# Numeracy, Including Rational numbers and Square roots

| Objective | No | Daily Topic | Key Idea |
|---|---|---|---|
| The first 18 pages are review and have been added to ensure a smooth transition into the WNCP Math 9 curriculum. | 1. | 1-8: Numbers Systems, Write numbers | Place the numbers 2, 3.5, $\pi$, 2/9, 0, -4 in to the following categories real number, rational number… <br> Write the 1245.036 in words <br> Round 5.2498 to the nearest hundredth. |
| | 2. | 9-14: Integers → 4 operations | Evaluate. $-5 - 1 + (-2) - 5 =$ <br> Evaluate. $-(-1)(-1)(-1)(-1) =$ <br> Evaluate. $-70 \div 5 =$ |
| | 3. | 15-18:Integers → BEDMAS | Evaluate. $5 - 3(4 - 3 \times 2)^2 =$ |
| N3 demonstrate an understanding of rational numbers by <br> – comparing and ordering rational numbers <br> – solving problems that involve arithmetic operations on rational numbers | 4. | • 19-22: Decimals → 4 operations <br> • Solve a given problem involving operations on rational numbers in fraction form and decimal form | Evaluate. $102.04 + 54.35 =$ <br> Evaluate. $72.9 \times 66.12 =$ <br> Evaluate. $434 \div 7.8 =$ <br> Evaluate. $62.74 - 61.29 =$ |
| | 5. | 23-27: Equivalent Fractions, Mixed number, improper fractions and converting. | |
| | 6. | 27-30: Comparing and Ordering Rational Numbers. <br> • Order a given set of rational numbers, in fraction and decimal form, by placing them on a number line (e.g., - 0.666..., 0.5, - 5/8) <br> • Identify a rational number that is between two given rational numbers | Order the following rational numbers from least to greatest: $4, -3.5, \dfrac{21}{6}, -\dfrac{24}{7}, -1$ |
| | 7. | 31-34:Adding Subtracting Fractions <br> • Solve a given problem involving operations on rational numbers in fraction form and decimal form | Evaluate: $-\dfrac{4}{3} + \dfrac{3}{4} =$ & Evaluate: $3 - \dfrac{3}{4} =$ |
| | 8. | 35-39: Multiplying Fractions <br> • Solve a given problem involving operations on rational numbers in fraction form and decimal form | Evaluate. $2\dfrac{1}{4} \times \dfrac{8}{3} =$ & Evaluate. $\dfrac{1}{4} \div \dfrac{5}{8} =$ |
| N4 explain and apply the order of operations, including exponents, ==with== and without technology | 9. | 40-42: Bedmas with fractions <br> • Solve a given problem by applying the order of operations without the use of technology <br> • Solve a given problem by applying the order of operations with the use of technology (This will be covered in later chapters) <br> • Identify the error in applying the order of operations in a given incorrect solution | Evaluate. $\dfrac{20}{40} - \dfrac{21}{40} \times \dfrac{80}{7} =$ <br> Evaluate. $\left(\dfrac{5}{3}\right)^2 - \dfrac{12}{20} =$ |
| N5 determine the square root of positive rational numbers that are perfect squares | 10. | 43-46: Rational Square roots <br> • Determine whether or not a given rational number is a square number and explain the reasoning <br> • Determine the square root of a given positive rational number that is a perfect square <br> • Identify the error made in a given calculation of a square root (e.g., Is 3.2 the square root of 6.4?) <br> • Determine a positive rational number given the square root of that positive rational number | Evaluate. $\sqrt{\dfrac{25}{36}}$ |
| N6 determine an approximate square root of positive rational numbers that are non-perfect squares | 11. | 47-49: Irrational Square roots <br> • Estimate the square root of a given rational number that is not a perfect square, using the roots of perfect squares as benchmarks <br> • Determine an approximate square root of a given rational number that is not a perfect square using technology (e.g., calculator, computer) (later) <br> • Explain why the square root of a given rational number as shown on a calculator may be an approximation (later) <br> • Identify a number with a square root that is between two given numbers | Approximate $\sqrt{40}, \sqrt{0.34}$ |
| | 12. | 50: Chapter Review and Practice Test <br> • Help students develop sound study habits. <br> • Many students will graduate high school saying they do not know how to study for math tests. | |
| | 13. | Go over the practice Test | |
| | 14. | Unit Evaluation | |

# Surface Area

| Objective | # | Daily Topic | Key Ideas |
|---|---|---|---|
| N6 determine an approximate square root of positive rational numbers that are non-perfect squares (This is a continuation of the learning targets from Rational numbers and square roots) | 1. | Area Review: Rectangles, Circles & Triangles. Pg(4-7) <br> • Determine an approximate square root of a given rational number that is not a perfect square using technology (e.g., calculator, computer) <br> • Explain why the square root of a given rational number as shown on a calculator may be an approximation | Estimate the side length of a square with an area of 51cm$^2$ to the nearest tenth. Is your calculator answer, an exact answer? Explain |
| | 2. | Area Review: Rectangles, Circles & Triangles. (8-12) <br> • Solve a given problem by applying the order of operations with the use of technology | Determine the area of rectangles, triangles & circles. <br> Given $C = 2\pi r$, calculate the circumference of a circle with area 40cm$^2$. |
| N4 explain and apply the order of operations, including exponents, with and without technology . (This is a continuation of the learning targets from Rational numbers and square roots.) | 3. | Surface Area Review: Prisms & Cylinders (Pg13-17) <br><br> • Solve a given problem by applying the order of operations with the use of technology | Determine the surface area of an isosceles triangular prism with the following dimensions; base 12cm, height 8 cm and width 3 cm. |
| S&S2 determine the surface area of composite 3-D objects to solve problems <br> [C, CN, PS, R, V] | 4. | Composite Shapes and Overlap(pg. 18-21) <br> • Determine the area of overlap in a given concrete composite 3-D object, and explain its effect on determining the surface area (limited to right cylinders, right rectangular prisms, and right triangular prisms) | The two cylinders have respective radii of 5cm and 3 cm and surface areas of 200cm$^2$ and 100cm$^2$. <br><br> Sandy glues the two cylinders together and paints the composite shape. How much must be subtracted from 300cm$^2$ to determine the new surface area? |
| | 5. | Solve Problems Involving Surface Area (pg. 22-24) <br> • Determine the surface area of a given concrete composite 3-D object (limited to right cylinders, right rectangular prisms, and right triangular prisms) <br> • Solve a given problem involving surface area | A painter is going to paint every surface except the base. How many surfaces need to be painted? Determine the total surface area. <br><br>  |
| | 6. | Chapter Review and Practice Test <br> • Help students develop sound study habits. <br> • Many students will graduate high school saying they do not know how to study for math tests. | |
| | 7. | Go over Practice Test | |
| | 8. | Unit Evaluation | |

# Exponents and Powers

| Objective | # | Daily Topic | Key Ideas |
|---|---|---|---|
| N1 demonstrate an understanding of powers with integral bases (excluding base 0) and whole number exponents by<br>• representing repeated multiplication using powers<br>• using patterns to show that a power with an exponent of zero is equal to one<br>• solving problems involving powers<br>[C, CN, PS, R, V]<br><br>N2 demonstrate an understanding of operations on powers with integral bases (excluding base 0) and whole number exponents<br>[C, CN, PS, R, T] | 1. | Introduction to Exponents (pg. 4-8)<br>• Demonstrate the differences between the exponent and the base by building models of a given power, such as $2^3$ and $3^2$<br>• Explain, using repeated multiplication, the difference between two given powers in which the exponent and base are interchanged (e.g., $10^3$ and $3^{10}$)<br>• Express a given power as a repeated multiplication<br>• Express a given repeated multiplication as a power<br>• Explain the role of parentheses in powers by evaluating a given set of powers (e.g., $(-2)^4$, $(-2^4)$ and $-2^4$)<br>• Evaluate powers with integral bases (excluding base 0) and whole number exponents | • Does $2^3 = 3^2$? Explain your reasoning with a picture.<br>• Use repeated multiplication to explain the difference between $2^5$ and $5^2$?<br>• Express $5^4$ as a repeated multiplication.<br>• Express $(-3)(-3)(-3)(-3)$ as power.<br>• Which of the following are equal: $-3^2$, $(-3^2)$, $-(3)^2$, $(-3)^2$ Explain your reasoning. |
| | 2. | Order of operations and Calculator skills(pg. 9-13)<br>• Determine the sum of two given powers (e.g., $5^2 + 5^3$) and record the process<br>• Determine the difference of two given powers (e.g., $4^3 - 4^2$) and record the process<br>• Identify the error(s) in a given simplification of an expression involving power. | • Evaluate $5^2+3^3$= and record the process.<br>• Evaluate $-3^2-2^3$= and record the process.<br>• Spot the error. $(5-3 \times 2)^2=$<br>$=(2 \times 2)^2$<br>$=(4)^2=16$ |
| | 3. | Extra time for first two sections. | |
| | 4. | Exponent laws (pg. 14-17)<br>• Evaluate a given expression by applying the exponent laws | Evaluate.<br>• $-19^{20} \div (-19)^{18}$,<br>• $\dfrac{2^5 \times 2}{2^2} \times \dfrac{2^2 \times 2^4}{2^5} =$ |
| | 5. | Exponent laws (Pg. 17-20)<br>• Identify and correct an error in a given incorrect solution of a linear equation<br>• Identify the error(s) in a given simplification of an expression involving powers.<br>• Demonstrate, using patterns, that $a^0$ is equal to 1 for a given value of $a$ ($a \neq 0$) | Determine a pattern to explain the value of $2^0$. |
| | 6. | Exponent laws (Pg. 21-26)<br>• Explain, using examples, the exponent laws of powers with integral bases (excluding base 0) and whole number exponents: | Evaluate. $\dfrac{2^2 \times 2^8 \left(2^5\right)^2}{2^3 \left(2^2\right)^6} =$<br><br>Use an example to clearly explain each exponent law. |
| | 7. | Extra time for last three sections. | |
| | 8. | Chapter Review and Practice Test<br>• Help students develop sound study habits.<br>• Many students will graduate high school saying they do not know how to study for math tests. | |
| | 9. | Go over Practice Test | |
| | 10. | Unit Evaluation | |

# Polynomials.

| Objective | No | Daily Topic | Key Ideas |
|---|---|---|---|
| P&R5 demonstrate an understanding of polynomials (limited to polynomials of degree less than or equal to 2) [C, CN, R, V] | 1. | **Introduction to Modeling Polynomials**<br>• Write the expression for a given model of a polynomial<br>• Describe a situation for a given first degree polynomial expression | Write an expression to represent any number in the following pattern, 2,4,6,8,… |
| | 2. | **The language of Polynomials**<br><br>• Create a concrete model or a pictorial representation for a given polynomial expression<br>• Write the expression for a given model of a polynomial<br>• Identify the variables, degree, number of terms, and coefficients, including the constant term, of a given simplified polynomial expression | Given $5x^2 + 3x - 4$ name the variable(s), constant(s), coefficient(s), terms, type of polynomial and degree of the polynomial.<br>Model $-2x^2 + x - 5$ using algebra tiles |
| | 3. | **Extra Day to Practice** | |
| | 4. | **Collecting Like Terms**<br>• Match equivalent polynomial expressions given in simplified form (e.g., $4x - 3x^{\circ} + 2$ is equivalent to $-3x^{\circ} + 4x + 2$) | Which polynomials can be represented by the same set of algebra tiles?<br>A. $7x - 4 + 3x^2$<br>B. $-7x + 4 + 3x^2$<br>C. $3y^2 - 7y + 4$<br>D. $3x^2 - 7x + 4$ |
| | 5. | **Extra Day to Practice** | |
| P&R6 model, record, and explain the operations of addition and subtraction of polynomial expressions, concretely, pictorially, and symbolically (limited to polynomials of degree less than or equal to 2) [C, CN, PS, R, V] | 6. | **Adding and subtracting Polynomials**<br>• Model addition of two given polynomial expressions concretely or pictorially and record the process symbolically<br>• Model subtraction of two given polynomial expressions concretely or pictorially and record the process symbolically<br>• Apply a personal strategy for addition and subtraction of given polynomial expressions, and record the process symbolically<br>• Identify equivalent polynomial expressions from a given set of polynomial expressions, including pictorial and symbolic representations<br>• Identify the error(s) in a given simplification of a given polynomial expression | Simplify: $\left(-x^2 + 7x + 9\right) + \left(6x^2 - 5\right)$<br>Simplify $\left(3x_s - 5x + 1\right) - \left(x_s - x + 3\right)$ using algebra tiles. |
| P&R7 model, record, and explain the operations of multiplication and division of polynomial expressions (limited to polynomials of degree less than or equal to 2) by monomials, concretely, pictorially, and symbolically [C, CN, R, V] | 7. | **Multiplying Polynomials by Constants or Monomials**<br>• Model multiplication of a given polynomial expression by a given monomial concretely or pictorially and record the process symbolically<br>• Apply a personal strategy for multiplication and division of a given polynomial expression by a given monomial<br>• Provide examples of equivalent polynomial expressions<br>• Identify the error(s) in a given simplification of a given polynomial expression | Use algebra tiles to complete the multiplication<br>$3(2x + 3) =$<br><br>Correct any errors if applicable.<br>$-2x\left(-4x + 2 - 11z\right)$<br>$= 8x^2 + 4x + 22z$ |
| | 8. | **Dividing Polynomials by Constants or Monomials**<br>• Model division of a given polynomial expression by a given monomial concretely or pictorially and record the process symbolically<br>• Apply a personal strategy for multiplication and division of a given polynomial expression by a given monomial<br>• Provide examples of equivalent polynomial expressions<br>• Identify the error(s) in a given simplification of a given polynomial expression | Simplify. $\dfrac{4x^2 - 16x}{x} =$ |
| | 9. | **Chapter Review and Practice Test**<br>• Help students develop sound study habits.<br>• Many students will graduate high school saying they do not know how to study for math tests. | |
| | 10. | Go over Practice Test | |
| | 11. | Unit Evaluation | |

# Solving Linear Equations and Inequalities

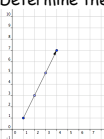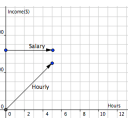| Objective | # | Daily Topic | Key Ideas |
|---|---|---|---|
| P&R3 model and solve problems using linear equations of the form: <br><br> $ax = b^*$ <br><br> $\dfrac{x}{a} = b, \; a \neq 0^*$ <br><br> $ax + b = c^*$ <br><br> $\dfrac{x}{a} + b = c, \; a \neq 0^*$ <br><br> $a\left(x + b\right) = c^*$ <br><br> $ax + b = cx + d^*$ <br><br> $a\left(bx + c\right) = d\left(ex + f\right)$ <br> *where a, b, c, d, e, and f [C, CN, PS, V] | 1. | Introduction to Solving Linear Equations (pg. 4-7) <br>• Model the solution of a given linear equation using concrete or pictorial representations, and record the process. | Algebra stones and Algebra Tiles. <br> Solve $x + 5 = 10$, $x - 7 = 10$, $2x = 10$, $\dfrac{x}{3} = 10$ |
| | 2. | Solving equations of the form ax+b=c and a/c +b=c (pg. 8-10) <br>• Solve a given linear equation symbolically. <br>• Solve a given problem using a linear equation and record the process. | Solve. 4m+3=31 & $\dfrac{2}{5}m - 5 = 3$ |
| | 3. | Solving equations of the form a(x+b)=c and ax+b=cx+d(pg. 11-14) <br>• Determine, by substitution, whether a given rational number is a solution to a given linear equation. | Solve. 4(m+3)=40 & 6m+3=2m+15 <br><br> Is m=5 a solution to the equation $2(m + 2) = 14$? |
| | 4. | More practice with ax+b=cx+d (Pg. 15-18) <br>• Identify and correct an error in a given incorrect solution of a linear equation | Solve. 2(m+1)+4m=4(m-2)+6. |
| | 5. | Solve equation with fractions. (Pg. 19-23) <br>• Solve a given linear equation symbolically. | Solve $\dfrac{m}{3} + \dfrac{2m}{5} - \dfrac{1}{2} = 2$ |
| | 6. | Solve Linear equations without numbers. (Pg. 24-28) <br>• Solve a given linear equation symbolically. | Solve for m. $A(m + n) = B$ |
| P&R4 explain and illustrate strategies to solve single variable linear inequalities with rational coefficients within a problem-solving context. | 7. | Introduction to linear inequalities (Pg. 29-33) <br>• Translate a given problem into a single variable linear inequality using the symbols ≥, >, <, or ≤. <br>• Determine if a given rational number is a possible solution of a given linear inequality. | Write an expression to represent the following statement: Melanie needs at least $280 for snow boarding. |
| | 8. | Inequalities that Include Addition and Subtraction (Pg. 34-37) <br>• Generalize and apply a rule for subtracting a positive or negative number to determine the solution of a given inequality. <br>• Generalize and apply a rule for multiplying or dividing by a positive or negative number to determine the solution of a given inequality. <br>• Solve a given linear inequality algebraically and explain the process orally or in written form. <br>• Verify the solution of a given linear inequality using substitution for multiple elements in the solution. | Solve $2x + 5 < 25$ and verify your solution. <br><br> True or False. <br> If $-2x > -10$ then $x > 5$. |
| | 9. | Solving Problems with Linear Inequalities (Pg. 38-41) <br>• Compare and explain the process for solving a given linear equation to the process for solving a given linear inequality. <br>• Graph the solution of a given linear inequality on a number line. <br>• Compare and explain the solution of a given linear equation to the solution of a given linear inequality. <br>• Solve a given problem involving a single variable linear inequality and graph the solution. | Vertical Wireless charges $50/ month plus $0.25 for all minutes above 400 minutes per month. Frue Gal has decided that she does not want to pay more than $70 per month. Write an inequality to represent how many minutes she can use per month without going over her $70 limit. Approximate your solution on the number line |
| | 10. | Chapter Review and Practice Test <br>• Help students develop sound study habits. <br>• Many students will graduate high school saying they do not know how to study for math tests. | |
| | 11. | Go over Practice Test | |
| | 12. | Unit Evaluation | |

# Solving Problems with Linear Equations

- These outcomes have been met in the linear relations chapter and linear equations chapter.
- This chapter is for increasing student confidence with word problems.

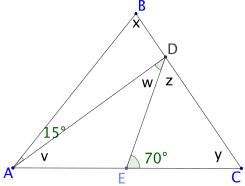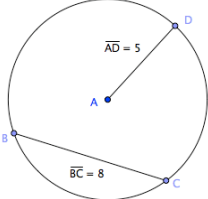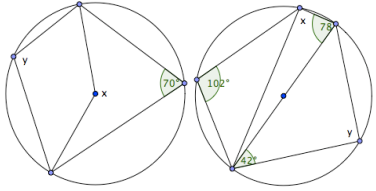| Objective | # | Daily Topic | Key Ideas |
|---|---|---|---|
| P&R1 generalize a pattern arising from a problem-solving context using linear equations and verify by substitution [C, CN, PS, R,<br>B3 model and solve problems using linear equations of the form:<br>$ax = b^*$<br>$\dfrac{x}{a} = b, a \neq 0^*$<br>$ax + b = c^*$<br>$\dfrac{x}{a} + b = c, a \neq 0^*$<br>$a(x + b) = c^*$<br>$ax + b = cx + d$<br>$a(bx + c) = d(ex$<br>$\dfrac{a}{x} = b, a \neq 0^*$<br>*Where a, b, c, d, e, and f [C, CN, PS, V] | 1. | Introduction to word problems 1 (pg. 3-6)<br>• Write a linear equation to represent a given context Solve a given linear equation symbolically.<br>• Solve a given problem using a linear equation and record the process.<br>• Determine, by substitution, whether a given rational number is a solution to a given linear equation. | Jane is 3 years more than twice Johnny's age. The sum of their ages is 18. How old is each? |
| | 2. | Consecutive number problems (pg. 7-10)<br>• Write a linear equation to represent a given context Solve a given linear equation symbolically.<br>• Solve a given problem using a linear equation and record the process.<br>• Determine, by substitution, whether a given rational number is a solution to a given linear equation. | Find 3 consecutive even numbers such that the sum of the 1$^{st}$ and the 3$^{rd}$ numbers exceeds the 2$^{nd}$ number by 10. |
| | 3. | Age problems part 2 (pg. 11-14)<br>• Write a linear equation to represent a given context Solve a given linear equation symbolically.<br>• Solve a given problem using a linear equation and record the process.<br>• Determine, by substitution, whether a given rational number is a solution to a given linear equation. | Jon is 8 years older than his sister. In 3 years, he will be twice as old as she will be then. How old are they now? |
| | 4. | **Coin Problems Part 1 (Pg. 15-17)**<br>• Write a linear equation to represent a given context Solve a given linear equation symbolically.<br>• Solve a given problem using a linear equation and record the process.<br>• Determine, by substitution, whether a given rational number is a solution to a given linear equation. | A boy has 7 more dimes than quarters. The total value of the coins is $4.90. Find the number of dimes and quarters. |
| | 5. | **Coin Problems Part 2 (Pg. 18-19)**<br>• Write a linear equation to represent a given context Solve a given linear equation symbolically.<br>• Solve a given problem using a linear equation and record the process.<br>• Determine, by substitution, whether a given rational number is a solution to a given linear equation. | A collection of dimes and quarters is worth $15.25. There are 103 coins in all. How many of each is there? |
| | 6. | Perimeter Problems Part 1 (Pg. 20-22)<br>• Write a linear equation to represent a given context Solve a given linear equation symbolically.<br>• Solve a given problem using a linear equation and record the process.<br>• Determine, by substitution, whether a given rational number is a solution to a given linear equation. | The length of a rectangle is 3 times the width. The perimeter is 96cm. Find the width and length. |
| | 7. | Perimeter Problems Part 2 (Pg. 22-25)<br>• Write a linear equation to represent a given context Solve a given linear equation symbolically.<br>• Solve a given problem using a linear equation and record the process.<br>• Determine, by substitution, whether a given rational number is a solution to a given linear equation. | The length of a rectangle is 3 times the width. If the length is decreased by 4 m and the width is increased by 1 m. The perimeter will be 66. Find the dimensions of the original rectangle. |
| | 8. | Chapter Review and Practice Test<br>• Help students develop sound study habits.<br>• Many students will graduate high school saying they do not know how to study for math tests. | |
| | 9. | **Go over Practice Test** | |
| | 10. | Unit Evaluation | |
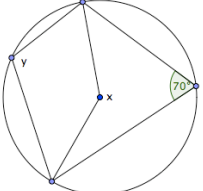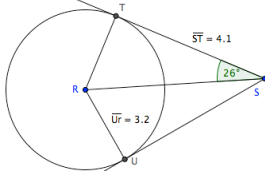
# Linear Relations

| Objective | # | Daily Topic | Key Ideas |
|---|---|---|---|
| P&R1 generalize a pattern arising from a problem-solving context using linear equations and verify by substitution [C, CN, PS, R, V] | 1. | **Describing Patterns Algebraically (pg. 3-6)**<br>• Write an expression representing a given pictorial, oral, or written pattern.<br>• Write a linear equation to represent a given context. | Write a linear equation to represent this pattern.<br>❝❞, ❝❞❝❞, ❝❞❝❞❝❞,❝❞❝❞❝❞❝❞,.....<br>Jason cuts lawns as his summer job. He charges a travelling fee of $10 plus $20/hour for his time. Write an equation to represent this pattern. |
| | 2. | **Describing Patterns in Table of Values (pg. 7-10)**<br>• Solve, using a linear equation, a given problem that involves pictorial, oral, and written linear patterns.<br>• Write a linear equation representing the pattern in a given table of values and verify the equation by substituting values from the table | Write an equation to represent the table of values.<br><br>| x | y |<br>|---|---|<br>| 1 | 6 |<br>| 2 | 7 |<br>| 3 | 8 | |
| P&R2 graph linear relations, analyze the graph, and interpolate or extrapolate to solve problems [C, CN, PS, R, T, V] | 3. | **Interpreting Patterns in Graphs (pg. 11-15)**<br>• Describe a context for a given linear equation<br>• Describe the pattern found in a given graph.<br>• Extend a given graph (extrapolate) to determine the value of an unknown element<br>• Interpolate the approximate value of one variable on a given graph given the value of the other variable | Determine the value of y if x=1 or x=6. |
| | 4. | Review | |
| | 5. | **Analyzing graphs to solve problems (Pg. 16-19)**<br>• Extrapolate the approximate value of one variable from a given graph given the value of the other variable | At what point in time is the salary job not a good financial idea. |
| | 6. | **Graphing linear Relations (Pg. 20-23)**<br>• Graph a given linear relation, including horizontal and vertical lines | Graph $y = 3x + 1$ |
| | 7. | **Graphing linear Relations to solve problems (Pg. 24-27)**<br>• Match given equations of linear relations with their corresponding graphs<br>• Solve a given problem by graphing a linear relation and analyzing the graph | Konfuzd currently charges his customers a fixed rate of $150 per job. His friend Juda thinks he will make more money if he charges a travel fee of $30 plus $40/hour. Draw a graph to help Konfuzd make his decision. |
| | 8. | **Chapter Review and Practice Test**<br>• Help students develop sound study habits.<br>• Many students will graduate high school saying they do not know how to study for math tests. | |
| | 9. | Go over Practice Test | |
| | 10. | Unit Evaluation | |

# Similarity and Transformations

| Obective | # | Daily Topic | Key Ideas |
|---|---|---|---|
| S&S3 Demonstrate an understanding of similarity of polygons. [C, CN, PS, R, V] S&S4 Draw and interpret scale diagrams of 2-D shapes. [CN, R, T, V] | 1. | Scale Drawings (pg. 4-8) <br>• Determine the scale factor for a given diagram drawn to scale. | |
| | 2. | Scale Drawings Con't (pg. 8-11) <br>• Determine if a given diagram is proportional to the original 2-D shape and, if it is, state the scale factor. <br>• Draw a diagram to scale that represents an enlargement or reduction of a given 2-D shape | |
| | 3. | Applying scale drawings (pg. 12-16) <br>• | |
| | 4. | Extra Day for Scale drawings <br>• | |
| | 5. | Similar polygons (Pg. 17-22) <br>• Determine if the polygons in a given pre-sorted set are similar and explain the reasoning. <br>• Draw a polygon similar to a given polygon and explain why the two are similar. | |
| | 6. | Similar Triangles (Pg. 23-28) <br>• Solve a given problem that involves a scale diagram by applying the properties of similar triangles <br>• Identify an example in print and electronic media (e.g., newspapers, the Internet) of a scale diagram and interpret the scale factor. | |
| S&S5 Demonstrate an understanding of line and rotation symmetry. [C, CN, PS, V] | 7. | Line Symmetry (Pg. 29-33) <br>• Classify a given set of 2-D shapes or designs according to the number of lines of symmetry <br>• Complete a 2-D shape or design given one half of the shape or design and a line of symmetry <br>• Identify the type of symmetry that arises from a given transformation on the Cartesian plane. | |
| | 8. | Rotational Symmetry (Pg. 34-37) <br>• Determine if a given 2-D shape or design has rotation symmetry about the point at the centre of the shape or design and, if it does, state the order and angle of rotation. <br>• Rotate a given 2-D shape about a vertex and draw the resulting image. | |
| | 9. | Rotational Symmetry con't (Pg.  38-42) <br>• Complete, concretely or pictorially, a given transformation of a 2-D shape on a Cartesian plane, record the coordinates, and describe the type of symmetry that results. <br>• Determine whether or not two given 2-D shapes on the Cartesian plane are related by either rotation or line symmetry. <br>• Draw, on a Cartesian plane, the translation image of a given shape using a given translation rule, such as R2, U3, label each vertex and its corresponding ordered pair, and describe why the translation does not result in line or rotation symmetry. <br>• Create or provide a piece of artwork that demonstrates line and rotation symmetry, and identify the line(s) of symmetry and the order and angle of rotation. | |
| | 10. | Chapter Review and Practice Test <br>• Help students develop sound study habits. <br>• Many students will graduate high school saying they do not know how to study for math tests. <br>• | |
| | 11. | Go over Practice Test | |
| | 12. | Unit Evaluation | |

# Circle Geometry

| Objective | # | Daily Topic | Key Ideas |
|---|---|---|---|
| This section is not part of the WNCP Objectives. This section reviews the important geometric language needed to be successful in this chapter. | 1. | **Geometry Review: Angles & Triangles (pg. 5-7)**<br>• Review terms, supplementary, complementary, angles on a line, Angles in a triangle… | Given: AE= ED; ∠BDA=90°. Find ∠v, ∠x, & ∠z. Name ΔDEC type. |
| S&S1: Solve problems and justify the solution strategy using circle properties, including:<br><br>The perpendicular from the center of a circle to a chord bisects the chord.<br><br>The measure of the central angle is equal to twice the measure of the inscribed angle coming from the same arc<br><br>The inscribed angles coming from the same arc are congruent<br><br>A tangent to a circle is perpendicular to the radius at the point of tangency [C, CN, PS, R, T, V] | 2. | **Perpendicular Chord Theorem (pg. 8-12)**<br>• Solve problems and justify the solution strategy using the perpendicular from the center of a circle to a chord bisects the chord.<br>• Explain the relationship among the center of a circle, a chord, and the perpendicular bisector of the chord.<br>• Provide an example that illustrates the perpendicular from the center of a circle to a chord bisects the chord. | Determine the shortest distance between the center of the circle and the chord BC.<br><br>$\overline{AD} = 5$<br>$\overline{BC} = 8$ |
|  | 3. | **Inscribed & Central Angles (pg. 13-18)**<br>• Solve problems and justify the solution strategy using the inscribed angles coming from the same arc are congruent.<br>• Provide an example that illustrates the measure of the central angle is equal to twice the measure of the inscribed angle coming from the same arc.<br>• Provide an example that illustrates the inscribed angles coming from the same arc are congruent. | Find x and y. |
|  | 4. | (This is left blank to give extra time to lesson 2 or 3. |  |
|  | 5. | **Inscribed Quadrilateral Properties (Pg. 19-21)**<br>• Solve a given problem involving application of one or more of the circle properties. | Find x and y. |
|  | 6. | **Tangent Properties (Pg. 22-26)**<br>• Solve problems and justify the solution strategy using a tangent to a circle is perpendicular to the radius at the point of tangency.<br>• Provide an example that illustrates a tangent to a circle is perpendicular to the radius at the point of tangency. | U and T are points of tangency. Determine the length of RS and ∠RTS.<br><br>$\overline{ST} = 4.1$<br>$\overline{UT} = 3.2$ |
|  | 7. | **Extra Practice (Pg. 27-28)**<br>• Solve a given problem involving application of one or more of the circle properties. |  |
|  | 8. | **Chapter Review and Practice Test**<br>• Help students develop sound study habits.<br>• Many students will graduate high school saying they do not know how to study for math tests. |  |
|  | 9. | Go over Practice Test |  |
|  | 10. | Unit Evaluation |  |

# Probability and Statistics

| Objectives | # | Daily Topic |
|---|---|---|
| **Data Analysis**<br>S&P1 describe the effect of<br><br>• Bias<br>• Use of language<br>• Ethics<br>• Cost<br>• Time and timing<br>• Privacy<br>• Cultural sensitivity<br>on the collection of data | 1. | Collecting The Data You Want: Questioning and Surveys: Part 1. Pages 4-7 |
|  | 2. | Collecting The Data You Want: Questioning and Surveys: Part 2. Pages 8-11 |
| S&P2 select and defend the choice of using either a population or a sample of a population to answer a question | 3. | Questioning the Right Group: Pages 12-20<br>Two days. |
|  | 4. |  |
| S&P4 demonstrate an understanding of the role of probability in society | 5. | Using Probability to Make Decisions: Pages 21-28 |
|  | 6. | Think Before You Predict: Pages 29-32 |
|  | 7. | What is the Right Sample Size?  Pages 33-39 |
| S&P3 develop and implement a project plan for the collection, display, and analysis of data by formulating a question for investigation:<br><br>• Choosing a data collection method that includes social considerations<br>• Selecting a population or a sample<br>• Collecting the data<br>• Displaying the collected data in an appropriate manner<br>• Drawing conclusions to answer the question | 8. | Chapter Project: Pages 40-52<br>• 2-3 classes. |