you need to buy) and case pack (units per case sold).	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered at various times throughout the year
Look up a formula and perform single-step conversions within or between systems of measurement. (Level 5)		x	Students demonstrate proficiency by: 1) converting between metric and standard US units, 2) converting within the standard US unit system (e.g. tablespoons to cups).	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered at various times throughout the year

Calculate using mixed units (e.g., 3.5 hours and 4 hours 30 minutes). (Level 5)		x	Students demonstrate proficiency by using mixed measurement units (3 tablespoons and 1 teaspoon following a conversion calculation).	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered at various times throughout the year
Find the best deal using one- and two-step calculations and then comparing results. (Level 5)		x	Students demonstrate proficiency when determining the best purchase price based on yield percent and cost.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam.	Approximately 4 hours
Use fractions, negative numbers, ratios, percentages, or mixed numbers. (Level 6)	x		Students use fractions with conversions and measurement, ratios with recipe conversions, percentages with yields, and mixed numbers when measuring quantities.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) presentations to the class, 6) lab competencies.	Concepts are encountered at various times throughout the year
Convert between systems of measurement that involve fractions, mixed numbers, decimals, and/or percentages. (Level 7)		x	Students demonstrate proficiency by converting between US standards of measurement and metric units using fractions, mixed numbers, and decimals.	x	x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam.	Approximately 4 hours

Apply basic statistical concepts. (Level 7)		x	Students calculate the mean by: 1) averaging sales with number of customers daily, 2) comparing the mean of inventory value with most-recent purchase price or beginning-inventory price, 3) figuring average inventory and comparing to industry standards, 4) In menu analysis, students determine the mode for which items sell the best.		x	Students demonstrate proficiency on: 1) worksheets, 2) tests, 3) in-class projects, 4) final exam, 5) in-class presentations.	Approximately 8 hours

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