Name _____ Date _____

Evidence-Based Scale Worksheets

Number Sense and Operations

MA.7.NSO.1.1 Know and apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions, limited to whole-number exponents and rational number bases.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Demonstrate to other students the rules for Power of a Power, Power of a Product, and Power of a Quotient by using different examples.	
3	**I understand the entire standard.** • Apply the laws of exponents to rewrite the expression as a power.	Simplify each expression. Write your answer as a power. **a.** $\left(\left(\frac{5}{8}\right)^4\right)^9$ **b.** $\frac{(-1.7)^8}{(-1.7)^3}$ **c.** $(0.2)^5 \cdot (0.2)^7$

Name _____ Date _____

MA.7.NSO.1.1 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Evaluate numerical expressions with whole-number exponents and rational number bases.	Evaluate each expression. **a.** 0.6^3 **b.** $\left(-\frac{1}{9}\right)^2$ **c.** $-\left(\frac{2}{5}\right)^4$
1	**I understand the basic skills needed to begin learning this standard.** • Evaluate numerical expressions with whole-number exponents and whole number bases.	Evaluate each expression. **a.** 3^4 **b.** 1^5 **c.** 4^3

Name_____ Date _____

Evidence-Based Scale Worksheets

Number Sense and Operations
MA.7.NSO.1.2 Rewrite rational numbers in different but equivalent forms including fractions, mixed numbers, repeating decimals and percentages to solve mathematical and real-world problems.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Write a real-world problem that requires rewriting rational numbers in different, but equivalent forms.	
3	**I understand the entire standard.** • Solve a real-world problem that requires rewriting rational numbers.	The home team misses 7 out of 30 free throws in a basketball game. The road team misses 6 out of 24 free throws. What team had the greater percentage of free throws made? Explain your reasoning.

Name _____ Date _____

MA.7.NSO.1.2 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Rewrite rational numbers in different forms.	Write the repeating decimal as a fraction. **a.** $1.\overline{1}$ Write the mixed number as a decimal. **b.** $2\frac{3}{11}$ Write the percent as a fraction. **c.** $16\frac{2}{3}\%$
1	**I understand the basic skills needed to begin learning this standard.** • Write fractions as decimals and percents.	Write each fraction as a decimal and a percent. **a.** $\frac{7}{10}$ **b.** $\frac{81}{100}$ **c.** $\frac{829}{1000}$

Name _____ Date _____

Evidence-Based Scale Worksheets

Number Sense and Operations

MA.7.NSO.2.1 Solve mathematical problems using multi-step order of operations with rational numbers including grouping symbols, whole-number exponents and absolute value.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Write an expression that includes all four operations with rational numbers and exponents. Teach someone else how to evaluate the expression.	
3	**I understand the entire standard.** • Evaluate expressions involving rational numbers.	Evaluate each expression. **a.** $-10\|5-12\|-95$ **b.** $4.92-9.5\div 2^2$ **c.** $1\frac{5}{12}+\frac{1}{2}-\frac{5}{3}\div\left(-\frac{1}{2}\right)$

Name_____ Date _____

MA.7.NSO.2.1 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Evaluate expressions with positive rational numbers.	Evaluate each expression. **a.** $2(8-5)+3$ **b.** $3.5 \div 0.5 - 2^2$ **c.** $\frac{7}{6} \div 2 \times 3$
1	**I understand the basic skills needed to begin learning this standard.** • Evaluate expressions with whole numbers.	Evaluate the expression. **a.** $8 \times 7 - 4 \times 5$ **b.** $27 \div 3 + 9$ **c.** $3^2 + 12 - 2^3$

Name _____ Date _____

Evidence-Based Scale Worksheets

Number Sense and Operations
MA.7.NSO.2.2 Add, subtract, multiply and divide rational numbers with procedural fluency.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Demonstrate to other students the rules for when an answer is positive or negative when adding, subtracting, multiplying, or dividing two rational numbers.	
3	**I understand the entire standard.** • Add, subtract, multiply, and divide rational numbers with procedural fluency.	Find the sum, difference, product, or quotient. Write fractions in simplest form. **a.** $-4.7 + (-3.8) - 5.9$ **b.** $-2\frac{1}{4} - \left(-\frac{3}{2}\right) + \frac{7}{8}$ **c.** $(-4.6)(0.7)$ **d.** $-9\frac{3}{4} \div 3\frac{2}{5}$

Name _____ Date _____

MA.7.NSO.2.2 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Add, subtract, multiply, and divide integers with procedural fluency.	Find the sum, difference, product, or quotient. **a.** $-12 + 8$ **b.** $-11 - 14$ **c.** $(-1)(15)(-3)(-4)$ **d.** $(-150) \div 25$
1	**I understand the basic skills needed to begin learning this standard.** • Add, subtract, multiply, and divide whole numbers with procedural fluency.	Find the sum, difference, product, or quotient. **a.** $348 + 236$ **b.** $178 - 93$ **c.** $(16)(17)$ **d.** $2701 \div 37$

Name _____ Date _____

Evidence-Based Scale Worksheets

Number Sense and Operations
MA.7.NSO.2.3 Solve real-world problems involving any of the four operations with rational numbers.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Write a real-world problem with rational numbers that requires the use of multiple operations to solve.	
3	**I understand the entire standard.** • Solve a real-life problem involving operations with rational numbers.	You have $100 in your bank account. You make 1 deposit of $118.47 during the week. You also make 2 withdrawals for $49.95 and 1 additional withdrawal of $135.79. What is the balance on the account?

Name_____ Date _____

MA.7.NSO.2.3 (continued)

<table>
<tr><th></th><th>Description</th><th>Evidence</th></tr>
<tr><td>2</td><td>I understand some parts, but not the entire standard.
Solve a real-life problem involving operations with integers.</td><td>Customers rate their experience at a restaurant on a scale from −2 to 2. The ratings are shown in the table. Find the mean rating.<table><tr><th>Rating</th><th>Number of Customers</th></tr><tr><td>−2</td><td>3</td></tr><tr><td>−1</td><td>0</td></tr><tr><td>0</td><td>2</td></tr><tr><td>1</td><td>9</td></tr><tr><td>2</td><td>11</td></tr></table></td></tr>
<tr><td>1</td><td>I understand the basic skills needed to begin learning this standard.
Solve a real-life problem involving operations with whole numbers.</td><td>There are 4,500 fans in the lower section and 2,250 fans in the upper section for a concert. Lower section tickets cost $65 and upper section tickets cost $40. How much money was bought in for the concert?</td></tr>
</table>

Name _____ Date _____

Evidence-Based Scale Worksheets

Algebraic Reasoning
MA.7.AR.1.1 Apply properties of operations to add and subtract linear expressions with rational coefficients.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Simplify complex linear expressions with rational coefficients that require the use of the Distributive Property.	**a.** Simplify $-2\left(\frac{3}{4}a-\frac{5}{2}\right)+\frac{1}{2}(3a+8)$. **b.** Simplify $\frac{1}{5}\left(5-\frac{2}{3}y\right)-4\left(-\frac{1}{2}-\frac{1}{9}y\right)$.
3	**I understand the entire standard.** • Add and subtract linear expressions with rational coefficients.	**a.** Simplify $\left(-\frac{4}{3}x-5\right)+\left(2x-\frac{1}{2}\right)$. **b.** Simplify $\left(4+\frac{1}{2}y\right)-\left(-3+\frac{1}{4}y\right)$. **c.** Simplify $\left(\frac{1}{2}z+4\right)-\left(z+\frac{3}{2}\right)$.

Name_____ Date _____

MA.7.AR.1.1 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Add and subtract linear expressions with integer coefficients.	**a.** Simplify $(2f + 5) - (3f + 4)$. **b.** Simplify $(6 - g) - (4 + 2g)$. **c.** Simplify $(8h - 3) - (5h - 2)$.
1	**I understand the basic skills needed to begin learning this standard.** • Add and subtract integers.	Find the sum or the difference. **a.** 24 + (–35) **b.** (–27) + 44 **c.** –18 – 36 **d.** –16 – (–48)

Name _____ Date _____

Evidence-Based Scale Worksheets

Algebraic Reasoning
MA.7.AR.1.2 Determine whether two linear expressions are equivalent.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Rewrite real-life expressions in different equivalent forms.	After x months, you have $(20x + 50)$ dollars in your savings account and $(25x + 100)$ dollars in your checking account. Write and simplify an expression that represents the total amount, in dollars, in the accounts after x months.
3	**I understand the entire standard.** • Determine whether two linear expressions are equivalent.	Determine whether the expressions are equivalent. **a.** $\frac{2}{3}(9 - x) + 4x$ and $6 + 3x$ **b.** $-5x + \frac{3}{4}(2x - 6)$ and $-\frac{7}{2}x - \frac{9}{2}$

Name _____ Date _____

MA.7.AR.1.2 (continued)

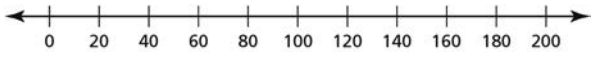
	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Apply the Distributive Property to expressions.	**a.** Simplify $3(x - 7)$. **b.** Simplify $\frac{1}{2}(4y + 16)$. **c.** Simplify $-5(2 - 3z)$.
1	**I understand the basic skills needed to begin learning this standard.** • Add, subtract, and multiply rational numbers.	Find the sum, the difference, or the product. **a.** $1\frac{3}{4} - \frac{2}{5}$ **b.** $1\frac{3}{4} + \frac{2}{5}$ **c.** $1\frac{3}{4}\left(\frac{2}{5}\right)$

Name _____ Date _____

Evidence-Based Scale Worksheets

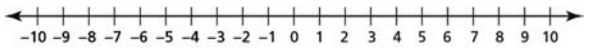
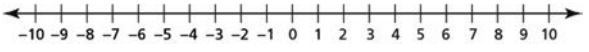
Algebraic Reasoning
MA.7.AR.2.1 Write and solve one-step inequalities in one variable within a mathematical context and represent solutions algebraically or graphically.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Write and solve a real-world problem that involves a one-step inequality.	
3	**I understand the entire standard.** • Solve a word problem leading to a one-step inequality. • Graph and interpret an inequality.	Tickets to a fundraiser cost $10. **a.** Write and solve an inequality that represents the number x of additional tickets that must be sold to make at least $1000 on ticket sales. **b.** Graph and interpret the solution. 

Name _____ Date _____

MA.7.AR.2.1 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Solve one-step inequalities.	Solve each inequality. **a.** $a - 6 < 1$ **b.** $y + 4 \leq -1$ **c.** $-2.5x \leq 10$ **d.** $\frac{2}{3}t > -\frac{1}{2}$
1	**I understand the basic skills needed to begin learning this standard.** • Graph inequalities on a number line.	Graph the inequality on a number line. **a.** $a > 4$  **b.** $b \leq -3$  **c.** $6 > c$ 

Name _____ Date _____

Evidence-Based Scale Worksheets

Algebraic Reasoning
MA.7.AR.2.2 Write and solve two-step equations in one variable within a mathematical or real-world context, where all terms are rational numbers.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Write a word problem that requires writing a two-step equation where all terms are rational numbers.	
3	**I understand the entire standard.** • Solve a word problem leading to a two-step equation with rational numbers.	You install $86\frac{3}{8}$ feet of fencing around a rectangular vegetable garden that has a length of $24\frac{1}{2}$ feet. Write and solve an equation to find the width of the garden.

Name_____ Date _____

MA.7.AR.2.2 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Solve two-step equations with rational numbers for all terms.	Solve each equation. **a.** $\frac{2}{3}x + \frac{7}{3} = \frac{1}{6}$ **b.** $\frac{1}{2}y - \frac{3}{4} = \frac{7}{8}$ **c.** $\frac{7}{2} - \frac{3}{10}x = -\frac{4}{5}$
1	**I understand the basic skills needed to begin learning this standard.** • Solve one-step equations.	Solve each equation. **a.** $x - 5 = -2$ **b.** $y + 1.5 = 1$ **c.** $3z = 12$ **d.** $\frac{m}{2} = -6$

Name _____ Date _____

Evidence-Based Scale Worksheets

Algebraic Reasoning
MA.7.AR.3.1 Apply previous understanding of percentages and ratios to solve multi-step real-world percent problems.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Write and solve a real-world percent problem that requires multiple steps to solve.	
3	**I understand the entire standard.** • Solve a multi-step real-world percent problem.	**a.** Your food total for dinner is $32.50. Sales tax is an additional $1.95. You leave a 20% tip on the food total. Find the percent of sales tax on the food total and the total amount you pay for dinner. **b.** The ratio of wins to losses for a baseball team is 4 : 5. What is the team's winning percentage?

Name _____ Date _____

MA.7.AR.3.1 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Solve percent problems.	Solve each problem. **a.** What percent of 60 is 27? **b.** What number is 40% of 250? **c.** 150% of what number is 21?
1	**I understand the basic skills needed to begin learning this standard.** • Understand how to write percents as decimals.	Write each percent as a decimal. **a.** 10% **b.** 79% **c.** 100% **d.** 150%

Name _____ Date _____

Evidence-Based Scale Worksheets

Algebraic Reasoning

MA.7.AR.3.2 Apply previous understanding of ratios to solve real-world problems involving proportions.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Write and solve a real-world problem that requires a proportion.	
3	**I understand the entire standard.** • Solve real-world problems involving proportions.	A factory can assemble 1500 phones during an 8-hour shift. Write and solve a proportion to find the number of phones that can be assembled in one day and in one week.

Name _____ Date _____

MA.7.AR.3.2 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Make a plan for how to solve real-world problems involving proportions.	Make a plan on how to write and solve the problem. A car drives 137 miles on 5 gallons of gas. How far can the car travel on a full 12.5-gallon tank of gas?
1	**I understand the basic skills needed to begin learning this standard.** • Solve proportions.	Solve each proportion. **a.** $\frac{x}{8} = \frac{42}{48}$ **b.** $\frac{y+1}{2} = \frac{24}{36}$ **c.** $\frac{4.5}{12.5} = \frac{2z}{15}$

Name _____ Date _____

Evidence-Based Scale Worksheets

Algebraic Reasoning
MA.7.AR.3.3 Solve mathematical and real-world problems involving the conversion of units across different measurement systems.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Write and solve a real-world problem that requires a conversion of units across different measurement systems.	
3	**I understand the entire standard.** • Solve real-world problems involving conversion of units across different measurement systems.	**a.** The average cost of gasoline in Canada is 1.15 Canadian dollars per liter. If 1 Canadian dollar is approximately 0.77 United States dollars, what is the cost in United States dollars per gallon? **b.** The speed of light is approximately 300,000,000 meters per second. What is the approximate speed in miles per hour?

Name _____ Date _____

MA.7.AR.3.3 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Solve mathematical problems involving conversion of units across different measurement systems.	Convert the unit of measure. Round to the nearest hundredth where applicable. **a.** Convert 8 kilograms to pounds. **b.** Convert 28 pints to liters. **c.** Convert 120 yards to meters.
1	**I understand the basic skills needed to begin learning this standard.** • Solve mathematical problems involving conversion of units across same measurement systems.	Convert the unit of measure. **a.** Convert 64 pounds to ounces. **b.** Convert 7.25 kilometers to meters. **c.** Convert 6 feet to inches. **d.** Convert 45,000 milliliters to liters.

Name _____ Date _____

Evidence-Based Scale Worksheets

Algebraic Reasoning
MA.7.AR.4.1 Determine whether two quantities have a proportional relationship by examining a table, graph or written description.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Describe two quantities in real life that are in a proportional relationship.	
3	**I understand the entire standard.** • Determine whether two quantities are in a proportional relationship.	Tell whether *x* and *y* are proportional. Explain your reasoning. **a.** **b.**

a.

x	0	1	2	3
y	0	3	6	9

b.

x	2	4	6	8
y	0	1	2	3

Name_____ Date _____

MA.7.AR.4.1 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Use a graph to represent the relationship between two quantities.	Represent the relationship between the quantities using a graph. | ***x*** | 1 | 2 | 3 | 4 | | ***y*** | 2 | 4 | 6 | 8 |
1	**I understand the basic skills needed to begin learning this standard.** • Determine whether ratios are equivalent.	Determine whether each pair of ratios are equivalent. **a.** 6 : 3 and 2 : 4 **b.** 4 : 12 and 3 : 9 **c.** 5 : 10 and 10 : 5

Name _____ Date _____

Evidence-Based Scale Worksheets

Algebraic Reasoning

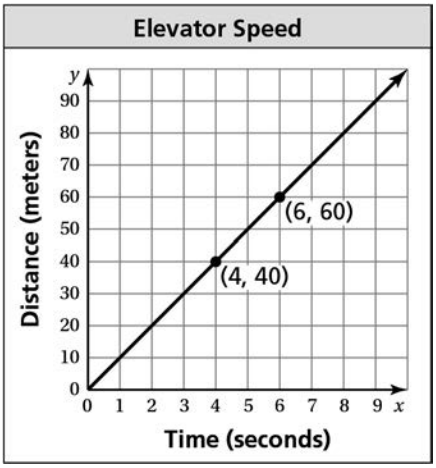
MA.7.AR.4.2 Determine the constant of proportionality within a mathematical or real-world context given a table, graph or written description of a proportional relationship.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Teach someone else to find the constant of proportionality between different relationships.	
3	**I understand the entire standard.** • Determine the constant of proportionality with a real-world context from a table, graph, or written description.	Identify the constant of proportionality in each proportional relationship. **a.**

Hours, *x*	1	2	3	4
Miles, *y*	35	70	105	140

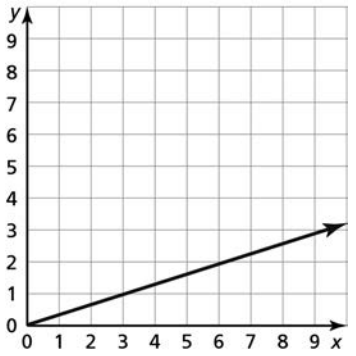
b.



c. A lava flow travels 20 feet every 10 minutes.

Name _____ Date _____

MA.7.AR.4.2 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Determine the constant of proportionality with a mathematical context from a table or a graph.	Identify the constant of proportionality in each proportional relationship. **a.** | ***x***	1	2	3	4
y	2.5	5	75	10	 **b.** 
1	**I understand the basic skills needed to begin learning this standard.** • Understand the definition of a unit rate.	Determine whether each rate is a unit rate. **a.** 5 cups : 2 cups **b.** 65 miles per hour **c.** $6 for every pound

Name _____ Date _____

Evidence-Based Scale Worksheets

Algebraic Reasoning
MA.7.AR.4.3 Given a mathematical or real-world context, graph proportional relationships from a table, equation or a written description.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Create a real-world context to graph a proportional relationship given a written description.	
3	**I understand the entire standard.** • Given a real-world context, graph proportional relationships based on the given information.	Graph the relationship. Label each axis. **a.** The equation $y = 10x$ represents the number of points scored *y* for answering *x* questions correctly in a game. **b.** Ten horses need 2 bales of hay, while 20 horses need 4 bales of hay.

Name _____ Date _____

MA.7.AR.4.3 (continued)

<table>
<tr><th></th><th>Description</th><th>Evidence</th></tr>
<tr><td>2</td><td>I understand some parts, but not the entire standard.
Given a mathematical context, graph proportional relationships based on the given information.</td><td>Graph the relationship.
a.<table><tr><td>x</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>y</td><td>2</td><td>4</td><td>6</td><td>8</td></tr></table>
b. $y = \frac{1}{4}x$</td></tr>
<tr><td>1</td><td>I understand the basic skills needed to begin learning this standard.
Determine whether two quantities are in a proportional relationship.
Identify the constant of proportionality in a proportional relationship.</td><td>Tell whether x and y are proportional. If so, identify the constant of proportionality.
a. $y = 3x$
b.<table><tr><td>x</td><td>4</td><td>5</td><td>6</td><td>7</td></tr><tr><td>y</td><td>3</td><td>5</td><td>7</td><td>9</td></tr></table></td></tr>
</table>

Name _____ Date _____

Evidence-Based Scale Worksheets

Algebraic Reasoning
MA.7.AR.4.4 Given any representation of a proportional relationship, translate the representation to a written description, table or equation.

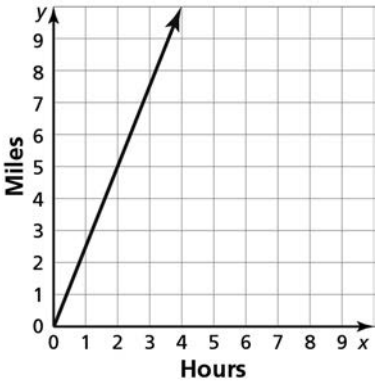
Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Explain the process of translating a proportional relationship to different forms.	Explain how to translate a proportional relationship to the following forms. **a.** Equation to table **b.** Written description to graph **c.** Graph to equation
3	**I understand the entire standard.** • Translate the representation of a proportional relationship to another form.	**a.** John earns \$116 for 8 hours of work and \$217.50 for 15 hours of work. Write an equation that represents the amount John earns, y, for working x hours. **b.** The table shows the number of points scored for correct answers in a game show. Write an equation that shows the relationship.

Correct questions, *x*	3	6	9	12
Points, *y*	24	48	72	96

Name _____ Date _____

MA.7.AR.4.4 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Make a plan for how to translate the representation of a proportional relationship to another form.	The graph shows the number of miles a child rides a bike. Explain how to translate the representation to a written description, table, or equation. 
1	**I understand the basic skills needed to begin learning this standard.** • Find the constant of proportionality.	Find the constant of proportionality for each proportional relationship. **a.** $y = \frac{1}{5}x$ **b.** | ***x*** | 2 | 5 | 8 | 11 | | ***y*** | 6 | 15 | 24 | 33 | **c.** When $x = 8$, $y = 12$ and when $x = 2$, $y = 3$.

Name _____ Date _____

Evidence-Based Scale Worksheets

Algebraic Reasoning
MA.7.AR.4.5 Solve real-world problems involving proportional relationships.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Create a real-world problem involving proportional relationships.	
3	**I understand the entire standard.** • Solve real-world problems involving proportional relationships.	**a.** The lockers in a school are blue and gold. There are 8 blue lockers for every 5 gold lockers. There are 200 gold lockers. How many blue lockers are there? **b.** Three bags of fertilizer cover 22,500 square feet. How many square feet are covered with 8 bags of fertilizer?

Name _____ Date _____

MA.7.AR.4.5 (continued)

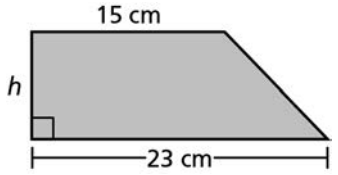
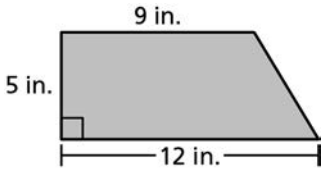
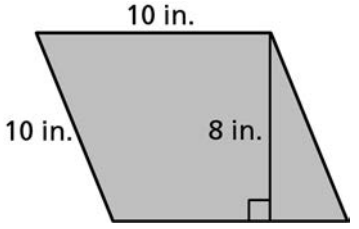
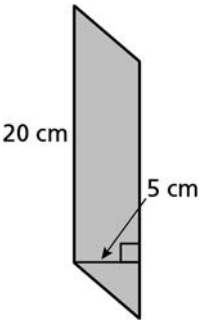
	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Make a plan for how to solve a real-world proportional problem.	The ratio of boys to girls at a school is $4:5$. If there are 810 students in the school, then how many boys and girls are there in the school? Explain how to translate the representation to a written description, table, or equation.
1	**I understand the basic skills needed to begin learning this standard.** • Solve proportions.	Solve the proportion. **a.** $\frac{4}{5} = \frac{a}{25}$ **b.** $\frac{36}{15} = \frac{12}{b}$ **c.** $\frac{c}{48} = \frac{9}{32}$

Name _____ Date _____

Evidence-Based Scale Worksheets

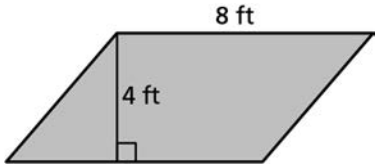
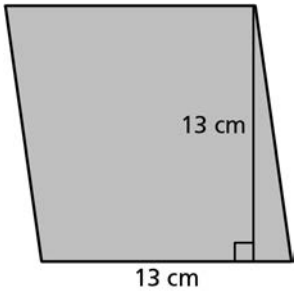
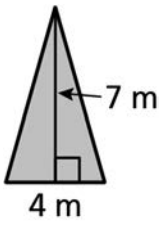
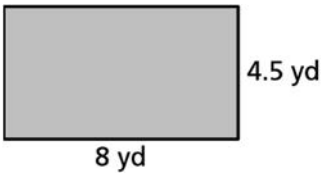
Geometric Reasoning
MA.7.GR.1.1 Apply formulas to find the areas of trapezoids, parallelograms and rhombi.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Find an unknown dimension of a trapezoid given the area.	Find the unknown dimension of the figure with an area of 114 square centimeters. 
3	**I understand the entire standard.** • Find the areas of trapezoids, parallelograms, and rhombi.	Find the area of each figure. **a.**  **b.**  **c.** 

Name _____ Date _____

MA.7.GR.1.1 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Find the area of a quadrilateral made up of squares, rectangles, and triangles.	Find the area of each figure. **a.**  **b.** 
1	**I understand the basic skills needed to begin learning this standard.** • Find areas of triangles and rectangles.	Find the area of each figure. **a.**  **b.** 

Name _____ Date _____

Evidence-Based Scale Worksheets

Geometric Reasoning

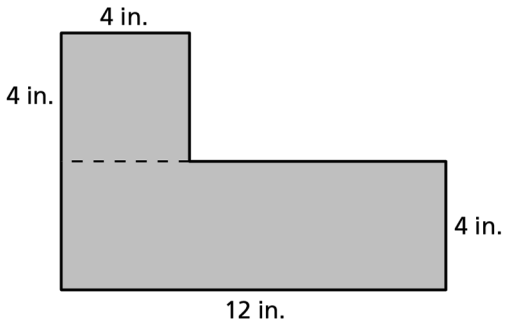
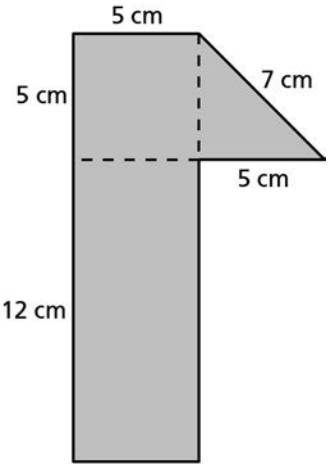
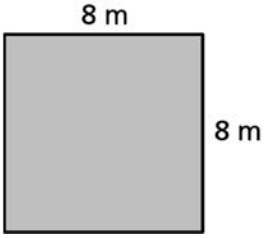
MA.7.GR.1.2 Solve mathematical or real-world problems involving the area of polygons or composite figures by decomposing them into triangles or quadrilaterals.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Write and solve a real-world problem that involves finding areas of composite figures.	
3	**I understand the entire standard.** • Solve a real-world problem involving areas of polygons or composite figures by decomposing them into triangles or quadrilaterals.	A room is to be painted with 2 coats of paint. All walls have a height of 10 feet. Two walls have a length of 18 feet, and the other two walls have a length of 14 feet. There are two windows that are 4 feet by 4 feet and one door that is 3 feet by 7 feet that is not painted. If one quart of paint covers 100 square feet, how many quarts are needed?

Name _____ Date _____

MA.7.GR.1.2 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Solve mathematical problems involving areas of polygons or composite figures by decomposing them into triangles or quadrilaterals.	Find the area of each figure. **a.**  **b.** 
1	**I understand the basic skills needed to begin learning this standard.** • Find areas of quadrilaterals.	Find the area of each figure. **a.**  **b.** 

Name _____ Date _____

Evidence-Based Scale Worksheets

Geometric Reasoning

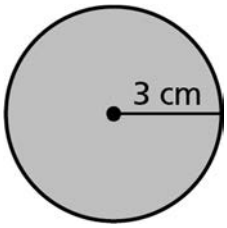
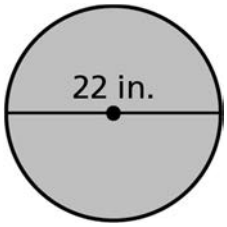
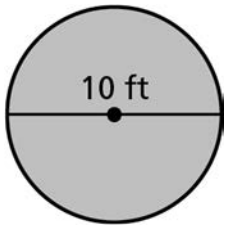
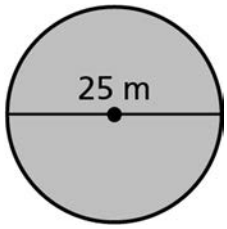
MA.7.GR.1.3 Explore the proportional relationship between circumferences and diameters of circles. Apply a formula for the circumference of a circle to solve mathematical and real-world problems.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Teach someone the proportional relationships between the circumference and the diameter of a circle.	
3	**I understand the entire standard.** • Solve a real-world problem involving the circumference of a circle.	You install a circular pool. The radius of a circular pool cover is 12 feet. You install a fence around the pool so that there is 5 feet between the pool and the fence. The fence costs $3.75 per foot. About how much do you pay for the fence?

Name _____ Date _____

MA.7.GR.1.3 (continued)

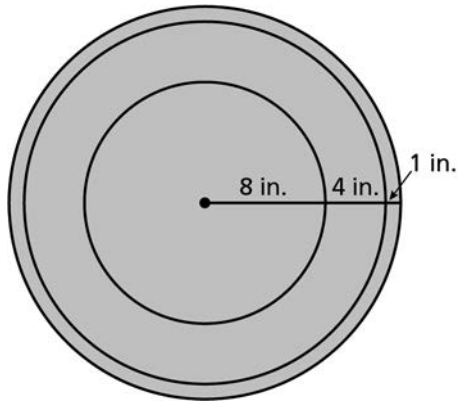
	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Find circumferences of circles.	Find the circumference of each circle. **a.**  **b.** 
1	**I understand the basic skills needed to begin learning this standard.** • Find the radius of a circle.	Find the radius of each circle. **a.**  **b.** 

Name _____ Date _____

Evidence-Based Scale Worksheets

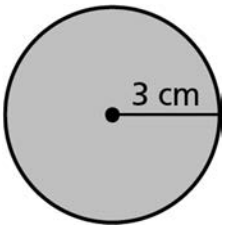
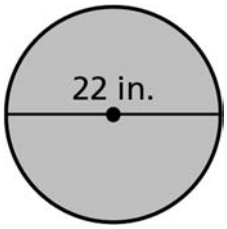
Geometric Reasoning
MA.7.GR.1.4 Explore and apply a formula to find the area of a circle to solve mathematical and real-world problems.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Solve a real-world problem involving the circumference and the area of a circle.	A circular garden is to be dug with a diameter of 16 feet. There is to be a 1-foot border around the garden. **a.** What is the circumference of the garden? **b.** What is the area of the garden?
3	**I understand the entire standard.** • Solve a real-world problem involving the area of a circle.	A target for a game is shown.  **a.** What is the area of the outer ring? **b.** What is the area of the middle ring?

Name _____ Date _____

MA.7.GR.1.4 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Find areas of circles.	Find the area of each circle. **a.**  **b.** 
1	**I understand the basic skills needed to begin learning this standard.** • Simplify expressions with exponents.	Simplify each expression. **a.** $3(4)^2$ **b.** $3.1(5)^2$ **c.** $3.14(10)^2$

Name _____ Date _____

Evidence-Based Scale Worksheets

Geometric Reasoning
MA.7.GR.1.5 Solve mathematical and real-world problems involving dimensions and areas of geometric figures, including scale drawings and scale factors.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Create a blueprint of a room in a house on graph paper. Write a problem to find the dimensions and the area of the room.	
3	**I understand the entire standard.** • Solve a real-world problem involving dimensions and areas of geometric figures, including scale drawings.	A scale drawing of the bottom of a rectangular pool has a scale of 2 cm : 5 m. The dimensions of the scale drawing are 10 centimeters by 5 centimeters. **a.** What is the area of the scale drawing? **b.** What is the area of the bottom of the pool?

Name _____ Date _____

MA.7.GR.1.5 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Solve a mathematical problem involving dimensions of geometric figures, including scale drawings.	A map has a scale of 1 in. : 80 mi. **a.** On the map, two cities are 3.5 inches apart. What is the actual distance between the two cities? **b.** Two cities are 500 miles apart. What is the distance between the two cities on a map?
1	**I understand the basic skills needed to begin learning this standard.** • Solve proportions.	Solve each proportion. **a.** $\frac{x}{2} = \frac{1}{4}$ **b.** $\frac{4}{5} = \frac{x}{15}$ **c.** $\frac{8}{x} = \frac{2}{5}$

Name _____ Date _____

Evidence-Based Scale Worksheets

Geometric Reasoning

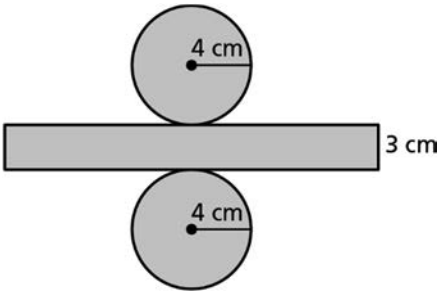
MA.7.GR.2.1 Given a mathematical or real-world context, find the surface area of a right circular cylinder using the figure's net.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Write a real-world problem to find the surface area of a cylinder using the figure's net.	
3	**I understand the entire standard.** • Find the surface area of a cylinder using the figure's net in a real-world context.	A cylindrical water bottle is shown. Find the surface area of the water bottle. 

Name _____ Date _____

MA.7.GR.2.1 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Find the surface area of a cylinder using the figure's net in a mathematical context.	Use the net to find the surface area of the cylinder. 
1	**I understand the basic skills needed to begin learning this standard.** • Simplify algebraic expressions that involve π.	Simplify each expression. **a.** $2\pi(12)^2 + 2\pi(12)(3)$ **b.** $2\pi(7.5)^2 + 2\pi(7.5)(20)$

Name _____ Date _____

Evidence-Based Scale Worksheets

Geometric Reasoning
MA.7.GR.2.2 Solve real-world problems involving surface area of right circular cylinders.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Given the surface area of a cylinder, find the height and the radius of the cylinder.	The surface area of a cylinder is 1000π square centimeters. The height is 4 times the radius. Find the height and the radius.
3	**I understand the entire standard.** • Solve a real-world problem involving the surface areas of cylinders.	**a.** The diameter of a cylindrical soup can is 8 inches and has a height of 6 inches. Find the amount of material needed to make the can. **b.** A large cylindrical container has a diameter of 5 feet and a height of 3.5 feet. Find the amount of material needed to make the container.

Name _____ Date _____

MA.7.GR.2.2 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Make a plan for how to find the surface area of a cylinder in a real-world problem.	Make a plan for how to find the surface area of a cylinder. A wheel of cheese is in the shape of a cylinder. The height of the wheel is 2.5 centimeters and the diameter is 18 centimeters.
1	**I understand the basic skills needed to begin learning this standard.** • Find the surface area of a cylinder given the radius and the height.	Find the surface area of a cylinder with the given dimensions. **a.** radius = 8 feet, height = 20 feet **b.** radius = 6 inches, height = 5 inches

Name _____ Date _____

Evidence-Based Scale Worksheets

Geometric Reasoning
MA.7.GR.2.3 Solve mathematical and real-world problems involving volume of right circular cylinders.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Given the surface area and the radius of a cylinder, find the volume of the cylinder.	The surface area of a cylinder is approximately 2034.72 square centimeters. Find the volume of the cylinder if the radius is 12 centimeters.
3	**I understand the entire standard.** • Solve a real-world problem involving the volume of a cylinder.	**a.** The diameter of a cylindrical soup can is 8 inches and has a height of 6 inches. The can is 90% full. Find the amount of soup that the can holds. **b.** A large cylindrical container has a diameter of 5 feet and a height of 3.5 feet. Find the number of gallons the container holds. (1 ft^3 is approximately 7.5 gallons)

Name _____ Date _____

MA.7.GR.2.3 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Solve a mathematical problem involving the volume of a cylinder.	Find the volume of a cylinder with the given dimensions. **a.** radius = 8 feet, height = 20 feet **b.** diameter = 12 inches, height = 5 inches
1	**I understand the basic skills needed to begin learning this standard.** • Evaluate expressions.	Evaluate each expression. **a.** $(6^2)9$ **b.** $3(4^2)5.5$ **c.** $3.14(10^2)8$

Name _____ Date _____

Evidence-Based Scale Worksheets

Data Analysis and Probability

MA.7.DP.1.1 Determine an appropriate measure of center or measure of variation to summarize numerical data, represented numerically or graphically, taking into consideration the context and any outliers.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Explain which measures of center and variation can be determined when using different graphical representations.	Explain which measures of center and spread can be identified for a histogram, line plot, box plot, and stem-and-leaf plots.
3	**I understand the entire standard.** • Determine an appropriate measure of center to summarize numerical data. • Determine an appropriate measure of variation to summarize numerical data.	The stem and leaf plot shows the leading scorer in the last 15 basketball games. Stem | Leaf 1 | 5 2 | 4 5 5 7 7 8 9 3 | 0 0 1 2 3 5 8 Key: 1|5 = 15 **a.** Determine an appropriate measure of center to summarize the numerical data. Explain your reasoning. **b.** Determine an appropriate measure of variation to summarize the numerical data. Explain your reasoning.

Name _____ Date _____

MA.7.DP.1.1 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Make a plan to determine the appropriate measures of center and variation from numerical data.	Make a plan to determine the appropriate measures of center and variation for the data set. 100, 110, 150, 140, 130, 170, 160, 180, 190
1	**I understand the basic skills needed to begin learning this standard.** • Find the mean, median, range, and interquartile range of numerical data.	Find the mean, median, range, and interquartile range of the data set. 18, 24, 15, 25, 24, 23, 22, 19, 21, 20

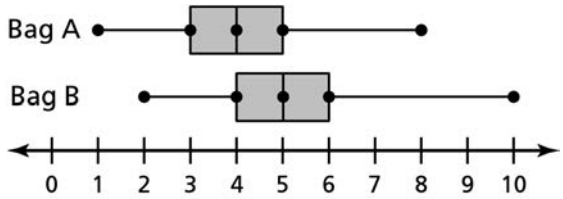
Name _____ Date _____

Evidence-Based Scale Worksheets

Data Analysis and Probability

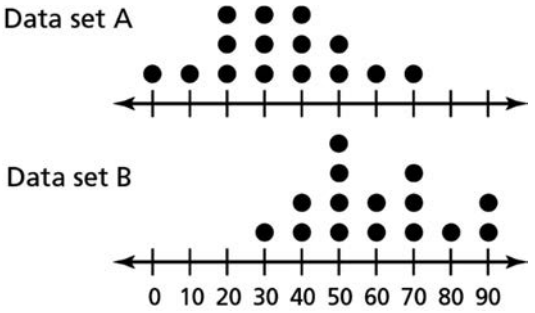
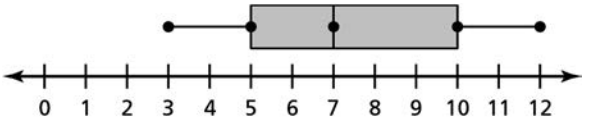
MA.7.DP.1.2 Given two numerical or graphical representations of data, use the measure(s) of center and measure(s) of variability to make comparisons, interpret results and draw conclusions about the two populations.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Write a real-world problem involving two populations with similar measures of center but greatly different measures of variation.	
3	**I understand the entire standard.** • Determine appropriate measures of center and variation to summarize numerical data of two population and draw conclusions.	Two bags each contain 500 numbered tiles. The double box-and-whisker plot represents a random sample of 10 numbers from each bag.  Compare the samples using measures of center and variability. Can you determine which bag contains tiles with greater numbers? Explain.

Name _____ Date _____

MA.7.DP.1.2 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Make a plan to summarize two sets of numerical data when given data values graphically.	Make a plan to determine the appropriate measures of center and variation from the double dot plot. 
1	**I understand the basic skills needed to begin learning this standard.** • Read a box-and-whisker plot.	Find the median and interquartile range of the data represented by the box-and-whisker plot. 

Name _____ Date _____

Evidence-Based Scale Worksheets

Data Analysis and Probability
MA.7.DP.1.3 Given categorical data from a random sample, use proportional relationships to make predictions about a population.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Create a short survey and ask a random sample of 7th graders. Then draw conclusions about the populations using the total number of students in the 7th grade.	
3	**I understand the entire standard.** • Given categorical data from a random sample, use proportional relationships to make predictions about a population.	**a.** You ask 50 randomly chosen students at a school whether they can swim the length of a pool. Thirty-eight students say they can. There are 900 students in the school. Estimate the number of students in the school that can swim the length of a pool. **b.** You ask 40 randomly chosen employees at a company whether they use public transportation to get to work. Twelve people say yes. The company has 220 employees. Estimate the number of employees that use public transportation to get to work.

Name_____ Date _____

MA.7.DP.1.3 (continued)

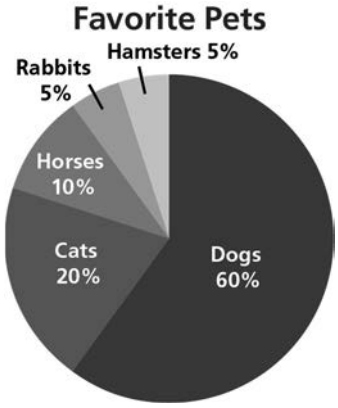
	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Given categorical data from a random sample, find a percent of the sample.	**a.** You randomly select 2000 screws and find that 12 were defective. Find the percent of screws that are defective. **b.** You ask 150 students about their favorite sports. Eighty students say basketball. Find the percent of students that say basketball.
1	**I understand the basic skills needed to begin learning this standard.** • Find missing values in equivalent ratios.	Find the value of x so that each pair of ratios is equivalent. **a.** 2 : 4 and x : 8 **b.** 12 : 50 and x : 600

Name _____ Date _____

Evidence-Based Scale Worksheets

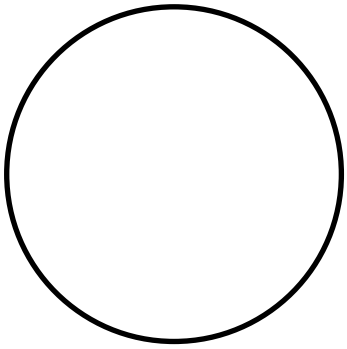
Data Analysis and Probability
MA.7.DP.1.4 Use proportional reasoning to construct, display and interpret data in circle graphs.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Ask students in class a questions about a topic. Then create a circle graph from the data presented in class.	
3	**I understand the entire standard.** • Use proportional reasoning to interpret data in circle graphs.	The data in the circle graph shows the favorite animals of 7th graders. There are 10 students who favor cats.  **a.** How many 7th-grade students are there? **b.** What is the probability that a randomly chosen 7th-grade student likes dogs?

Name_____ Date _____

MA.7.DP.1.4 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Construct a circle graph for the data.	Construct a circle graph for the data set. **Favorite Vegetable** / **Respondents** Carrots: 40 Peas: 16 Corn: 20 Potatoes: 9 Green Beans: 15 
1	**I understand the basic skills needed to begin learning this standard.** • Solve proportions.	Solve the proportions for *x*. **a.** $\frac{20}{200} = \frac{x}{360}$ **b.** $\frac{75}{100} = \frac{x}{360}$ **c.** $\frac{120}{500} = \frac{x}{360}$

Name _____ Date _____

Evidence-Based Scale Worksheets

Data Analysis and Probability
MA.7.DP.1.5 Given a real-world numerical or categorical data set, choose and create an appropriate graphical representation.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Explain what a histogram, bar graph, circle graph, line plot, box plot, and stem-and-leaf plot show in a data set.	Explain what a histogram, bar graph, circle graph, line plot, box plot, and stem-and-leaf plot show in a data set.
3	**I understand the entire standard.** • Given a real-world numerical or categorical data set, create an appropriate data display to represent the data.	Create an appropriate data display to represent the data. **a.** **b.**

a.

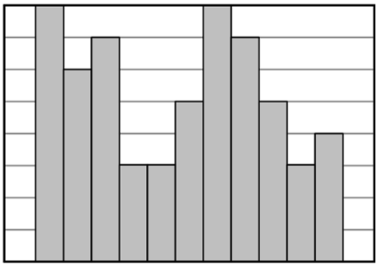
Birthday Months of Employees			
Jan.	4	Jul.	5
Feb.	3	Aug.	3
Mar.	5	Sept.	3
Apr.	7	Oct.	7
May	8	Nov.	6
Jun.	2	Dec.	8

b.

Number of Vacation Days for Employees			
8	10	12	9
16	14	15	17
19	20	25	7
21	22	23	16
24	11	5	6

Name _____ Date _____

MA.7.DP.1.5 (continued)

<table>
<tr><th></th><th>Description</th><th>Evidence</th></tr>
<tr><td>2</td><td>I understand some parts, but not the entire standard.
Given a real-world numerical or categorical data set, make a plan for how to create an appropriate data display to represent the data.</td><td>Make a plan for how to create an appropriate data display to represent the data.
a.<table><tr><th colspan="4">Quiz Scores</th></tr><tr><td>20</td><td>15</td><td>17</td><td>18</td></tr><tr><td>16</td><td>14</td><td>15</td><td>17</td></tr><tr><td>18</td><td>12</td><td>13</td><td>15</td></tr><tr><td>16</td><td>20</td><td>20</td><td>19</td></tr><tr><td>19</td><td>20</td><td>18</td><td>15</td></tr></table>b.<table><tr><th colspan="4">Books Read by a Class</th></tr><tr><td>30</td><td>18</td><td>9</td><td>16</td></tr><tr><td>34</td><td>15</td><td>25</td><td>8</td></tr><tr><td>11</td><td>16</td><td>19</td><td>22</td></tr><tr><td>33</td><td>31</td><td>7</td><td>11</td></tr><tr><td>22</td><td>24</td><td>25</td><td>21</td></tr></table></td></tr>
<tr><td>1</td><td>I understand the basic skills needed to begin learning this standard.
Identify the type of data display.</td><td>Identify the type of data display.
a. 
b.  </td></tr>
</table>

Name _____ Date _____

Evidence-Based Scale Worksheets

Data Analysis and Probability
MA.7.DP.2.1 Determine the sample space for a simple experiment.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Create a simple experiment where the sample space needs to be determined.	
3	**I understand the entire standard.** • Determine the sample space for an experiment.	**a.** You roll one six-sided number cube. Find the sample space. **b.** You roll two six-sided number cubes. Find the sample space.

Name_____ Date _____

MA.7.DP.2.1 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Determine the sample space for a simple experiment.	**a.** You flip one coin. Find the sample space. **b.** You flip two coins. Find the sample space.
1	**I understand the basic skills needed to begin learning this standard.** • Define sample space.	Define sample space.

Name _____ Date _____

Evidence-Based Scale Worksheets

Data Analysis and Probability
MA.7.DP.2.2 Given the probability of a chance event, interpret the likelihood of it occurring. Compare the probabilities of chance events.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Describe real-life events with a given likelihood.	Describe a real-life event that is impossible, a real-life event that is neither unlikely nor likely, and a real-life event that is certain.
3	**I understand the entire standard.** • Understand probability and describe the likelihood of an event.	There is a 90% chance a team wins their last game, a 50% chance they win their division, and a 10% chance they win the championship. Describe the likelihood of each event. **a.** The team wins their last game. **b.** The team wins their division. **c.** The team wins the championship.

Name _____ Date _____

MA.7.DP.2.2 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Understand that the probability of an event is a number between 0 and 1 that expresses the likelihood of the event.	A meteorologist includes the probability that it will rain tomorrow in her weather forecast. Decide which numbers represent possible probabilities. 50% 0 150% –20% $1\frac{1}{2}$ 0.01 –0.8 1.25 $\frac{49}{100}$
1	**I understand the basic skills needed to begin learning this standard.** • Write decimals as fractions and percents.	Write each decimal as a fraction and a percent. **a.** 0.6 **b.** 0.38 **c.** 0.07

Name _____ Date _____

Evidence-Based Scale Worksheets

Data Analysis and Probability
MA.7.DP.2.3 Find the theoretical probability of an event related to a simple experiment.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Create a simple experiment problem and write problems to find the theoretical probability.	
3	**I understand the entire standard.** • Find the theoretical probability of an event related to a simple experiment.	There are 10 blue marbles, 6 red marbles, 12 green marbles, and 2 orange marbles. One marble is selected and replaced. Find the following theoretical probabilities. **a.** blue marble **b.** not a green marble. **c.** orange marble two times in a row

Name _____ Date _____

MA.7.DP.2.3 (continued)

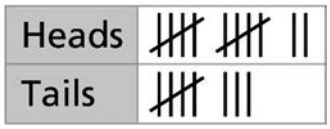
	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Make a plan to find the theoretical probability of an event related to a simple experiment.	There are red, green, yellow, and orange cards in a deck. For each color, there is a number card from 0 to 9. Make a plan to find the theoretical probability of an event related to a simple experiment.
1	**I understand the basic skills needed to begin learning this standard.** • Write fractions as decimals and percents.	Write each fraction as a decimal and a percent. **a.** $\frac{2}{5}$ **b.** $\frac{2}{3}$ **c.** $\frac{11}{16}$

Name _____ Date _____

Evidence-Based Scale Worksheets

Data Analysis and Probability
MA.7.DP.2.4 Use a simulation of a simple experiment to find experimental probabilities and compare them to theoretical probabilities.

Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence
4	**I can go beyond the standard.** • Use collected data from a chance event to approximate the probability of the event.	
3	**I understand the entire standard.** • Use a simulation of a simple experiment to find experimental probabilities and compare them to theoretical probabilities.	You flip a coin 20 times and record the number of times it lands on heads and tails.  **a.** What is the experimental probability that the coin lands on heads? Compare the probability to the theoretical probability. **b.** How many times would you expect the coin to land on heads in 200 flips, based on the experiment?

Name _____ Date _____

MA.7.DP.2.4 (continued)

	Description	Evidence
2	**I understand some parts, but not the entire standard.** • Find the probability of an event.	**a.** A student is selected at random in a class that has 13 girls and 12 boys. What is the probability that a girl is chosen? **b.** There are 15 red marbles, 10 blue marbles, and 5 green marbles in a bag. What is the probability of selecting a green marble?
1	**I understand the basic skills needed to begin learning this standard.** • Find products of rational numbers.	Find each product. **a.** 0.75(100) **b.** $\frac{1}{2} \cdot 80$ **c.** $\frac{3}{10} \times 150$