

Mathematics

Time, Task and Resource Management - The student utilizes mathematical concepts to coordinate and plan daily activities. WRS: 1, 15, 16 MATH-TTRM

1 Recognize and Recall

- a Identify numbers 1- 60, days of the week, months of the year MATH-TTRM.1A
 - b Respond to timer-based systems during daily activities MATH-TTRM.1B
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2 Identify and Comprehend

- a Find a specified date on a calendar MATH-TTRM.2A
 - b Access and follow a personalized daily schedule (e.g. visual, auditory) MATH-TTRM.2B
 - c Identify the time using digital and/or analog clocks (hours, half hours minutes) MATH-TTRM.2C
 - d Calculate elapsed time using digital or analog clocks MATH-TTRM.2D
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3 Interpret and Understand

- a Prioritize activities, from a given set, to develop a personal daily, weekly, and/or monthly schedule MATH-TTRM.3A
 - b Use digital and analog clocks at all intervals (hour, half-hour, minute) to comment on the time, estimate time needs, and solve real-life problems MATH-TTRM.3B
 - c Demonstrate knowledge of equivalent units of time (i.e., 1 hour = 60 minutes; 1 day = 24 hours) MATH-TTRM.3C
 - d Predict the length of time a given event will take MATH-TTRM.3D
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4 Apply and Generalize

- a Utilize a calendar to plan for and participate in a variety of activities MATH-TTRM.4A
 - b Use a calendar to coordinate events or activities with others MATH-TTRM.4B
 - c Create a schedule to plan for, participate in and follow academic, work-related, and leisure activities (daily, weekly and monthly) MATH-TTRM.4C
 - d Use clocks and watches or other electronics to understand time, predict, and prepare for events MATH-TTRM.4D
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Data Sense - The student demonstrates ability to collect and use data to make informed decisions. WRS: 16 MATH-DATA

1 Recognize and Recall

- a Gather data by counting and tallying MATH-DATA.1A
- b With information provided, sort necessary from unnecessary data MATH-DATA.1B
- c Recognize that a graph provides information MATH-DATA.1C

2 Identify and Comprehend

- a Identify various forms of data collection (reflective of daily activities), using graphs **MATH-DATA.2A**
 - b Categorize data to put in usable format **MATH-DATA.2B**
 - c Insert data into a preconstructed template **MATH-DATA.2C**
 - d Use graph data to answer questions **MATH-DATA.2D**
 - e Compare two sets of data within a single data display **MATH-DATA.2E**
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3 Interpret and Understand

- a Collect and organize data, using surveys, observations, measurements, or experiments **MATH-DATA.3A**
 - b Determine most appropriate form of data representation **MATH-DATA.3B**
 - c Given a model, interpret data on a graph in order to explain the information it provides **MATH-DATA.3C**
 - d Interpret and explain information displayed in a graph, using the vocabulary more, less, fewer, greater than, less than, and equal to **MATH-DATA.3D**
 - e Calculate and describe the mean, median, mode, and range of a set of data **MATH-DATA.3E**
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4 Apply and Generalize

- a Given a problem situation, collect, organize, display, and draw conclusions from the data **MATH-DATA.4A**
 - b Compile data to construct a simple graph and explain the data **MATH-DATA.4B**
 - c Use data to make hypotheses about the information **MATH-DATA.4C**
 - d Summarize data distributions on a graph or table **MATH-DATA.4D**
 - e Analyze data from a variety of graphs to answer questions **MATH-DATA.4E**
 - f Use calculations and descriptions of the mean, median, mode, and range of a set of data to solve real life problems **MATH-DATA.4F**
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Mathematical Reasoning
- The student uses
mathematical principles
and reasoning to
accomplish tasks. WRS:
16 **MATH-MR**

1 Recognize and Recall

- a Count by twos, fives and tens **MATH-MR.1A**
- b Recognize wholes, halves, and one-quarters **MATH-MR.1B**
- c Discriminate between equal and unequal groups of objects **MATH-MR.1C**
- d Sort like and unlike items **MATH-MR.1D**
- e Locate a number on a number line **MATH-MR.1E**
- f Recognize the place value of a digit within a number **MATH-MR.1F**
- g Identify numbers 1- 100 in numerals **MATH-MR.1G**
- h Transpose numbers in written or typed format into a calculator **MATH-MR.1H**

- i Transpose numbers in written or typed format into a software programs [MATH-MR.1I](#)
 - j Recall, repeat and protect identifying numbers (i.e., phone number, parent's phone number, address, and birthday) [MATH-MR.1J](#)
 - k Recognize use of software programs for mathematical use [MATH-MR.1K](#)
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2 Identify and Comprehend

- a Solve real world division problems with equal and unequal groups of countable objects. Numbers used in the problems should be within 1000 without remainders [MATH-MR.2A](#)
 - b Partition sets or groups into equal shares [MATH-MR.2B](#)
 - c Describe the shares using fraction language [MATH-MR.2C](#)
 - d Identify when two amounts have equivalent values, including whole and rational numbers [MATH-MR.2D](#)
 - e Comprehends math directional words [MATH-MR.2E](#)
 - f Recognize different types of patterns (shape, color, number) [MATH-MR.2F](#)
 - g Classify different types of patterns (i.e., A, B, A; A, B, B, A.; A, B, C) [MATH-MR.2G](#)
 - h Represent fractions as a number on a number line including mixed numbers [MATH-MR.2H](#)
 - i Recognize and identify multiple representations of a number [MATH-MR.2I](#)
 - j Build whole numbers using multiple representations [MATH-MR.2J](#)
 - k Identify place value of decimals [MATH-MR.2K](#)
 - l Sequence 1-100 [MATH-MR.2L](#)
 - m Count to 100 with one-to-one correspondence [MATH-MR.2M](#)
 - n Use a variety of calculators to solve basic mathematical functions [MATH-MR.2N](#)
 - o Identify personal or descriptive variables in multiple number formats, (i.e., Birthday = July 19 or 7/19, it is May 15, 2016 or 5/15/2016 or 5/15/16, or Phone: (804)555-5555 or 804-555-5555 or 555-5555) [MATH-MR.2O](#)
 - p Define math vocabulary (i.e., more than, less than, solve, estimate) [MATH-MR.2P](#)
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3 Interpret and Understand

- a Understand inverse operations [MATH-MR.3A](#)
- b Build decimals using multiple representations [MATH-MR.3B](#)
- c Given a division problem, solve for the whole or a part [MATH-MR.3C](#)
- d Describe lengths on a number line using fractions [MATH-MR.3D](#)
- e Solve equivalence problems and determine if each person received an equal amount [MATH-MR.3E](#)
- f Identify the output when given the input and a given function [MATH-MR.3F](#)
- g Interpret and extend patterns [MATH-MR.3G](#)

- h Compare two fractions (the fractions could be equivalent) by creating common denominators, or by comparing to a benchmark fraction (0, $\frac{1}{2}$, 1, etc.) **MATH-MR.3H**
 - i Compare values of numbers 1-100,000 **MATH-MR.3I**
 - j Add and subtract numbers between 1 and 100 **MATH-MR.3J**
 - k Use a calculator to compute sums and differences when given mathematical problems **MATH-MR.3K**
 - l Use a software program to compute problems and order lists of numbers **MATH-MR.3L**
 - m Identify what mathematical whole number skills and prerequisites are necessary to achieve post-secondary goals (i.e., community college, vocation) **MATH-MR.3M**
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4 Apply and Generalize

- a Use whole numbers and decimals to solve multiplicative comparison problems that describe a proportion in a real world application **MATH-MR.4A**
 - b Solve ratio problems in a real world application using fractions where the ratio describes a part-part relationship **MATH-MR.4B**
 - c Generate equivalent fractions, decimals, and percentages **MATH-MR.4C**
 - d Compare fractions, decimals, and percentages by using equivalencies or by comparing to a benchmark **MATH-MR.4D**
 - e Analyze the general form of a pattern and apply it/make predictions **MATH-MR.4E**
 - f Demonstrate problem solving that includes part-whole and ordering relationships **MATH-MR.4F**
 - g Solve real world problems using decimals **MATH-MR.4G**
 - h Recognize, order, and compare numbers through 100,000,000 **MATH-MR.4H**
 - i Multiply and divide whole numbers up to the thousandths place **MATH-MR.4I**
 - j Demonstrate understanding of how to use a calculator (which functions to choose) to solve mathematical problems requiring division and multiplication **MATH-MR.4J**
 - k Use a software program to analyze data **MATH-MR.4K**
 - l Complete practice activities specific to postsecondary goals (i.e., Take the whole number math portions of practice tests for college entrance exams or word problems related to vocation) **MATH-MR.4L**
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Geometric and Spatial Reasoning - The student uses geometric properties to solve real-world problems. WRS: 16 MATH-GSR

1 Recognize and Recall

- a Sort 2-dimensional plane figures by a variety of basic properties (size, shape, angles, name) MATH-GSR.1A
 - b Determine inside, outside, and edge of a given shape MATH-GSR.1B
 - c Distinguish between a shorter or longer distance MATH-GSR.1C
 - d Recognize when two figures are congruent by matching congruent sides and/or angles MATH-GSR.1D
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2 Identify and Comprehend

- a Identify plane figures with more than four vertices MATH-GSR.2A
 - b Find the area and perimeter of plane figures MATH-GSR.2B
 - c Compare the steepness of two or more lines MATH-GSR.2C
 - d Compare distances, lengths, areas and volumes on comparable items MATH-GSR.2D
 - e Find the midpoint of a given line MATH-GSR.2E
 - f Calculate slope (i.e., rise/run) by counting blocks on a coordinate plane MATH-GSR.2F
 - g Identify the number of sides and angles on a plane figure MATH-GSR.2G
 - h Identify the concept of middle for a variety of figures MATH-GSR.2H
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3 Interpret and Understand

- a Determine whether to use perimeter or area based on a given real life situation MATH-GSR.3A
 - b Construct a variety of figures that have similar area or perimeter MATH-GSR.3B
 - c Measure a given line to determine length/distance (i.e., scale on a map) MATH-GSR.3C
 - d Interpret a given problem to determine whether to calculate slope, midpoint, and distance MATH-GSR.3D
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4 Apply and Generalize

- a Describe attributes of plane figures and apply those attributes to draw basic conclusions (i.e., I know this is a square so the angles must be 90°) MATH-GSR.4A
 - b Apply formulas for perimeter and area of a given shape to solve for unknown real-world values MATH-GSR.4B
 - c Find the slope, midpoint, and distance to solve real life problems in a variety of ways MATH-GSR.4C
 - d Demonstrate understanding of spatial planning and reasoning MATH-GSR.4D
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Measurement - The student uses different systems of measurement to solve

1 Recognize and Recall

- a Determine how objects compare to one another based on length and height MEAS.1A

real-world problems.

WRS:16 MATH-MEAS

- b Recognize tools used to measure mass/weight MATH-MEAS.1B
 - c Compare two items based on relative weight MATH-MEAS.1C
 - d Compare which container can hold more or less of a given substance MATH-MEAS.1D
 - e Recognize tools used to measure temperature MATH-MEAS.1E
 - f Compare the relative temperature with the terms cold, warm, or hot MATH-MEAS.1F
 - g Recognize multiple ways to measure various items or elements such as weight, height, volume, temperature, etc. MATH-MEAS.1G
 - h Recognize tools used to measure liquid, solid, temperature and other physical attributes of objects MATH-MEAS.1H
 - i Recognize the type of measurement used by the designation of measurement MATH-MEAS.1I
 - j Recognize approximate size of common items by type and amount of measurement used MATH-MEAS.1J
 - k Recognize equivalent measures MATH-MEAS.1K
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2 Identify and Comprehend

- a Measure a given object using a ruler to the nearest half-unit MATH-MEAS.2A
 - b Determine the weight of a given object or objects using a scale MATH-MEAS.2B
 - c Measure volume in containers through given unit (i.e., cups, pints, quarts, gallons) MATH-MEAS.2C
 - d Using a thermometer, determine the temperature in Celsius and Fahrenheit MATH-MEAS.2D
 - e Identify smaller and larger units of measure in customary system MATH-MEAS.2E
 - f Identify smaller and larger units of measure in metric system MATH-MEAS.2F
 - g Identify the most appropriate unit of measurement to solve a problem MATH-MEAS.2G
 - h Recognize that there are multiple ways to measure a given object MATH-MEAS.2H
 - i Read and comprehend measurement vocabulary and what symbols go with which measurement tools MATH-MEAS.2I
 - j Recognize freezing and boiling temperatures in both customary and metric systems MATH-MEAS.2J
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3 Interpret and Understand

- a Determine length by drawing a non-scale model and utilizing basic operations to solve for length (i.e., length of a trip) MATH-MEAS.3A
- b Measure a given object to its exact length MATH-MEAS.3B
- c Estimate the weight of an object, then through measurement, compare and contrast the weights of two given objects MATH-MEAS.3C
- d Compare volume of two given figures MATH-MEAS.3D

- e Determine the implication of relative temperature values on daily life (i.e., it is 60° so long sleeves may be appropriate) **MATH-MEAS.3E**
- f Recognize equivalent measures within the standard measurement system **MATH-MEAS.3F**
- g Apply knowledge of equivalent measures within the metric measurement system **MATH-MEAS.3G**

4 Apply and Generalize

- a Apply various methods (i.e., distance formula) to determine the length of an unknown value without using a ruler. **MATH-MEAS.4A**
- b Through estimation, compare and contrast the weights of two given objects **MATH-MEAS.4B**
- c Given a problem involving mass, predict the number of units required for an item of different magnitude **MATH-MEAS.4C**
- d Determine the shape of a given real-world figure and then locate the correct formula to determine volume of the given figure **MATH-MEAS.4D**
- e Determine temperature change (including moving from negative to positive temperatures) in a given real world situation **MATH-MEAS.4E**
- f Convert various measures into other appropriate units of measurement **MATH-MEAS.4F**
- g Estimate appropriate measures between customary and metric measurement systems **MATH-MEAS.4G**

Money Management -
The student uses money
appropriately to
purchase goods and
services, plan a personal
budget, and make
financial
decisions. **MATH-MONEY**

1 Recognize and Recall

- a Recognize available forms of currency: cash, credit, debit, check book **MATH-MONEY.1A**
- b Discriminate values of commonly used coins **MATH-MONEY.1B**
- c Discriminate between commonly used bills **MATH-MONEY.1C**
- d Arrange multiple representations of money values. (e.g., 25 cents = 25 pennies, or 2 dimes and a nickel) **MATH-MONEY.1D**
- e Recognize real or model ATM and credit cards **MATH-MONEY.1E**
- f Pay for simple purchases using debit or credit card **MATH-MONEY.1F**
- g Pay for purchases using next dollar strategy **MATH-MONEY.1G**

2 Identify and Comprehend

- a Identify value of commonly used coins and bills **MATH-MONEY.2A**
- b Find sums and differences of money with like units (all nickels, all dollar bills, etc.) **MATH-MONEY.2B**
- c Identify patterns associated with making change from whole number values (subtraction with regrouping) **MATH-MONEY.2C**

- d Counts a variety of combinations of coins and bills up to five dollars [MATH-MONEY . 2D](#)
 - e Compares values of two or more products to identify which is more and less expensive [MATH-MONEY . 2E](#)
 - f Pays for simple choice purchases independently in at least 3 different environments [MATH-MONEY . 2F](#)
 - g Understands association between ATM cards and credit cards and payment [MATH-MONEY . 2G](#)
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3 Interpret and Understand

- a Find products and quotients of money with like units (all nickels, all dollar bills, etc.) [MATH-MONEY . 3A](#)
 - b Apply concepts for making change in the most efficient manner (i.e., using 2 quarters and 2 dimes as opposed to 70 pennies [MATH-MONEY . 3B](#)
 - c Investigate patterns for making change with mixed number values up to thousands of dollars (subtraction with re-grouping and division) [MATH-MONEY . 3C](#)
 - d Counts a variety of combinations of coins and bills up to fifty dollars [MATH-MONEY . 3D](#)
 - e Counts and records values of coins and bills to find sum of money [MATH-MONEY . 3E](#)
 - f Makes change from given amount of money [MATH-MONEY . 3F](#)
 - g Use a calculator to compute sums and differences when given a word problem relating to money and purchase with an ATM and credit card [MATH-MONEY . 3G](#)
 - h Use a software program to compute problems and order lists of values [MATH-MONEY . 3H](#)
 - i Use software template to populate values in a simple budget [MATH-MONEY . 3I](#)
 - j Locate, select, and purchase necessary items such as food and/or personal care items [MATH-MONEY . 3J](#)
 - k Explain the steps for opening and maintaining a checking account [MATH-MONEY . 3K](#)
 - l Stores and responsibly manages checks, cards and cash [MATH-MONEY . 3L](#)
 - m Explain the steps for opening and maintaining a savings account [MATH-MONEY . 3M](#)
 - n Calculate tip/tax/discount using percentages (including percent of increase, percent of decrease) [MATH-MONEY . 3N](#)
 - o Calculate interest rates on loans [MATH-MONEY . 3O](#)
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4 Apply and Generalize

- a Find sums, differences, products, and quotients of money with mixed units [MATH-MONEY . 4A](#)
- b Identify qualifications to obtain credit or bank account [MATH-MONEY . 4B](#)
- c Analyze credit card features and their impact on personal financial planning [MATH-MONEY . 4C](#)
- d Compare and contrast terms and conditions of various sources of consumer credit [MATH-MONEY . 4D](#)

- e Finds total from a list of items and services to adjust and prioritize spending based on available funds or estimated costs associated with independent living (grocery list, bills) **MATH-MONEY.4E**
- f Interpret and analyze interest rates on purchases made with a credit card **MATH-MONEY.4F**
- g Interpret and analyze purchases made with ATM cards based on real or model banking account information **MATH-MONEY.4G**
- h Express preferred method of payment for a variety of large and small purchases for needs and wants **MATH-MONEY.4H**
- i Use online tools and banking to monitor account (e.g., personal checking and/or savings; returns/investments accounts) **MATH-MONEY.4I**
- j Comparison shops based on multiple factors **MATH-MONEY.4J**
- k Explains benefits and costs of using a line of credit; Avoids opening multiple lines of credit **MATH-MONEY.4K**

Ratios and Proportions -
The student uses
proportions to solve
real-world problems.

WRS:16 **MATH-RATIO**

1 Recognize and Recall

- a Compare numbers and determine which is greater or smaller **MATH-RATIO.1A**
- b Define percent as part of a whole, where the whole is 100 **MATH-RATIO.1B**

2 Identify and Comprehend

- a Identify parts of a ratio **MATH-RATIO.2A**
- b Represent or model percentages **MATH-RATIO.2B**
- c Compare and contrast percentages using models **MATH-RATIO.2C**

3 Interpret and Understand

- a Calculate, compare, and contrast unit rates (per mile, per ounce, per gallon, etc.). [The concept of per.] **MATH-RATIO.3A**
- b Solve rate division problems involving constant speed and pricing. Numbers used in the problems should include whole numbers and decimals **MATH-RATIO.3B**
- c Calculate the percent of a number (tip, tax, interest, discount, etc.) **MATH-RATIO.3C**
- d Determine the total amount based on tip, tax, interest, discount, etc. **MATH-RATIO.3D**

4 Apply and Generalize

- a Explore the multiplicative relationships between the parts of a ratio to make predictions (e.g., if $x/y = \frac{1}{4}$ then $y = 4x$; if it takes x minutes to do this one task how long will it take to do 20 tasks) **MATH-RATIO.4A**
- b Determine the percent increase and the percent decrease **MATH-RATIO.4B**
- c Apply and construct concepts of percentage to graphical representations **MATH-RATIO.4C**
- d Construct circle graphs using percentage data **MATH-RATIO.4D**

e Estimate total costs of purchases, taxes and/or tips **MATH-RATIO.4E**