June, 2008

Mathematics Alignment Guide

Mason-Lake Tech Prep

Course: Travel and Tourism

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

High School Content Expectations							
Standard	Level of Coverage		Activities Linked to this Standard	Assessment Method		Assessment Correlation	Approximate Time Spent on the Standard
	Partial	Complete		Performance Based	Written		
L1.2.4 Organize and summarize 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		1) Students make latitude and longitude maps. 2) Students interpret bell curves. 3) Students make tables of different lifestyles and travel needs. 4) Students use tables and charts in the news media for different trends.	x	x	Students demonstrate proficiency on tests. Students are given blank charts and tables, they need to find trends and fill in the remainder of the chart or table.	Approximately 3 weeks

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	1) Students perform conversions with money between different countries. 2) Students convert distances such as miles to kilometers or miles per hour to kilometers per hour. 3) Students convert shoe sizes and clothing sizes in different countries. 4) Students convert dollars to change. 5) Students round or truncate values based on real world situations. 6) Students label answers with appropriate units after calculations.	x	x	Students demonstrate proficiency on tests and on various projects such as the Trip Project.	Incorporated into units throughout the year
L3.2.2 Use the Connectives "NOT," "AND," "OR," and "IF…,THEN," in mathematical and everyday settings. Know the truth table of each connective and how to logically negate statements involving these connectives.	x		1) Students use connective (not, and, or and if…then.) in story problems involving different cultures and customs. 2) Students use these same connectives when determining budgets and lodging.	x	x	Students demonstrate proficiency on tests with story problems and in-class scenarios when they use the connectives to determine the best rates on travel plans.	Approximately 4 weeks

A2.1.3 Represent functions in symbols, graphs, tables, diagrams, or words, and translate among representations.	x		Students use a flight chart to determine a flight plan and a time estimation (including time changes).	x	x	Students demonstrate proficiency on tests and on an in-class project.	Approximately 4 weeks
S1.1.1 Construct and interpret dot plots, histograms, relative frequency histograms, bar graphs, basic control charts, and box plots with appropriate labels and scales; determine which kinds of plots are appropriate for different types of data; compare data sets and interpret differences based on graphs and summary statistics.	x		1) Students compare data from bar graphs and histograms from different travel sites and travel magazines to find the best deals. 2) Students make bar graphs in presentations using appropriate scales and labels. 3) Students determine average salaries for different professions.	x	x	Students demonstrate proficiency on tests, projects, and presentations.	Approximately 2 weeks
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		1) Students calculate average salaries for different professions and interpret the data. 2) Students use averages of past travel destinations and expenses to make future predictions.	x	x	Students demonstrate proficiency on test and projects.	Approximately 3 Weeks

ACT Standards							
Perform one-operation computation with whole numbers and decimals (Range 13 -15)		x	1) Students determining ticket prices for railroad travel for a dream destination. 2) Students perform conversions with money and distance. 3) Students calculate totals based on trip expenses.	x	x	On a test and in a project, students add charges for their total trip including meals, extra luggage, pets, etc. Students perform conversions on in-class projects and tests.	Approximately 3 weeks
Solve problems in one or two steps using whole numbers (Range 13 – 15)		x	1) Students role-play a business owner and determine how many workers they need to perform a certain number of tasks. 2) Students do 2-step calculations to determine miles per gallon and the total cost of a road trip.	x	x	The students demonstrate proficiency by giving an oral presentation on their business plan. The plan includes the employees that they will hire for each position and expenditures. Students calculate total trip costs on projects and tests.	Approximately 4 weeks

Perform common conversions (e.g., inches to feet or hours to minutes) (Range 13 – 15)		x	1) Students perform conversions with money between different countries. 2) Students convert distances such as miles to kilometers or miles per hour to kilometers per hour. 3) Students convert shoe sizes and clothing sizes in different countries. 4) Students convert dollars to change. 5) Students round or truncate values based on real world situations. 6) Students label answers with appropriate units after calculations.	x	x	Students demonstrate proficiency on tests and on various projects such as the Trip Project.	Incorporated into units throughout the year

Perform a single computation using information from a table or chart (Range 13 – 15)		x	1) Students use a currency chart and convert one currency to another currency. 2) Students read and interpret information from travel charts.	x	x	Students demonstrate proficiency on tests and in-class projects.	Approximately 4 weeks
Solve some routine two-step arithmetic problems (Range 16 – 19)		x	1) Students calculate percent discount and tax across different states. 2) Students determine a business plan based on multiple costs.	x	x	Students demonstrate proficiency based on tests, in-class projects, and oral reports.	Approximately 4 weeks
Calculate the average of a list of numbers (Range 16 – 19)		x	Students calculate average salaries of different careers in travel and tourism.	x	x	Students demonstrate proficiency on tests and in-class projects.	Approximately 3 weeks

Read tables and graphs (Range 16 – 19)		x	1) Students create latitude and longitude maps. 2) Students interpret bell curves. 3) Students make tables of different lifestyles and travel needs. 4) Students use tables and charts in the news media for different trends.	x	x	Students demonstrate proficiency on tests. Students are given blank charts and tables, they need to find trends and fill in the remainder of the chart or table.	Approximately 3 weeks
Perform computations on data from tables and graphs (Range 16 – 19)		x	1) Students interpret information from data/tables and graphs and apply the information to understand the concept of elastic demand. 2) Students use information from tables to perform conversions. 3) Students use information from graphs to plan travel times.	x	x	Students demonstrate proficiency on tests and in-class projects.	Approximately 3 weeks

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	1) Students use rates and proportions to determine travel costs. 2) Students calculate sales tax and percent discount in various situations. 3) Students apply percentages to fees and analyze data to establish a corporate profile. 4) Students use travel rates from the past to make predictions on future travel rates.	x	x	Students demonstrate proficiency on tests, in-class projects, a portfolio, and an oral presentation.	Incorporated into various units 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		1) Students use rounding and truncating when doing calculations with monetary conversions. 2) Students compare trends in travel destinations for pattern identification and predicting future travel behaviors.	x	x	Students demonstrate proficiency on tests and in-class projects.	Approximately 3 – 4 weeks

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	1) Students convert distances such as meters per second to miles per hour. 2) Students calculate total costs for a trip based on travel costs, hotel costs, food, misc. costs, taxes, fares, and percent discounts.	x	x	Students demonstrate proficiency on tests and on various projects such in the Aviation Project and the Trip Project.	Approximately 6 – 8 weeks
Manipulate data from tables and graphs (Range 24 – 27)		x	Students find distance data from a table and use it in calculations for determining total cost of a trip.	x	x	Students demonstrate proficiency on a test and on a group in-class project.	Approximately 3 – 4 weeks

Solve word problems containing several rates, proportions, or percentages (Range 28 – 32)		x	1) Students use rates and proportions to determine travel costs between different groups of travelers. 2) Students calculate group rate discounts. 3) Students calculate children and senior percent discounts. 4) Students use rates and proportions for determining the best place to rent a car.	x	x	Students demonstrate proficiency on tests and in-class projects.	Approximately 3 – 4 weeks
Interpret and use information from figures, tables, and graphs (Range 28 – 32)	x		1) Students interpret bell curves. 2) Students make tables of different lifestyles and travel needs. 3) Students use tables and charts in the news media for different trends. 4) Students use information from tables to do simple conversions.	x	x	Students demonstrate proficiency on tests and in-class projects.	Incorporated into various units 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		1) Students use percent decrease to calculate discounts. 2) Students use ratios and proportions to calculate best deals.	x	x	Students demonstrate proficiency on tests and in-class projects.	Approximately 3 – 4 weeks
Analyze and draw conclusions based on information from figures, tables, and graphs (Range 33 – 36)	x		1) Students interpret bell curves. 2) Students make tables of different lifestyles and travel needs. 3) Students use tables and charts in the news media for different trends. 4) Students use information from tables to do simple conversions.	x	x	Students demonstrate proficiency on tests and in-class projects.	Incorporated into various units throughout the year

Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers (Range 33 – 36)	x		1) Students compare trends in data and draw conclusions about the best rates. 2) Students draw conclusions based on ordering of criteria for trip destinations.	x		Students demonstrate proficiency on a presentation.	Approximately 3 – 4 weeks
Solve problems integrating multiple algebraic and/or geometric concepts (Range 33 – 36)	x		1) Students calculate percent discount and determine trends in cost over time. 2) Students find patterns in cost information to determine increases or decreases over time.	x	x	Students demonstrate proficiency on tests and in-class project.	Approximately 3 – 4 weeks

Draw conclusions based on a set of conditions (Range 33 – 36)		x	1) Students analyze cost information and determine best deals. 2) Students draw conclusions for the proper destination based on a set of criteria for a trip. 3) Students pick the best flight plan based on cost and time of arrival.	x	x	Students demonstrate proficiency on tests and in-class projects.	Approximately 3 – 4 weeks
Use scale factors to determine the magnitude of a size change (Range 33 – 36)		x	Students use scale factors to dilate the size of maps.	x	x	Students demonstrate proficiency on a test and a in-class project.	Approximately 3 – 4 weeks

WorkKeys Standards							
Solve problems that require a single type of mathematics operation (addition, subtraction, multiplication, and division) using whole numbers (Level 3)		x	1) Students determining ticket prices for railroad travel for a dream destination. 2) Students perform conversions with money and distance. 3) Students calculate totals based on trip expenses. 4) Students calculate percent discounts. 5) Students determine total distances of trips.	x	x	On a test and in a project, students add charges for their total trip including meals, extra luggage, pets, etc. Students perform conversions on in-class projects and tests.	Integrated into concepts throughout the entire year
Change numbers from one form to another using whole numbers, fractions, decimals, or percentages (Level 3)		x	1) Students convert percentages to decimals when figuring percent discounts. 2) Students use whole numbers and decimals for figuring costs of trips. 3) Students use fractions when dealing with conversions between miles per hour and meters per second.	x	x	Students demonstrate proficiency on tests and in-class projects.	Integrated into concepts throughout the entire year

Convert simple money and time units (e.g., hours to minutes) (Level 3)		x	1) Students perform conversions with money between different countries. 2) Students convert shoe sizes and clothing sizes in different countries. 3) Students convert dollars to change. 4) Students round or truncate values based on real world situations. 5) Students label answers with appropriate units after calculations.	x	x	Students demonstrate proficiency on tests and on various projects such as the Trip Project.	Incorporated into units throughout the year
Solve problems that require one or two operations (Level 4)		x	1) Students role-play a business owner and must determine how many workers they need to perform a certain number of tasks. 2) Students do 2-step calculations to determine miles per gallon and the total cost of a road trip.	x	x	The students demonstrate proficiency by giving an oral presentation on their business plan. The plan includes the employees that they will hire for each position and expenditures. Students calculate total trip costs on projects and tests.	Approximately 4 weeks

Calculate averages, simple ratios, simple proportions, or rates using whole numbers and decimals (Level 4)		x	1) Students use ratios and proportions for determining best deals using whole numbers and decimals. 2) Students calculate averages salaries of careers.	x	x	Students demonstrate proficiency on tests and in-class projects.	Approximately 3 – 4 weeks
Decide what information, calculations, or unit conversions to use to solve the problem (Level 5)		x	1) Students research trip costs to determine the necessary information needed for calculations. 2) Students perform appropriate unit conversions for time, distance, or money. 3) Students perform the necessary calculations based on verbal or written descriptions.	x	x	Students demonstrate proficiency on tests and in-class projects.	Approximately 3 – 4 weeks

Look up a formula and perform single-step conversions within or between systems of measurement (Level 5)		x	1) Students perform conversions with money between different countries. 2) Students convert distances such as miles to kilometers or miles per hour to kilometers per hour. 3) Students convert shoe sizes and clothing sizes in different countries. 4) Students convert dollars to change.	x	x	Students demonstrate proficiency on tests and on various projects such as the Trip Project.	Incorporated into units throughout the year
Calculate using mixed units (e.g., 3.5 hours and 4 hours 30 minutes) (Level 5)		x	Students convert time from hours and minutes to hours.	x	x	Students demonstrate proficiency on tests and on various projects.	Approximately 3 – 4 weeks
Find the best deal using one- and two-step calculations and then comparing results (Level 5)		x	Students perform calculations for total costs of trips and determine best deals based on the calculations.	x	x	Students demonstrate proficiency on tests and in-class projects.	Approximately 3 – 4 weeks
Use fractions, negative numbers, ratios, percentages, or mixed numbers (Level 6)	x		1) Students use fractions for conversions. 2) Students use ratios and proportions when determining the best deals.	x	x	Students demonstrate proficiency on tests and in-class projects.	Approximately 3 – 4 weeks

Find mistakes in questions that belong at Levels 3, 4, and 5 (Level 6)		x	Students review calculations and make corrections based on sound mathematical principals and mathematics facts.	x		Students do peer reviews of each others' work and find mistakes in calculation or pattern identification.	Incorporated into units throughout the year
Find the best deal and use the result for another calculation (Level 6)		x	1) Students perform calculations for total costs of trips and determine best deals based on the calculations. 2) Students incorporate percent discount into determinations for best price.	x	x	Students demonstrate proficiency on tests and in-class projects.	Approximately 3 – 4 weeks
Find mistakes in Level 6 questions (Level 7)		x	Students review calculations and make corrections based on sound mathematical principals and mathematics facts.	x		Students do peer reviews of each others' work and find mistakes in calculation or pattern identification.	Incorporated into units throughout the year

Convert between systems of measurement that involve fractions, mixed numbers, decimals, and/or percentages (Level 7)	x		1) Students perform conversions with money between different countries. 2) Students convert distances such as miles to kilometers or miles per hour to kilometers per hour. 3) Students convert shoe sizes and clothing sizes in different countries. 4) Students convert dollars to change. 5) Students round or truncate values based on real world situations. 6) Students label answers with appropriate units after calculations.	x	x	Students demonstrate proficiency on tests and on various projects such as the Trip Project.	Incorporated into units throughout the year
Find the best deal when there are several choices (Level 7)		x	1) Students analyze numerous travel magazines and multiple travel sites to find the best travel deal. 2) Students factor percent discount into total price and make comparisons between different cost factors.	x	x	Student must present their best choice to their peers. They also need to produce a portfolio full of information.	Approximately 4 weeks

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