

L3.3.1 <u>Know the basic structure for the proof of an “If..., then...” statement</u> (assuming the hypothesis and ending with the conclusion) and know that proving the contrapositive is equivalent.	x		Students use conditional statements to determine proper treatment given patient’s presenting symptoms (e.g. If patient is sweaty, pale, complaining of dizziness, and hypotensive, <u>then</u> treat for shock (elevate legs, keep warm, nothing by mouth, call 911, monitor vital signs).	x	x	Students demonstrate proficiency through hands-on, scenario-based skills; check-offs in lab setting; through quizzes; and on written tests.	Ongoing for every student
A2.1.3 <u>Represent functions in symbols, graphs, tables, diagrams, or words, and translate among representations</u>	x		Linear functions (such as Fahrenheit to Celsius unit conversions) are represented as symbols and in tables. Students describe these verbally and know how to translate between different forms.		x	Students demonstrate proficiency through quizzes and worksheets.	Approximately 1 week
G1.6.1 <u>Solve multi-step problems involving circumference and area of circles.</u>	x		Students demonstrate a working knowledge of determining area of figures as they apply to the surface area of the body and its applications in health careers, while recognizing it in other contexts.	x	x	Students calculate partners total body surface area by measuring head circumference and using formulas $r=c/2\pi$ $SA=4\pi r^2$ Student’s also complete Alice’s Areas worksheets.	Approximately 1 day

G3.2.1 <u>Know the definition of dilation</u> , and find the image of a figure under a given dilation.	x		Students relate the definition of dilation to pupil examination and cervical dilation.	x		Students demonstrate proficiency on in-class activities.	Approximately 1 day for all students; depending on clinical rotation, some students may have more exposure to this concept
S1.1.1 <u>Construct and interpret dot plots</u> , histograms, relative frequency histograms, <u>bar graphs</u> , basic control charts, and box plots with <u>appropriate labels and scales</u> ; 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		Students plot height, weight, length, and head circumference on growth chart and interpret growth percentile. Students use bar graphs to interpret career information.	x		Students demonstrate proficiency on in-class activities and worksheets.	Approximately 2 days

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 investigate different health career options and compare salaries using measures of center.		x	Students demonstrate proficiency on the salary analysis project.	Approximately 1 day
S2.1.4 <u>Differentiate between correlation and causation</u> ; <u>know that a strong correlation does not imply a cause-and-effect relationship</u> ; recognize the role of lurking variables in correlation.	x		Students are given a list of cardiac risk factors and will differentiate which are causative and which are correlational factors.		x	Students demonstrate proficiency on in-class, performance-based assessments.	Approximately 1 day

ACT Standards							
Perform one-operation computation with whole numbers and decimals (Range 13 – 15)		x	Students calculate total patient intake and output using whole numbers. Students convert height and weight from English to metric units and vice versa.	x	x	Students demonstrate proficiency in lab, on worksheets, and on tests.	Used at various points throughout the school year
Solve problems in one or two steps using whole numbers (Range 13 – 15)		x	Students solve problems using one and two-steps to determine surface area of body parts (Alice's Areas Lesson). Students will use one and two-steps with ratios to graph pie charts (How Big). Students do multi-step conversions with height and weight.	x	x	Students demonstrate proficiency on Alice's Area worksheet, "How Big" worksheets, module worksheets, proficiency in lab and on tests.	Approximately 4 days for all students and depending on clinical rotation, may have more exposure to this task
Perform common conversions (e.g., inches to feet or hours to minutes) (Range 13 – 15)		x	Will convert height in inches into height in feet and inches (67 inches = 5 ft 7 inches). Will convert from seconds to minutes when recording pulse and respiration.	x	x	Students demonstrate proficiency in lab and clinical, on worksheets, and on tests.	Approximately 1 week and throughout the year in various clinical settings

Calculate the average of a list of positive whole numbers (Range 13 – 15)		x	Students investigate different health career options and compare salaries using measures of center.		x	Students demonstrate proficiency on the salary analysis project.	Approximately 1 day
Perform a single computation using information from a table or chart (Range 13 – 15)		x	Students will take information from a time chart and convert the time into decimals and then convert decimals into degrees for graphing. (Where does it all go? Time Management Lesson)		x	Students demonstrate proficiency on the time management project.	Approximately 1 day
Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) (Range 13 – 15)		x	Students use expressions for surface area, circumference, area of a circle, area of a triangle, and, area of a rectangle. (Alice's Areas Math lesson)		x	Students demonstrate proficiency on Alice's Areas project.	Approximately 1 day
Identify the location of a point with a positive coordinate on the number line (Range 13 – 15)		x	Students will identify the location of a point on a glass thermometer (number line.) * The Rise and Fall of Body Temperature Math Lesson	x	x	Students will be checked in lab reading temperatures on a glass thermometer. Students will also complete temperature worksheets and be given a written test on thermometer reading.	Concepts are covered for approximately 1 week and then used throughout the year

Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent (Range 16 – 19)		x	Students solve problems using one and two-steps to determine surface area of body parts (Alice's Areas Lesson). Students will use one and two-steps with ratios to graph pie charts (How Big). Students do multi-step conversions with height and weight. Students calculate percent of burn area. Students use fractions and percents when determining food intake.	x		x	Students demonstrate proficiency on Alice's Area worksheet, "How Big" worksheets, module worksheets, food acceptance record sheets, proficiency in lab and on tests.	Used at various points throughout the school year
Solve some routine two-step arithmetic problems (Range 16 – 19)		x	Students solve problems using one and two-steps to determine surface area of body parts (Alice's Areas Lesson). Students will use one and two-steps with ratios to graph pie charts (How Big). Students do multi-step conversions with height and weight.	x		x	Students demonstrate proficiency on Alice's Area worksheet, "How Big" worksheets, module worksheets, proficiency in lab and on tests.	Approximately 4 days for all students and depending on clinical rotation, may have more exposure to this task

Calculate the average of a list of numbers (Range 16 – 19)		x	Students investigate different health career options and compare salaries using measures of center.		x	Students demonstrate proficiency on the salary analysis project.	Approximately 1 day
Calculate the average, given the number of data values and the sum of the data values (Range 16 – 19)		x	Students investigate different health career options and compare salaries using measures of center.		x	Students demonstrate proficiency on the salary analysis project.	Approximately 1 day
Read tables and graphs (Range 16 – 19)		x	Students read tables and graphs with height and weight of infants. Students read tables during their clinical rotation.	x	x	Students demonstrate on “How Big” worksheets, module proficiency in lab.	Used at various points throughout the school year
Recognize one-digit factors of a number (Range 16 – 19)		x	Students recognize one-digit factors when reducing fractions within height and weight module for conversions.	x	x	Students demonstrate on “How Big” worksheets, module proficiency in lab.	Used at various points throughout the school year
Substitute whole numbers for unknown quantities to evaluate expressions (Range 16 – 19)		x	Students use substitution with surface area of body parts (Alice’s Areas Lesson).	x	x	Students demonstrate proficiency on Alice’s Area worksheet.	Approximately 1 day
Locate points on the number line and in the first quadrant (Range 16 – 19)		x	Students determine locations of points during the “Body Planes and Directions” project.		x	Students demonstrate proficiency on worksheets and tests.	Approximately 2 days

Compute the area of rectangles when whole number dimensions are given (Range 16 – 19)	x	Students determine area of figures as they apply to the surface area of the body and its applications in health careers.	x	x	Students demonstrate proficiency on the Alice's Areas project.	Approximately 1 day
<u>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</u> (Range 20 – 23)	x	Students calculate rates (such as beats per minute) and scale rates up or down as needed. Students use proportions in the "Where Does it All Go?" projects (e.g. relating time and tasks accomplished). Students determine means of salaries in health careers.		x	Students demonstrate proficiency during clinical rotations, on worksheets, and during labs.	Used at various points throughout the school year
<u>Translate from one representation of data to another</u> (e.g., a bar graph to a circle graph) (Range 20 – 23)	x	Students collect data in a time chart table, perform ratio conversions, and graph the information on a pie chart.			Students demonstrate proficiency in the "Where Does it All Go?" Project.	Approximately 2 days

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 round temperature to the appropriate degree of accuracy depending on the situation. Students look for patterns in temperature, pulse, respiration, and blood pressure. Students use greatest common factors when reducing fractions.	x	x	Students demonstrate proficiency in lab, during clinical rotations, on worksheets, and on tests.	Used at various points throughout the school year
Evaluate algebraic expressions by substituting integers for unknown quantities (Range 20 – 23)		x	Students use substitution with surface area of body parts (Alice's Areas Lesson).	x	x	Students demonstrate proficiency on Alice's Area worksheet.	Approximately 1 day
Solve routine first-degree equations (Range 20 – 23)		x	Students solve basic first-degree equations in proportional thinking during the "Where Does it All Go?" Project.		x	Students demonstrate proficiency on "Where Does it All Go?" worksheets.	Approximately 2 days
Locate points in the coordinate plane (Range 20 – 23)		x	Students understand the relationship between the coordinate system and the abdominal cavity quadrants. Students use the coordinate system to plot points as a way of locating organs in the abdominal cavity.		x	Students demonstrate proficiency on "Body Planes and Directions?" project.	Approximately 2 days

Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90° , 180° , and 360°) (Range 20 – 23)		x	Students recognize that the sum of the flexion and extension angles of joints (range of motion) is supplementary. Students use the sum of central angles in a circle (360°) for creating pie graphs. Students use angle relationships for positioning the head of a bed (90°).	x	x	Students demonstrate proficiency on the “Acute Angles” project, “Where Does it All Go?” project, and positioning module for the head of the bed knowledge.	Used at various points throughout the school year
<u>Compute the area and perimeter of triangles and rectangles in simple problems</u> (Range 20 – 23)	x		Students demonstrate a working knowledge of determining area of figures as they apply to the surface area of the body and its applications in health careers, while recognizing it in other contexts.	x	x	Students complete Alice’s Areas project.	Approximately 1 day
Use geometric formulas when all necessary information is given (Range 20 – 23)		x	Students use knowledge of determining areas of figures as they apply to the surface area of the body and its applications in health careers. Students use formulas for supplementary (range of motion) and sums of 360° for creating pie charts.	x	x	Students complete Alice’s Areas, “Where Does it All Go?”, and “Acute Lesson” projects.	Approximately 5 days

Manipulate data from tables and graphs (Range 24 – 27)		x	Students read salary data for different occupations and calculate average salaries for different careers in the health field.			x	Students demonstrate proficiency on worksheets.	Approximately 1 day
<u>Work with squares and square roots of numbers</u> (Range 24 – 27)	x		Students use squares in the “Alice’s Areas” project.			x	Students complete Alice’s Areas project.	Approximately 1 day
Work problems involving positive integer exponents (Range 24 – 27)	x (Only squares)		Students use squares in the “Alice’s Areas” project.			x	Students complete Alice’s Areas project.	Approximately 1 day
Solve real-world problems using first-degree equations (Range 24 – 27)		x	Students solve basic first-degree equations in proportional thinking during the “Where Does it All Go?” Project.			x	Students demonstrate proficiency on “Where Does it All Go?” worksheets.	Approximately 2 days
Compute the area and <u>circumference</u> of circles after <u>identifying</u> necessary <u>information</u> (Range 24 – 27)	x		Students demonstrate a working knowledge of determining area of figures as they apply to the surface area of the body and its applications in health careers, while recognizing it in other contexts.	x		x	Students calculate partners total body surface area by measuring head circumference and using formulas $r=c/2\pi$ $SA=4\pi r^2$ Student’s also complete Alice’s Areas worksheets.	Approximately 1 day

Solve word problems containing several rates, proportions, or percentages (Range 28 – 32)		x	Students calculate rates (such as beats per minute) and scale rates up or down as needed. Students use proportions in the “Where Does it All Go?” projects (e.g. relating time and tasks accomplished). Students use percentages with food acceptance records.	x		x	Students demonstrate proficiency during clinical rotations, on worksheets, and during labs.	Used at various points throughout the school year
Interpret and use information from figures, tables, and graphs (Range 28 – 32)		x	Students use and interpret information from height and weight graphs and growth charts. Students use and interpret data from salary tables. Students use and interpret data that has been previously recorded on human body figures for determining changes over time.	x		x	Students demonstrate proficiency on worksheets, tests, and in clinical.	Used at various points throughout the school year

<u>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)</u> (Range 33 – 36)	x		Students solve arithmetic problems integrating pre-algebra and pre-geometry when creating pie charts. Students use averages in salary comparisons. Students use percentages when talking about burn area and food intake. Students use ratios for performing unit conversions.	x	x	Students demonstrate proficiency on worksheets, tests, lab, and in clinical.	Used at various points throughout the school year
Distinguish between mean, median, and mode for a list of numbers (Range 33 – 36)		x	Students investigate different health career options and compare salaries using measures of center.		x	Students demonstrate proficiency on the salary analysis project.	Approximately 1 day

Analyze and draw conclusions based on information from figures, tables, and graphs (Range 33 – 36)	x	Students use and interpret information from height and weight graphs and growth charts. Students use and interpret data from salary tables. Students use and interpret data that has been previously recorded on human body figures for determining changes over time.	x	x	Students demonstrate proficiency on worksheets, tests, and in clinical.	Used at various points throughout the school year
Draw conclusions based on a set of conditions (Range 33 – 36)	x	Students draw conclusions based on objective observations, knowledge of diseases, comparisons to normal ranges, and data.	x	x	Students demonstrate proficiency on worksheets, tests, labs, and in clinical.	This concept is incorporated into all aspects of the class
Solve multi-step geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas (Range 33 – 36)	x	Students demonstrate a working knowledge of determining area of figures as they apply to the surface area of the body and its applications in health careers, while recognizing it in other contexts.	x	x	Students calculate partners total body surface area by measuring head circumference and using formulas $r = c/2\pi$ $SA = 4\pi r^2$ Student's also complete Alice's Areas project.	Approximately 1 day

Compute the area of composite geometric figures when planning or visualization is required (Range 33 – 36)	x (only for circles and certain polygons)		Students demonstrate a working knowledge of determining area of figures as they apply to the surface area of the body and its applications in health careers, while recognizing it in other contexts.	x	x	Students calculate partners total body surface area. Student's also complete Alice's Areas project.	Approximately 1 day
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WorkKeys Standards							
Solve problems that require a single type of mathematics operation (addition, subtraction, multiplication, and division) using whole numbers (Level 3)		x	Students calculate total patient intake and output using whole numbers. Students convert height and weight from English units to metric units and vice versa.	x	x	Students demonstrate proficiency in lab, on worksheets, and on tests.	Used at various points throughout the school year
Change numbers from one form to another using whole numbers, fractions, decimals, or percentages (Level 3)		x	Students change numbers from whole numbers in mixed units to decimal and fractional equivalents. (e.g. converting 6 lbs 4 oz to 6 $\frac{1}{4}$ or 6.25 lbs.) Students convert decimals to percents when considering burn percentages in the "Alice's Area" project and the "Where Does it All Go?" project.	x	x	Students demonstrate proficiency in lab, on worksheets, and on "Alice's Area" and "Where Does it All Go?" projects.	Used at various points throughout the school year

<u>Convert simple money and time units (e.g., hours to minutes)</u> (Level 3)	x		Students convert hours to hours and minutes during the “Where Does it All Go?” project. Students convert from a Greenwich clock (12-hour) to a military clock (24-hour).	x	x	Students demonstrate proficiency in lab, on worksheets, and during clinical.	Used at various points throughout the school year
Solve problems that require one or two operations (Level 4)		x	Students solve problems using one and two-steps to determine surface area of body parts (Alice’s Areas Lesson). Students will use one and two-steps with ratios to graph pie charts (How Big). Students do multi-step conversions with height and weight.	x	x	Students demonstrate proficiency on Alice’s Area worksheet, “How Big” worksheets, module worksheets, proficiency in lab and on tests.	Approximately 4 days for all students and depending on clinical rotation, may have more exposure to this task
Calculate averages, simple ratios, simple proportions, or rates using whole numbers and decimals (Level 4)		x	Students investigate different health career options and compare salaries using averages. Students use simple ratios and proportions for the “Where Does it All Go?” project. Students calculate rates when measuring vital signs.	x	x	Students demonstrate proficiency on the salary analysis project, in lab, during clinical, and on the “Where Does it All Go?” project.	Used at various points throughout the school year

Add commonly known fractions, decimals, or percentages (e.g., $\frac{1}{2}$, .75, 25%) (Level 4)		x	Students estimate burn percentages based on the palm representing approximately 1% of the total b.s.a and then summing the estimation of the parts. Students add fractions and/or decimals when determining food intake.	x		Students demonstrate proficiency on labs and in clinical.	Used at various points throughout the school year
Add up to three fractions that share a common denominator (Level 4)		x	Students add fractions when determining food intake.	x		Students demonstrate proficiency on labs and in clinical.	Used at various points throughout the school year
Put the information in the right order before performing calculations (Level 4)		x	Students use correct order of operations when algebraically determining surface area in "Alice's Area." Students put information in the correct units before recording it in a data table.	x	x	Students demonstrate proficiency on labs, in worksheets, and in clinical.	Used at various points throughout the school year
Decide what information, calculations, or unit conversions to use to solve the problem (Level 5)		x	Students determine what information is necessary, perform correct unit conversions based on the applied situation, and perform calculations as needed with the data.	x	x	Students demonstrate proficiency on labs, in worksheets, and in clinical.	Used at various points throughout the school year

Look up a formula and perform single-step conversions within or between systems of measurement (Level 5)		x	Students use formulas to convert units from pounds to kg, kg to pounds, inches to cm, cm to inches, standard US measurements to ml(cc), ml (cc's) to liters, Fahrenheit to Celsius, and Celsius to Fahrenheit.	x	x	Students demonstrate proficiency in: Height/weight, Intake and Output, Temperature Modules; on tests; and in clinical.	Focus of this concept is approximately 3 weeks, but collection of data occurs at various points throughout year
Calculate using mixed units (e.g., 3.5 hours and 4 hours 30 minutes) (Level 5)		x	Students change numbers from one form to another using mixed units. (e.g. converting 6 lbs 4 oz to 6 ¼ or 6.25 lbs.)	x	x	Students demonstrate proficiency in lab and on worksheets.	The major focus on this concept is covered in approximately 2 days
<u>Calculate</u> perimeters and areas of basic shapes (<u>rectangles</u> and <u>circles</u>) (Level 5)	x		Students demonstrate a working knowledge of determining area of figures as they apply to the surface area of the body and its applications in health careers, while recognizing it in other contexts.	x	x	Students calculate partners total body surface area by measuring head circumference and using formulas $r = c/2\pi$ $SA = 4\pi r^2$ Student's also complete Alice's Areas worksheets.	Approximately 1 day
<u>Use fractions, negative numbers, ratios, percentages, or mixed numbers</u> (Level 6)	x		Students use fractions and mixed numbers in conversions. Students use ratios and percentages scaling with vital signs. Students determine burn percentages.	x	x	Students demonstrate proficiency on labs, in worksheets, and in clinical.	Used at various points throughout the school year

Find areas of basic shapes when it may be necessary to rearrange the formula, convert units of measurement in the calculations, or use the result in further calculations (Level 6)	x		Students demonstrate a working knowledge of determining area of figures as they apply to the surface area of the body and its applications in health careers, while recognizing it in other contexts.	x	x	Students calculate partners total body surface area by measuring head circumference and using formulas $r=c/2\pi$ $SA=4\pi r^2$ Student's also complete Alice's Areas worksheets.	Approximately 1 day
Solve problems that include nonlinear functions and/or that involve more than one unknown (Level 7)	x		Students solve problems involving non-linear functions in the "Alice's Area" project.	x	x	Students calculate partners total body surface area by measuring head circumference and using formulas $r=c/2\pi$ $SA=4\pi r^2$ Student's also complete Alice's Areas worksheets.	Approximately 1 day
Convert between systems of measurement that involve fractions, mixed numbers, decimals, and/or percentages (Level 7)	x		Students collect data, convert units from pounds to kg, kg to pounds, inches to cm, cm to inches, standard US measurements to ml(cc), ml (cc's) to liters, Fahrenheit to Celsius, and Celsius to Fahrenheit.	x	x	Students demonstrate proficiency in: Height/weight, Intake and Output, Temperature Modules; on tests; and in clinical.	Focus of this concept is approximately 3 weeks, but collection of data occurs at various points throughout year.

Calculate multiple areas and volumes of spheres, cylinders, or cones (Level 7)	x		Students demonstrate a working knowledge of determining area of figures as they apply to the surface area of the body and its applications in health careers, while recognizing it in other contexts.	x	x	Students calculate partners total body surface area by measuring head circumference and using formulas $r=c/2\pi$ $SA=4\pi r^2$ Student's also complete Alice's Areas worksheets.	Approximately 1 day
Apply basic statistical concepts (Level 7)		x	Students investigate different health career options and compare salaries using measures of center.		x	Students demonstrate proficiency on the salary analysis project.	Approximately 1 day

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