

**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	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> 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	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Apply the Laws of Exponents to rewrite the expression as a power. 	<p>Simplify each expression. Write your answer as a power.</p> <p>a. $\left(\left(\frac{5}{8}\right)^4\right)^9$</p> <p>b. $\frac{(-1.7)^8}{(-1.7)^3}$</p> <p>c. $(0.2)^5 \cdot (0.2)^7$</p>

MA.7.NSO.1.1 (continued)

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none">Evaluate numerical expressions with whole-number exponents and rational number bases.	<p>Evaluate each expression.</p> <p>a. 0.6^3</p> <p>b. $\left(-\frac{1}{9}\right)^2$</p> <p>c. $-\left(\frac{2}{5}\right)^4$</p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none">Evaluate numerical expressions with whole-number exponents and whole number bases.	<p>Evaluate each expression.</p> <p>a. 3^4</p> <p>b. 1^5</p> <p>c. 4^3</p>

**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	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Write a real-world problem that requires rewriting rational numbers in different, but equivalent forms. 	
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Solve a real-world problem that requires rewriting rational numbers. 	<p>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.</p>

MA.7.NSO.1.2 (continued)


	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> • Rewrite rational numbers in different forms. 	<p>a. Write $1.\bar{1}$ as a fraction.</p> <p>b. Write $2\frac{3}{11}$ as a decimal.</p> <p>c. Write $16\frac{2}{3}\%$ as a fraction.</p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> • Write fractions as decimals and percents. 	<p>Write each fraction as a decimal and a percent.</p> <p>a. $\frac{7}{10}$</p> <p>b. $\frac{81}{100}$</p> <p>c. $\frac{829}{1000}$</p>

Evidence-Based Scale Worksheets


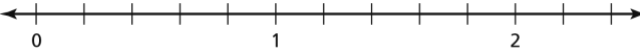
Number Sense and Operations

MA.8.NSO.1.1 Extend previous understanding of rational numbers to define irrational numbers within the real number system. Locate an approximate value of a numerical expression involving irrational numbers on a number line.

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

	Description	Evidence															
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Teach someone else how to define irrational numbers and locate approximate values of a numerical expression involving irrational numbers on a number line. 																
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Define irrational numbers within the real number system. Locate approximate values of irrational numbers on a number line. Approximate numerical expressions involving irrational numbers. 	<p>a. Classify each real number.</p> <table border="1" data-bbox="836 957 1474 1310"> <thead> <tr> <th>Number</th> <th>Subset(s)</th> <th>Reasoning</th> </tr> </thead> <tbody> <tr> <td>$\sqrt{17}$</td> <td></td> <td></td> </tr> <tr> <td>$-\sqrt{64}$</td> <td></td> <td></td> </tr> <tr> <td>$\sqrt[3]{27}$</td> <td></td> <td></td> </tr> <tr> <td>$-0.\overline{13}$</td> <td></td> <td></td> </tr> </tbody> </table> <p>b. Locate $\sqrt{41}$ on a number line and approximate it to the nearest tenth.</p>  <p>c. What is the sum of 2 and $\sqrt{28}$ to the nearest tenth?</p>	Number	Subset(s)	Reasoning	$\sqrt{17}$			$-\sqrt{64}$			$\sqrt[3]{27}$			$-0.\overline{13}$		
Number	Subset(s)	Reasoning															
$\sqrt{17}$																	
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$-0.\overline{13}$																	

MA.8.NSO.1.1 (continued)

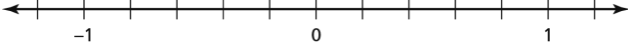
	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> • Locate approximate values of irrational numbers on a number line to the nearest integer. 	<p>Locate $\sqrt{41}$ on a number line and approximate it to the nearest integer.</p> 
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> • Write repeating decimals as fractions and mixed numbers. • Locate decimals on a number line. 	<p>a. Write $0.\bar{5}$ as a fraction or a mixed number.</p> <p>b. Write $2.\bar{24}$ as a fraction or a mixed number.</p> <p>c. Locate 0.8 and 1.4 on the number line.</p> 

Evidence-Based Scale Worksheets

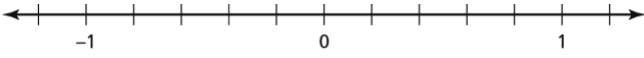
Number Sense and Operations

MA.8.NSO.1.2 Plot, order and compare rational and irrational numbers, represented in various forms.

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

	Description	Evidence
<p>4</p>	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Teach someone else how to plot, order, and compare rational and irrational numbers. 	
<p>3</p>	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Compare and order rational and irrational numbers using a number line and using the symbols $<$, $>$, or $=$. 	<p>a. Plot the real numbers using the number line. Then order the numbers from least to greatest.</p> <p>$\frac{3}{5}, 0.\bar{4}, -\frac{2}{3}, 0.8, \frac{6}{5}, -0.2$</p>  <p>b. Compare the real numbers using the symbols $<$, $>$, or $=$.</p> <p>$\frac{3}{8} \square \frac{4}{5}$</p> <p>$-0.4 \square -0.\bar{4}$</p> <p>$\sqrt{3} \square \sqrt[3]{4}$</p>

MA.8.NSO.1.2 (continued)

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Compare fractions and decimals using $<$, $>$, or $=$. 	<p>Compare using the symbols $<$, $>$, or $=$.</p> <p>a. $\frac{2}{5} \square \frac{3}{10}$</p> <p>b. $-0.254 \square -0.26$</p> <p>c. $18.5 \square \frac{37}{2}$</p> <p>d. $3\frac{4}{5} \square 3.82$</p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Plot fractions, decimals, and whole numbers on a number line. 	<p>Plot the following numbers on a number line.</p> <p style="text-align: center;">$\frac{1}{5}, 0.8, -\frac{2}{5}, 1, -0.6$</p> 

Evidence-Based Scale Worksheets

Number Sense and Operations

MA.8.NSO.1.3 Extend previous understanding of the Laws of Exponents to include integer exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions, limited to integer exponents and rational number bases, with procedural fluency.

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

	Description	Evidence
<p>4</p>	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> • Create and solve a real-world problem involving applying the Laws of Exponents to evaluate numerical expressions. 	
<p>3</p>	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> • Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions. 	<p>a. Evaluate each expression. Write your answer as a fraction or a whole number without exponents.</p> <p>3^{-2}</p> <p>$\frac{5^6}{5^4}$</p> <p>$\frac{2^7}{2^9}$</p> <p>b. Select all the expressions that are equivalent to the first expression.</p> <p>$8^3 \cdot 8^0$ $\frac{1}{8^3}, \frac{1}{8^{-3}}, 8^3$</p> <p>$\frac{12^{-3}}{6^{-3}}$ $\frac{1}{2^{-3}}, 2^{-3}, \frac{1}{2^3}, 2$</p> <p>$2^4 \cdot 2^{-7}$ $\frac{1}{8}, 8, \frac{1}{2^{-3}}, 2^{-3}$</p>

MA.8.NSO.1.3 (continued)

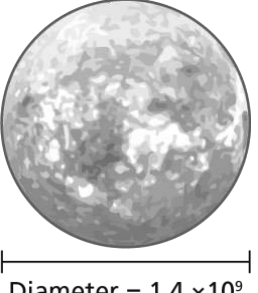
	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none">Apply the Laws of Exponents to evaluate numerical expressions.	<p>Evaluate each expression. Write your answer as a fraction or a whole number without exponents.</p> <p>a. 2^{-4}</p> <p>b. $\frac{6^8}{6^5}$</p> <p>c. $\frac{5^7}{5^9}$</p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none">Apply the Laws of Exponents using whole number exponents to simplify numerical expressions.	<p>Simplify the expression. Write your answer with an exponent.</p> <p>a. $3^3 \cdot 3^5$</p> <p>b. $(2^3)^2$</p> <p>c. $\frac{4^5}{4^3}$</p>

Evidence-Based Scale Worksheets

Number Sense and Operations

MA.8.NSO.1.4 Express numbers in scientific notation to represent and approximate very large or very small quantities. Determine how many times larger or smaller one

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

	Description	Evidence								
<p>4</p>	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Solve real-world problems by expressing numbers in scientific notation to represent and approximate very large or very small quantities. 	<p>The table shows the number of years since the last three geologic eras began. Write the numbers in scientific notation, and then order the eras from youngest to the oldest.</p> <table border="1" data-bbox="836 659 1474 945"> <thead> <tr> <th data-bbox="836 659 1155 730">Era</th> <th data-bbox="1155 659 1474 730">Began</th> </tr> </thead> <tbody> <tr> <td data-bbox="836 730 1155 802">Paleozoic Era</td> <td data-bbox="1155 730 1474 802">542,000,000</td> </tr> <tr> <td data-bbox="836 802 1155 873">Cenozoic Era</td> <td data-bbox="1155 802 1474 873">65,500,000</td> </tr> <tr> <td data-bbox="836 873 1155 945">Mesozoic Era</td> <td data-bbox="1155 873 1474 945">251,000,000</td> </tr> </tbody> </table>	Era	Began	Paleozoic Era	542,000,000	Cenozoic Era	65,500,000	Mesozoic Era	251,000,000
Era	Began									
Paleozoic Era	542,000,000									
Cenozoic Era	65,500,000									
Mesozoic Era	251,000,000									
<p>3</p>	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Express numbers in scientific notation to represent and approximate very large or very small quantities. Determine how many times larger or smaller one number is compared to a second number. 	<p>a. Write the number in scientific notation.</p> <p>601,000,000</p> <p>0.000000352</p> <p>7800</p> <p>b. The <i>diameter</i> of the Sun is shown. The diameter of Mercury is about 4.88×10^6 meters. How many times greater is the diameter of the Sun than the diameter of Mercury? Round your answer to the nearest whole number.</p> 								

MA.8.NSO.1.4 (continued)

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> • Express numbers in scientific notation to represent and approximate very large or very small quantities. 	<p>Write the number in scientific notation.</p> <p>a. 538,000,000</p> <p>b. 0.00000214</p> <p>c. 325</p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> • Multiply whole numbers by powers of 10. 	<p>Multiply.</p> <p>a. 43×10^3</p> <p>b. 24×10^2</p> <p>c. 672×10^5</p>

Number Sense and Operations**MA.8.NSO.1.5** Add, subtract, multiply and divide numbers expressed in scientific notation with procedural fluency.**Circle the scale that best demonstrates your knowledge of the standard.**

	Description	Evidence
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Solve real-world problems by adding, subtracting, multiplying, or dividing numbers expressed in scientific notation. 	<p>The thickness of a dime is 0.135 cm. The thickness of a dollar bill is 1.09×10^{-2} cm.</p> <ol style="list-style-type: none"> How many times greater is the thickness of a dime than the thickness of a dollar bill? What is the thickness of 200 one-dollar bills? What is the total thickness of 10 quarters and 10 one-dollar bills? What is the difference in the thickness between 10 quarters and 10 one-dollar bills?
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Add and subtract numbers expressed in scientific notation. Multiply and divide numbers expressed in scientific notation. 	<ol style="list-style-type: none"> Find the sum or difference. $(6.3 \times 10^8) + (5 \times 10^6)$ $(3.1 \times 10^{-7}) - (2.1 \times 10^{-7})$ $(4 \times 10^2) + (9.8 \times 10^3)$ Find the product. $(5 \times 10^{-8}) \times (6 \times 10^{10})$ $(2.4 \times 10^4) \times (0.08 \times 10^{-6})$ $(4.6 \times 10^5) \times (3 \times 10^9)$ Find the quotient. $(1.6 \times 10^{-7}) \div (5 \times 10^{-8})$ $(15 \times 10^4) \div (3 \times 10^{-5})$ $(2 \times 10^{10}) \div (0.2 \times 10^6)$

MA.8.NSO.1.5 (continued)

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> • Add and subtract numbers expressed in scientific notation. 	<p>Find the sum or difference.</p> <p>a. $(5.3 \times 10^9) + (5 \times 10^9)$</p> <p>b. $(6.1 \times 10^{-5}) - (2.5 \times 10^{-5})$</p> <p>c. $(3 \times 10^3) + (9.8 \times 10^2)$</p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> • Express numbers in scientific notation to represent and approximate very large or very small quantities. 	<p>Write the number in scientific notation.</p> <p>a. 451,000,000</p> <p>b. 0.00000000515</p> <p>c. 43,600</p>

**Evidence-
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Number Sense and Operations

MA.8.NSO.1.6 Solve real-world problems involving operations with numbers expressed in scientific notation.

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

	Description	Evidence
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> • Create a word problem and then teach someone how to solve real-world problems involving operations with numbers expressed in scientific notation. 	
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> • Solve real-world problems involving operations with numbers expressed in scientific notation. 	<p>The mass of the Earth is about 5.97×10^{24} kg. The mass of the moon is about 7.34×10^{22} kg.</p> <p>a. What is the combined mass of the Earth and the moon? Express your answer in scientific notation.</p> <p>b. How many times as great is the mass of the Earth as the mass of the moon? Express your answer in scientific notation.</p>

MA.8.NSO.1.6 (continued)

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none">• Add, subtract, multiply, and divide numbers expressed in scientific notation.	<p>Evaluate.</p> <p>a. $(5.6 \times 10^3) + (2 \times 10^4)$</p> <p>b. $(5.6 \times 10^3) - (2 \times 10^4)$</p> <p>c. $(5.6 \times 10^3) \times (2 \times 10^4)$</p> <p>d. $(5.6 \times 10^3) \div (2 \times 10^4)$</p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none">• Add, subtract, multiply, and divide very large and very small numbers and express the answers in scientific notation.	<p>Simplify. Write your answer in scientific notation.</p> <p>a. $600,000,000 + 50,000,000$</p> <p>b. $0.000000479 - 0.000000055$</p> <p>c. $10,100 \times 5000$</p> <p>d. $68 \div 0.0002$</p>

Evidence-Based Scale Worksheets

Number Sense and Operations

MA.8.NSO.1.7 Solve multi-step mathematical and real-world problems involving the order of operations with rational numbers including exponents and radicals.

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

	Description	Evidence
<p>4</p>	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Teach someone how to solve multi-step mathematical and real-world problems involving the order of operations with rational numbers including exponents and radicals. 	
<p>3</p>	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Solve multi-step mathematical and real-world problems involving the order of operations with rational numbers including exponents and radicals. 	<p>a. Simplify.</p> $10 + \frac{1}{5} \times \sqrt{(3^2 + 4^2)}$ $12 + \frac{\sqrt[3]{64}}{2} \div \left(-\frac{1}{4}\right)^2$ $\frac{(3^2 \cdot 12 - 12)}{\sqrt[3]{125} - 1} \times \frac{3}{4}$ <p>b. The shoulder height (in centimeters) of a male Asian elephant can be represented by the expression $62.5\sqrt[3]{x} + 75.8$ where x is the age (in years) of the elephant. Estimate the height of an 8-year-old elephant.</p>

MA.8.NSO.1.7 (continued)

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none">Solve multi-step mathematical problems involving the order of operations with rational numbers including exponents and radicals.	<p>Simplify.</p> <p>a. $8 + \frac{1}{4} \times \sqrt{144}$</p> <p>b. $8 + \frac{\sqrt{64}}{2} \div \left(-\frac{1}{2}\right)^2$</p> <p>c. $\frac{(8^2 \cdot 13 - 12)}{\sqrt[3]{64}} \times \frac{3}{4}$</p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none">Solve mathematical problems involving the order of operations including parentheses and positive exponents.	<p>Simplify.</p> <p>a. $(2^2 \cdot 20 - 16) \div 16$</p> <p>b. $24 - (2^3 + 1) \div (3^3 - 12 \cdot 2)$</p> <p>c. $(9 \cdot 4 + 2 \cdot 6) \times (6 - 2^2)$</p>

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	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Write a word problem that requires writing a two-step equation where all terms are rational numbers. 	
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Solve a word problem leading to a two-step equation with rational numbers. 	<p>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.</p>

MA.7.AR.2.2 (continued)

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Solve two-step equations with rational numbers for all terms. 	<p>Solve each equation.</p> <p>a. $\frac{2}{3}x + \frac{7}{3} = \frac{1}{6}$</p> <p>b. $\frac{1}{2}y - \frac{3}{4} = \frac{7}{8}$</p> <p>c. $\frac{7}{2} - \frac{3}{10}x = -\frac{4}{5}$</p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Solve one-step equations. 	<p>Solve each equation.</p> <p>a. $x - 5 = -2$</p> <p>b. $y + 1.5 = 1$</p> <p>c. $3z = 12$</p> <p>d. $\frac{m}{2} = -6$</p>

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
<p>4</p>	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Write and solve a real-world problem that requires a conversion of units across different measurement systems. 	
<p>3</p>	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Solve real-world problems involving conversion of units across different measurement systems. 	<p>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?</p> <p>b. The speed of light is approximately 300,000,000 meters per second. What is the approximate speed in miles per hour?</p>

MA.7.AR.3.3 (continued)

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> • Solve mathematical problems involving conversion of units across different measurement systems. 	<p>Convert the unit of measure. Round to the nearest hundredth where applicable.</p> <ul style="list-style-type: none"> a. Convert 8 kilograms to pounds. b. Convert 28 pints to liters. c. Convert 120 yards to meters.
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> • Solve mathematical problems involving conversion of units across same measurement systems. 	<p>Convert the unit of measure.</p> <ul style="list-style-type: none"> 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.

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	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Describe two quantities in real life that are in a proportional relationship. 																					
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Determine whether two quantities are in a proportional relationship. 	<p>Tell whether x and y are proportional. Explain your reasoning.</p> <p>a.</p> <table border="1" style="margin-left: 40px;"> <tr> <td>x</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>y</td> <td>0</td> <td>3</td> <td>6</td> <td>9</td> </tr> </table> <p>b.</p> <table border="1" style="margin-left: 40px;"> <tr> <td>x</td> <td>2</td> <td>4</td> <td>6</td> <td>8</td> </tr> <tr> <td>y</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> </tr> </table>	x	0	1	2	3	y	0	3	6	9	x	2	4	6	8	y	0	1	2	3
x	0	1	2	3																		
y	0	3	6	9																		
x	2	4	6	8																		
y	0	1	2	3																		

MA.7.AR.4.1 (continued)

	Description	Evidence										
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Use a graph to represent the relationship between two quantities. 	<p>Represent the relationship between the quantities using a graph.</p> <table border="1" data-bbox="778 422 1246 564" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> </tr> <tr> <td style="text-align: center;">y</td> <td style="text-align: center;">2</td> <td style="text-align: center;">4</td> <td style="text-align: center;">6</td> <td style="text-align: center;">8</td> </tr> </table>	x	1	2	3	4	y	2	4	6	8
x	1	2	3	4								
y	2	4	6	8								
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Determine whether ratios are equivalent. 	<p>Determine whether each pair of ratios are equivalent.</p> <p>a. 6 : 3 and 2 : 4</p> <p>b. 4 : 12 and 3 : 9</p> <p>c. 5 : 10 and 10 : 5</p>										

Evidence-Based Scale Worksheets

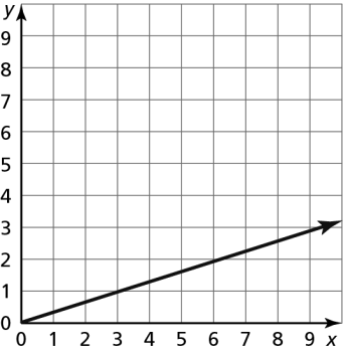
Algebraic Reasoning

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	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Teach someone else to find the constant of proportionality between different relationships. 											
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Determine the constant of proportionality with a real-world context from a table, graph, or written description. 	<p>Identify the constant of proportionality in each proportional relationship.</p> <p>a.</p> <table border="1" data-bbox="932 909 1477 1052"> <tr> <td>Hours, x</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>Miles, y</td> <td>35</td> <td>70</td> <td>105</td> <td>140</td> </tr> </table> <p>b.</p> <div data-bbox="932 1157 1358 1619"> <p style="text-align: center;">Elevator Speed</p> </div> <p>c. A lava flow travels 20 feet every 10 minutes.</p>	Hours, x	1	2	3	4	Miles, y	35	70	105	140
Hours, x	1	2	3	4								
Miles, y	35	70	105	140								

MA.7.AR.4.2 (continued)

	Description	Evidence										
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Determine the constant of proportionality with a mathematical context from a table or a graph. 	<p>Identify the constant of proportionality in each proportional relationship.</p> <p>a.</p> <table border="1" data-bbox="794 405 1262 548"> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> </tr> <tr> <td style="text-align: center;">y</td> <td style="text-align: center;">2.5</td> <td style="text-align: center;">5</td> <td style="text-align: center;">75</td> <td style="text-align: center;">10</td> </tr> </table> <p>b.</p> 	x	1	2	3	4	y	2.5	5	75	10
x	1	2	3	4								
y	2.5	5	75	10								
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Understand the definition of a unit rate. 	<p>Determine whether each rate is a unit rate.</p> <p>a. 5 cups : 2 cups</p> <p>b. 65 miles per hour</p> <p>c. \$6 for every pound</p>										

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	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> • Create a real-world context to graph a proportional relationship given a written description. 	
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> • Given a real-world context, graph proportional relationships based on the given information. 	<p>Graph the relationship. Label each axis.</p> <p>a. The equation $y = 10x$ represents the number of points scored y for answering x questions correctly in a game.</p> <p>b. Ten horses need 2 bales of hay, while 20 horses need 4 bales of hay.</p>

Evidence-Based Scale Worksheets

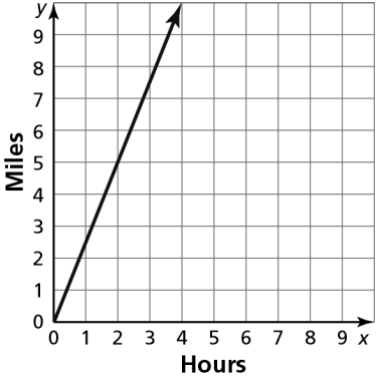
Algebraic Reasoning

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	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Explain the process of translating a proportional relationship to different forms. 	<p>Explain how to translate a proportional relationship to the following forms.</p> <ul style="list-style-type: none"> a. Equation to table b. Written description to graph c. Graph to equation 										
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Translate the representation of a proportional relationship to another form. 	<ul style="list-style-type: none"> 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. <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">Correct questions, x</td> <td style="text-align: center;">3</td> <td style="text-align: center;">6</td> <td style="text-align: center;">9</td> <td style="text-align: center;">12</td> </tr> <tr> <td style="text-align: center;">Points, y</td> <td style="text-align: center;">24</td> <td style="text-align: center;">48</td> <td style="text-align: center;">72</td> <td style="text-align: center;">96</td> </tr> </table>	Correct questions, x	3	6	9	12	Points, y	24	48	72	96
Correct questions, x	3	6	9	12								
Points, y	24	48	72	96								

MA.7.AR.4.4 (continued)

	Description	Evidence										
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> • Make a plan for how to translate the representation of a proportional relationship to another form. 	<p>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.</p> 										
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> • Find the constant of proportionality. 	<p>Find the constant of proportionality for each proportional relationship.</p> <p>a. $y = \frac{1}{5}x$</p> <p>b.</p> <table border="1" data-bbox="794 1402 1260 1549" style="margin-left: 40px;"> <tr> <td style="padding: 5px;">x</td> <td style="padding: 5px;">2</td> <td style="padding: 5px;">5</td> <td style="padding: 5px;">8</td> <td style="padding: 5px;">11</td> </tr> <tr> <td style="padding: 5px;">y</td> <td style="padding: 5px;">6</td> <td style="padding: 5px;">15</td> <td style="padding: 5px;">24</td> <td style="padding: 5px;">33</td> </tr> </table> <p>c. When $x = 8$, $y = 12$ and when $x = 2$, $y = 3$.</p>	x	2	5	8	11	y	6	15	24	33
x	2	5	8	11								
y	6	15	24	33								

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	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> • Create a real-world problem involving proportional relationships. 	
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> • Solve real-world problems involving proportional relationships. 	<p>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?</p> <p>b. Three bags of fertilizer cover 22,500 square feet. How many square feet are covered with 8 bags of fertilizer?</p>

MA.7.AR.4.5 (continued)

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> • Make a plan for how to solve a real-world proportional problem. 	<p>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.</p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> • Solve proportions. 	<p>Solve each proportion.</p> <p>a. $\frac{4}{5} = \frac{a}{25}$</p> <p>b. $\frac{36}{15} = \frac{12}{b}$</p> <p>c. $\frac{c}{48} = \frac{9}{32}$</p>

**Evidence-
Based Scale
Worksheets****Algebraic Reasoning****MA.8.AR.1.1** Apply the Laws of Exponents to generate equivalent algebraic expressions, limited to integer exponents and monomial bases.**Circle the scale that best demonstrates your knowledge of the standard.**

	Description	Evidence
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Solve word problems by applying the Laws of Exponents to generate equivalent algebraic expressions. 	<p>a. A warehouse contains 6^5 containers. Each container weighs 6^3 pounds. How much is the combined weight of all of the containers?</p> <p>b. A farm has 8^4 pigs. If all of the pigs weigh a total of 8^6 pounds, what is the average weight of each pig?</p>
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Apply the Laws of Exponents to generate equivalent algebraic expressions. 	<p>Simplify each expression.</p> <p>a. $5x^4y^{-2} \cdot (-3x^6y^9)$</p> <p>b. $\frac{6^{15}y^{45}}{6^{12}y^{40}}$</p> <p>c. $(x^4y^2)^3$</p> <p>d. $(2a)^3$</p> <p>e. $\left(\frac{2x}{3y^2}\right)^3$</p> <p>f. $(2x)^{-3}$</p> <p>g. $(12x)^1$</p> <p>h. $(-6p^2q^{-3})^0$</p>

MA.8.AR.1.1 (continued)

	Description	Evidence														
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Apply the Product of Powers Property, Quotient of Powers Property, and Power of a Power Property. 	<p>Simplify each expression.</p> <p>a. $3x^5 \cdot 6x^3$</p> <p>b. $\frac{2^6y^{15}}{2^2y^{14}}$</p> <p>c. $(x^2y^2)^2$</p>														
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Identify the Laws of Exponents. 	<p>Match the example on the right with the Law of Exponents on the left.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td data-bbox="699 835 1038 940">a. Product of Powers Property</td> <td data-bbox="1038 835 1337 940">1. $(a^m)^n = a^{m \cdot n}$</td> </tr> <tr> <td data-bbox="699 940 1038 1045">b. Quotient of Powers Property</td> <td data-bbox="1038 940 1337 1045">2. $\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$</td> </tr> <tr> <td data-bbox="699 1045 1038 1150">c. Power of a Power Property</td> <td data-bbox="1038 1045 1337 1150">3. $a^0 = 1$</td> </tr> <tr> <td data-bbox="699 1150 1038 1255">d. Power of a Product Property</td> <td data-bbox="1038 1150 1337 1255">4. $a^m \cdot a^n = a^{m+n}$</td> </tr> <tr> <td data-bbox="699 1255 1038 1360">e. Power of a Quotient Property</td> <td data-bbox="1038 1255 1337 1360">5. $(ab)^m = a^m \cdot b^m$</td> </tr> <tr> <td data-bbox="699 1360 1038 1528">f. Negative exponent</td> <td data-bbox="1038 1360 1337 1528">6. $a^{-1} = \frac{1}{a}$; $\left(\frac{a}{b}\right)^{-1} = \frac{b}{a}$</td> </tr> <tr> <td data-bbox="699 1528 1038 1623">g. Zero exponent</td> <td data-bbox="1038 1528 1337 1623">7. $\frac{a^m}{a^n} = a^{m-n}$</td> </tr> </tbody> </table>	a. Product of Powers Property	1. $(a^m)^n = a^{m \cdot n}$	b. Quotient of Powers Property	2. $\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$	c. Power of a Power Property	3. $a^0 = 1$	d. Power of a Product Property	4. $a^m \cdot a^n = a^{m+n}$	e. Power of a Quotient Property	5. $(ab)^m = a^m \cdot b^m$	f. Negative exponent	6. $a^{-1} = \frac{1}{a}$; $\left(\frac{a}{b}\right)^{-1} = \frac{b}{a}$	g. Zero exponent	7. $\frac{a^m}{a^n} = a^{m-n}$
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g. Zero exponent	7. $\frac{a^m}{a^n} = a^{m-n}$															

MA.8.AR.1.2 (continued)

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none">• Multiply two linear expressions.	<p>Find the product.</p> <p>a. $3x \cdot (-8 - 6x)$</p> <p>b. $-2x \cdot (2 - 10x)$</p> <p>c. $-x \cdot (-4 - 6x)$</p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none">• Add and subtract expressions.	<p>Find the sum or difference.</p> <p>a. $5x + (-8 - 15x)$</p> <p>b. $2x - (6x - 4x - 3)$</p> <p>c. $-x + (-4 + 2x)$</p>

Evidence-Based Scale Worksheets

Algebraic Reasoning

MA.8.AR.1.3 Rewrite the sum of two algebraic expressions having a common monomial factor as a common factor multiplied by the sum of two algebraic expressions.

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



	Description	Evidence
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Solve word problems by rewriting the sum of two algebraic expressions having a common monomial factor multiplied by the sum of two algebraic expressions. 	<p>A farmer wants to put a fence around a rectangular field that is 120 yards wide and has an area of $(120x + 14,400)$ square yards.</p> <p>a. Write an expression to represent the length of the field.</p> <p>b. Write an expression that represents the amount of fencing the farmer needs to completely surround the field, then factor the expression using the GCF.</p>
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Rewrite the sum of two algebraic expressions having a common monomial factor as a common factor multiplied by the sum of two algebraic expressions. 	<p>Factor each expression using the GCF.</p> <p>a. $-8x^4 - 6x^2$</p> <p>b. $16y^5 - 24y^3$</p> <p>c. $49 - 35x$</p>

Evidence-Based Scale Worksheets

Algebraic Reasoning

MA.8.AR.2.1 Solve multi-step linear equations in one variable, with rational number coefficients. Include equations with variables on both sides.

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

	Description	Evidence
<p>4</p>	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Solve word problems that involve multi-step linear equations in one variable, with rational number coefficients. 	<p>The figures are congruent.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>$(2x + 12)$ cm</p> </div> <div style="text-align: center;">  <p>10 cm 6x cm</p> </div> </div> <p>a. What is the area of each figure?</p> <p>b. What is the perimeter of each figure?</p>
<p>3</p>	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Solve multi-step linear equations in one variable, with rational number coefficients. 	<p>Solve the equation, if possible.</p> <p>a. $-3(x - 4) = -3x + 30$</p> <p>b. $-0.3x + 4 = 3.2x + 11$</p> <p>c. $8x + 3x + 9 = 16x + 14$</p>

MA.8.AR.2.1 (continued)

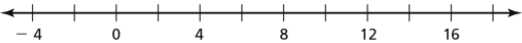
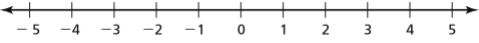
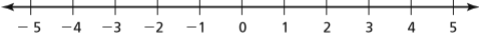
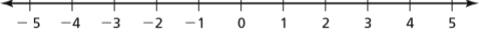
	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none">• Solve multi-step equations.	<p>Solve the equation.</p> <p>a. $3x + 12 = 21$</p> <p>b. $-5x + 15 = -30$</p> <p>c. $\frac{x}{4} - 8 = -5$</p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none">• Solve single-step equations.	<p>Solve the equation.</p> <p>a. $6x = -24$</p> <p>b. $x + 8 = -2$</p> <p>c. $\frac{x}{-3} = 12$</p>

Evidence-Based Scale Worksheets

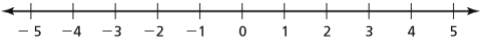
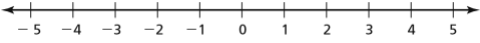
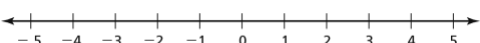
Algebraic Reasoning

MA.8.AR.2.2 Solve two-step linear inequalities in one variable and represent solutions algebraically and graphically.

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

	Description	Evidence
<p>4</p>	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Solve two-step linear inequalities in one variable and represent solutions algebraically and graphically. 	<p>You are saving money to buy a new bicycle that costs \$325. You have \$50 and are saving \$25 a week.</p> <p>a. Write and solve an inequality that shows how many weeks w you need to save until you can buy the new bicycle.</p> <p>b. Graph the solution to the inequality on the number line.</p> 
<p>3</p>	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Solve two-step linear inequalities in one variable and represent solutions algebraically and graphically. 	<p>Solve the inequality and graph the solution on the number line.</p> <p>a. $-3(x - 4) \geq 24$</p>  <p>b. $5x + 3 < 13$</p>  <p>c. $4x + 3x + 9 \geq 23$</p> 

MA.8.AR.2.2 (continued)

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Solve two-step linear inequalities in one variable. 	<p>Solve the inequality.</p> <p>a. $5x + 16 < 31$</p> <p>b. $-3x + 12 \geq -18$</p> <p>c. $\frac{x}{2} - 10 > -2$</p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Graph inequalities. 	<p>Graph the inequality on the number line.</p> <p>a. $x \leq 3$</p>  <p>b. $x > 2$</p>  <p>c. $x \geq -4$</p> 

**Evidence-
Based Scale
Worksheets**
Algebraic Reasoning

MA.8.AR.2.3 Given an equation in the form of $x^2 = p$ and $x^3 = q$, where p is a whole number and q is an integer, determine the real solutions.

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

	Description	Evidence
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Solve word problems leading to equations in the form of $x^2 = p$ and $x^3 = q$. 	<p>a. A square has an area of 169 square centimeters. Write and solve an equation to determine the length of the side s of the square.</p> <p>b. A cube has a volume of 125 cubic meters. Write and solve an equation to determine the length of the side s of the cube.</p>
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Solve equations in the form of $x^2 = p$ and $x^3 = q$. 	<p>Solve each equation.</p> <p>a. $x^2 = 16$</p> <p>b. $3x^2 = 588$</p> <p>c. $x^3 = -64$</p> <p>d. $\frac{1}{5}x^3 = -25$</p>

MA.8.AR.2.3 (continued)

	Description	Evidence
<p>2</p>	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Find square and cube roots. 	<p>Find the square root(s).</p> <p>a. $-\sqrt{81}$</p> <p>b. $\pm\sqrt{\frac{16}{144}}$</p> <p>Find each cube root.</p> <p>c. $\sqrt[3]{\frac{-27}{64}}$</p> <p>d. $\sqrt[3]{\frac{8}{125}}$</p>
<p>1</p>	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Find square roots. 	<p>Find the two square roots of the number.</p> <p>a. 16</p> <p>b. 100</p> <p>c. 196</p>

Evidence-Based Scale Worksheets

Algebraic Reasoning

MA.8.AR.3.1 Determine if a linear relationship is also a proportional relationship.

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

	Description	Evidence										
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Determine if real-world situations are in a proportional relationship. 	<p>Determine if each situation represents a proportional relationship. Justify your reasoning.</p> <p>a. Newton earns \$12 for every hour worked.</p> <p>b. A car travels at a constant speed of 55 miles per hour.</p> <p>c. The total cost for a ride share is 50 cents per mile plus \$5.</p>										
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Determine if a linear relationship is also a proportional relationship. 	<p>Determine if the equation, graph or table is a proportional relationship. Justify your reasoning.</p> <p>a. $y = 3x$</p> <p>b.</p> <table border="1" style="margin-left: 40px;"> <tr> <td style="padding: 5px;">x</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">2</td> <td style="padding: 5px;">4</td> <td style="padding: 5px;">6</td> </tr> <tr> <td style="padding: 5px;">y</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">1</td> <td style="padding: 5px;">2</td> <td style="padding: 5px;">3</td> </tr> </table> <p>c.</p>	x	0	2	4	6	y	0	1	2	3
x	0	2	4	6								
y	0	1	2	3								

MA.8.AR.3.1 (continued)

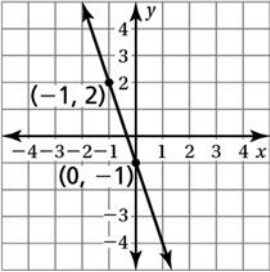
	Description	Evidence																								
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Graph linear relationships and proportional relationships. 	<p>Graph the linear equation.</p> <p>a. $y = -2x$</p> <p>b. $y = \frac{2}{3}x - 2$</p>																								
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Plot points from a table on a coordinate plane. 	<p>Plot the points on a coordinate plane.</p> <p>a.</p> <table border="1" data-bbox="794 1157 1331 1297"> <tr> <td>x</td> <td>0</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>y</td> <td>0</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> </table> <p>b.</p> <table border="1" data-bbox="794 1528 1331 1675"> <tr> <td>x</td> <td>-4</td> <td>-2</td> <td>0</td> <td>2</td> <td>4</td> </tr> <tr> <td>y</td> <td>1</td> <td>0</td> <td>-1</td> <td>-2</td> <td>-3</td> </tr> </table>	x	0	2	3	4	5	y	0	2	3	4	5	x	-4	-2	0	2	4	y	1	0	-1	-2	-3
x	0	2	3	4	5																					
y	0	2	3	4	5																					
x	-4	-2	0	2	4																					
y	1	0	-1	-2	-3																					

Evidence-Based Scale Worksheets

Algebraic Reasoning

MA.8.AR.3.2 Given a table, graph or written description of a linear relationship, determine the slope.

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

	Description	Evidence												
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Find the slope of a line from a real-world situation. 	<p>The situation can be represented by a linear equation. Find the slope of the line.</p> <ol style="list-style-type: none"> A plumber charges \$25 for a service call, plus \$50 per hour of service. A canoe rental service charges a \$20 transportation fee and \$30 each hour to rent a canoe. A streaming service charges a monthly fee of \$40 and a fee of \$2.99 for every movie downloaded. 												
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Find the slope given a table, graph, or written description. 	<p>Find the slope of the line that passes through the given points.</p> <ol style="list-style-type: none"> <table border="1" data-bbox="928 1188 1465 1367"> <tr> <td>x</td> <td>-4</td> <td>-2</td> <td>0</td> <td>2</td> <td>4</td> </tr> <tr> <td>y</td> <td>0</td> <td>$\frac{1}{2}$</td> <td>1</td> <td>$1\frac{1}{2}$</td> <td>2</td> </tr> </table>  Find the slope of the line that passes through $(-6, 1)$ and $(2, -3)$. 	x	-4	-2	0	2	4	y	0	$\frac{1}{2}$	1	$1\frac{1}{2}$	2
x	-4	-2	0	2	4									
y	0	$\frac{1}{2}$	1	$1\frac{1}{2}$	2									

MA.8.AR.3.2 (continued)

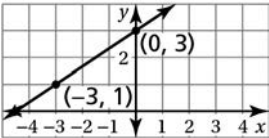
	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Find the slope given an equation of a line. 	<p>Find the slope of the graph of each linear equation.</p> <p>a. $y = 6x$</p> <p>b. $y = -\frac{1}{4}x - 8$</p> <p>c. $y = -2x + 3$</p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Graph linear relationships. 	<p>Graph each linear equation.</p> <p>a. $y = 3x + 2$</p> <p>b. $y = -\frac{3}{5}x - 1$</p>

Evidence-Based Scale Worksheets

Algebraic Reasoning

MA.8.AR.3.3 Given a table, graph or written description of a linear relationship, write an equation in slope-intercept form.

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

	Description	Evidence										
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Write an equation in slope-intercept form from a real-world situation. 	<p>Write an equation in slope-intercept form for each situation.</p> <p>a. A plumber charges \$15 for a service call, plus \$45 per hour of service. What is the total cost y for a service call that lasts x hours?</p> <p>b. A water tank with 600 gallons of water leaks 8.5 gallons of water every hour. What is the total amount of water y in the tank after x hours?</p> <p>c. Newton has $-\\$62$ in his bank account. He puts \$10 in his account each week. What is the total amount of money y in Newton's bank account after x weeks?</p>										
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Write an equation in slope-intercept form given a table, graph, or written description. 	<p>Write an equation in slope-intercept form of the line that passes through the given points.</p> <p>a.</p> <table border="1" style="margin-left: 40px;"> <tr> <td style="padding: 5px;">x</td> <td style="padding: 5px;">-3</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">3</td> <td style="padding: 5px;">6</td> </tr> <tr> <td style="padding: 5px;">y</td> <td style="padding: 5px;">0</td> <td style="padding: 5px;">-1</td> <td style="padding: 5px;">-2</td> <td style="padding: 5px;">-3</td> </tr> </table> <p>b.</p>  <p>c. A line has a slope of 2 and a y-intercept of -12. Write an equation of the line in slope-intercept form.</p>	x	-3	0	3	6	y	0	-1	-2	-3
x	-3	0	3	6								
y	0	-1	-2	-3								

MA.8.AR.3.3 (continued)

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none">Write an equation in slope-intercept form given a written description.	<p>Write an equation in slope-intercept form of the line that has the given slope and y-intercept.</p> <p>a. A line has a slope of 1 and a y-intercept of 0.</p> <p>b. A line has a slope of $\frac{2}{9}$ and a y-intercept of -3.</p> <p>c. A line has a slope of 14 and a y-intercept of 8.</p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none">Write an equation in slope-intercept form given the slope m and y-intercept b.	<p>Write an equation in slope-intercept form of the line that has the given slope m and y-intercept b.</p> <p>a. $m = 4, b = -2$</p> <p>b. $m = -\frac{1}{2}, b = -8$</p> <p>c. $m = \frac{2}{5}, b = 10$</p>

Evidence-Based Scale Worksheets

Algebraic Reasoning

MA.8.AR.3.4 Given a mathematical or real-world context, graph a two-variable linear equation from a written description, a table or an equation in slope-intercept form.

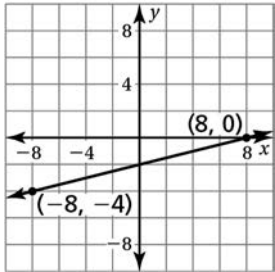
Circle the scale that best demonstrates your knowledge of the standard.

	Description	Evidence										
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Teach a person how to graph a two-variable linear equation from a written description, a table, or an equation in slope-intercept form. 											
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Graph a two-variable linear equation from a written description, a table, or an equation in slope-intercept form given a mathematical or real-world context. 	<p>Graph the linear equation represented by the table, equation, or situation.</p> <p>a. <table border="1" data-bbox="932 961 1385 1108"> <tr> <td>x</td> <td>-2</td> <td>0</td> <td>1</td> <td>2</td> </tr> <tr> <td>y</td> <td>-4</td> <td>0</td> <td>2</td> <td>4</td> </tr> </table></p> <p>b. $y = -\frac{1}{2}x - 2$</p> <p>c. The water level of a river is 12 feet and recedes 0.25 foot per day.</p>	x	-2	0	1	2	y	-4	0	2	4
x	-2	0	1	2								
y	-4	0	2	4								

MA.8.AR.3.4 (continued)

	Description	Evidence												
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> • Graph a two-variable linear equation. 	<p>Graph $y = 3x - 4$.</p>												
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> • Graph a linear equation that is represented by a table. 	<p>Graph the linear equation represented by the table.</p> <table border="1" data-bbox="722 1077 1262 1224" style="margin-left: auto; margin-right: auto;"> <tbody> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;">-4</td> <td style="text-align: center;">-2</td> <td style="text-align: center;">0</td> <td style="text-align: center;">2</td> <td style="text-align: center;">4</td> </tr> <tr> <td style="text-align: center;">y</td> <td style="text-align: center;">5</td> <td style="text-align: center;">4</td> <td style="text-align: center;">3</td> <td style="text-align: center;">2</td> <td style="text-align: center;">1</td> </tr> </tbody> </table>	x	-4	-2	0	2	4	y	5	4	3	2	1
x	-4	-2	0	2	4									
y	5	4	3	2	1									

MA.8.AR.3.5 (continued)

	Description	Evidence												
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Interpret the slope and y-intercept given a linear equation. 	<p>Interpret the slope and y-intercept from the equation.</p> $y = -4x + 13$												
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Identify the slope and y-intercept from a table, graph, or equation. 	<p>Identify the slope and y-intercept of the linear equation represented by the equation, graph, or table.</p> <p>a. $y = -3x + 15$</p> <p>b.</p>  <p>c.</p> <table border="1" data-bbox="794 1577 1331 1724"> <tbody> <tr> <td>x</td> <td>-2</td> <td>-1</td> <td>0</td> <td>1</td> <td>2</td> </tr> <tr> <td>y</td> <td>-10</td> <td>-2</td> <td>3</td> <td>8</td> <td>13</td> </tr> </tbody> </table>	x	-2	-1	0	1	2	y	-10	-2	3	8	13
x	-2	-1	0	1	2									
y	-10	-2	3	8	13									

**Evidence-
Based Scale
Worksheets****Algebraic Reasoning**

MA.8.AR.4.1 Given a system of two linear equations and a specified set of possible solutions, determine which ordered pairs satisfy the system of linear equations.

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

	Description	Evidence
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Write a system of linear equations with a given solution. 	<p>Write a system of linear equations with the solution $(4, -3)$.</p>
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Determine which ordered pair satisfies a system of two linear equations. 	<p>Tell whether the ordered pair is a solution of the system of linear equations.</p> <p>a. $(1, 1)$; $y = -3x + 4$ $y = 3x - 2$</p> <p>b. $(-2, 2)$; $y = -4x + 2$ $y = x + 4$</p> <p>c. $(2, 1)$; $y = -x + 3$ $y = 3x - 5$</p>

MA.8.AR.4.1 (continued)

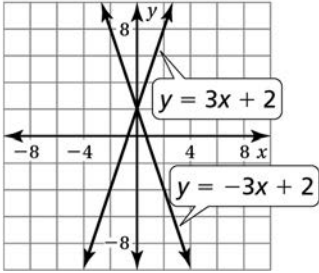
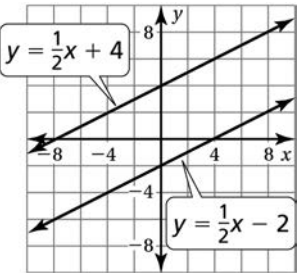
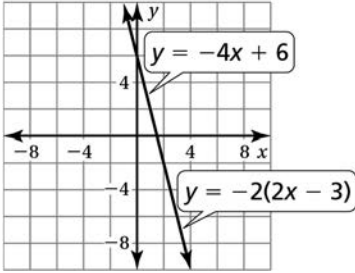
	Description	Evidence												
<p>2</p>	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Complete an input-output table for a linear equation. 	<p>Complete the table for the given linear equation.</p> $y = -6x - 8$ <table border="1" data-bbox="699 453 956 884"> <thead> <tr> <th>x</th> <th>y</th> </tr> </thead> <tbody> <tr> <td>-5</td> <td></td> </tr> <tr> <td>-1</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>3</td> <td></td> </tr> <tr> <td>6</td> <td></td> </tr> </tbody> </table>	x	y	-5		-1		0		3		6	
x	y													
-5														
-1														
0														
3														
6														
<p>1</p>	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Evaluate algebraic expressions given values of their variables. 	<p>Evaluate each expression when $a = 3$, $b = 2$, and $c = -1$.</p> <p>a. $3a - 2b + c$</p> <p>b. $5(a - c) + 6b$</p> <p>c. $\frac{15b + 6c}{2a}$</p>												

Evidence-Based Scale Worksheets

Algebraic Reasoning

MA.8.AR.4.2 Given a system of two linear equations represented graphically on the same coordinate plane, determine whether there is one solution, no solution or infinitely many solutions.

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

	Description	Evidence
<p>4</p>	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> • Create and graph systems of linear equations with one solution, no solutions, and infinitely many solutions. 	
<p>3</p>	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> • Determine whether there is one solution, no solution, or infinitely many solutions to a system of two linear equations represented graphically on the same coordinate plane. 	<p>Tell whether there is one solution, no solution, or infinitely many solutions to the system linear equations.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>a. $y = 3x + 2$ $y = -3x + 2$</p>  </div> <div style="text-align: center;"> <p>b. $y = \frac{1}{2}x + 4$ $y = \frac{1}{2}x - 2$</p>  </div> </div> <div style="text-align: center; margin-top: 20px;"> <p>c. $y = -4x + 6$ $y = -2(2x - 3)$</p>  </div>

MA.8.AR.4.2 (continued)

	Description	Evidence												
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Determine whether an ordered pair satisfies a system of two linear equations. 	<p>Tell whether the ordered pair is a solution of the system of linear equations.</p> <p>a. $(-2, -4)$; $y = -x - 6$ $y = 3x + 2$</p> <p>b. $(4, -10)$; $y = x + 14$ $y = 2x - 18$</p> <p>c. $(2, 3)$; $y = \frac{1}{2}x + 2$ $y = x + 1$</p>												
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Complete an input-output table for a linear equation. 	<p>Complete the table for the given linear equation.</p> $y = -\frac{1}{2}x + 4$ <table border="1" data-bbox="700 1255 956 1690" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">x</th> <th style="text-align: center;">y</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">-6</td> <td></td> </tr> <tr> <td style="text-align: center;">-2</td> <td></td> </tr> <tr> <td style="text-align: center;">0</td> <td></td> </tr> <tr> <td style="text-align: center;">4</td> <td></td> </tr> <tr> <td style="text-align: center;">8</td> <td></td> </tr> </tbody> </table>	x	y	-6		-2		0		4		8	
x	y													
-6														
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Evidence-Based Scale Worksheets

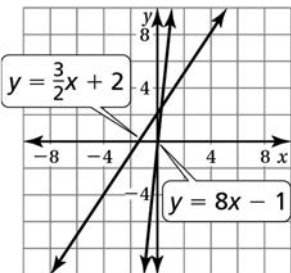
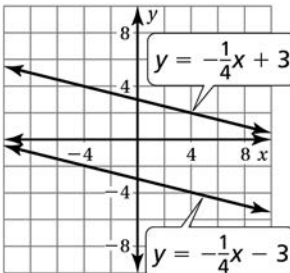
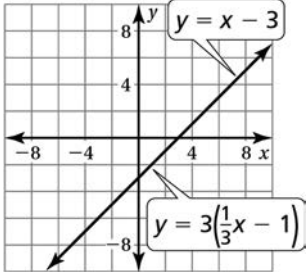
Algebraic Reasoning

MA.8.AR.4.3 Given a mathematical or real-world context, solve systems of two linear equations by graphing.

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

	Description	Evidence
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> • Create and graph systems of linear equations in a real-world context and graph the solution. 	
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> • Solve a system of two linear equations by graphing. 	<p>Newton reads a math riddle: There are two numbers. The sum of the first number and twice the second number is 14. When the second number is subtracted from the first number, the result is 2. The system of equations is:</p> $y = -\frac{1}{2}x + 7$ $y = x - 2$ <p>Where x represents the first number and y represents the second number.</p> <p>Graph the system of equations to find the two numbers.</p>

MA.8.AR.4.3 (continued)

	Description	Evidence
<p>2</p>	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Determine whether there is one solution, no solution, or infinitely many solutions to a system of two linear equations represented graphically on the same coordinate plane. 	<p>Tell whether there is one solution, no solution, or infinitely many solutions to the system linear equations.</p> <p>a. $y = \frac{3}{2}x + 2$ $y = 8x - 1$</p>  <p>b. $y = -\frac{1}{4}x + 3$ $y = -\frac{1}{4}x - 3$</p>  <p>c. $y = x - 3$ $y = 3\left(\frac{1}{3}x - 1\right)$</p> 
<p>1</p>	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Determine whether an ordered pair satisfies a system of two linear equations. 	<p>Tell whether the ordered pair is a solution of the system of linear equations.</p> <p>a. $(1, 7)$; $y = 5x + 2$ $y = -x + 8$</p> <p>b. $(-4, 5)$; $y = -3x - 7$ $y = x + 9$</p> <p>c. $(1, 12)$; $y = 8x + 4$ $y = 3x - 15$</p>

Evidence-Based Scale Worksheets

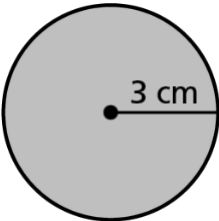
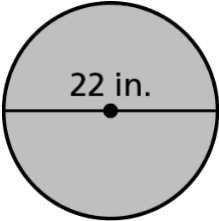
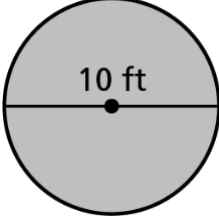
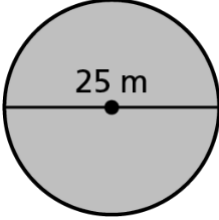
Geometric Reasoning

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	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Teach someone the proportional relationships between the circumference and the diameter of a circle. 	
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Solve a real-world problem involving the circumference of a circle. 	<p>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?</p>

MA.7.GR.1.3 (continued)

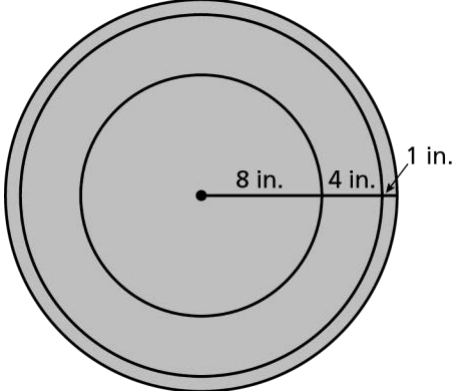
	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Find circumferences of circles. 	<p>Find the circumference of each circle.</p> <p>a. </p> <p>b. </p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Find the radius of a circle. 	<p>Find the radius of each circle.</p> <p>a. </p> <p>b. </p>

Evidence-Based Scale Worksheets

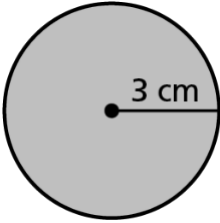
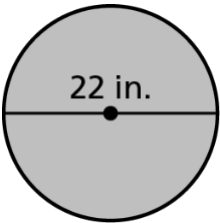
Geometric Reasoning

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
<p>4</p>	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Solve a real-world problem involving the circumference and the area of a circle. 	<p>A circular garden is to be dug with a diameter of 16 feet. There is to be a 1-foot border around the garden.</p> <p>a. What is the circumference of the garden?</p> <p>b. What is the area of the garden?</p>
<p>3</p>	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Solve a real-world problem involving the area of a circle. 	<p>A target for a game is shown.</p>  <p>a. What is the area of the outer ring?</p> <p>b. What is the area of the middle ring?</p>

MA.7.GR.1.4 (continued)

	Description	Evidence
<p>2</p>	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Find areas of circles. 	<p>Find the area of each circle.</p> <p>a. </p> <p>b. </p>
<p>1</p>	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Simplify expressions with exponents. 	<p>Simplify each expression.</p> <p>a. $3(4)^2$</p> <p>b. $3.1(5)^2$</p> <p>c. $3.14(10)^2$</p>

MA.7.GR.1.5 (continued)

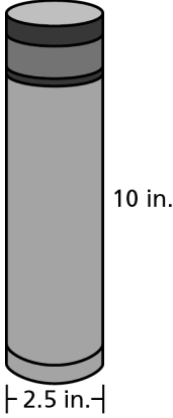
	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> • Solve a mathematical problem involving dimensions of geometric figures, including scale drawings. 	<p>A map has a scale of 1 in. : 80 mi.</p> <p>a. On the map, two cities are 3.5 inches apart. What is the actual distance between the two cities?</p> <p>b. Two cities are 500 miles apart. What is the distance between the two cities on a map?</p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> • Solve proportions. 	<p>Solve each proportion.</p> <p>a. $\frac{x}{2} = \frac{1}{4}$</p> <p>b. $\frac{4}{5} = \frac{x}{15}$</p> <p>c. $\frac{8}{x} = \frac{2}{5}$</p>

Evidence-Based Scale Worksheets

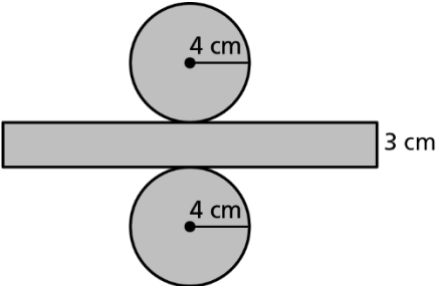
Geometric Reasoning

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
<p>4</p>	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Write a real-world problem to find the surface area of a cylinder using the figure's net. 	
<p>3</p>	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Find the surface area of a cylinder using the figure's net in a real-world context. 	<p>A cylindrical water bottle is shown. Find the surface area of the water bottle.</p> 

MA.7.GR.2.1 (continued)

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Find the surface area of a cylinder using the figure's net in a mathematical context. 	<p>Use the net to find the surface area of the cylinder.</p>  <p>The diagram shows a net of a cylinder. It consists of two identical circles, one above and one below a central horizontal rectangle. Each circle has a center point and a radius line extending to the right, labeled "4 cm". The rectangle has a vertical height on its right side labeled "3 cm".</p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Simplify algebraic expressions that involve π. 	<p>Simplify each expression.</p> <p>a. $2\pi(12)^2 + 2\pi(12)(3)$</p> <p>b. $2\pi(7.5)^2 + 2\pi(7.5)(20)$</p>

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	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Given the surface area of a cylinder, find the height and the radius of the cylinder. 	<p>The surface area of a cylinder is 1000π square centimeters. The height is 4 times the radius. Find the height and the radius.</p>
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Solve a real-world problem involving the surface areas of cylinders. 	<p>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.</p> <p>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.</p>

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.

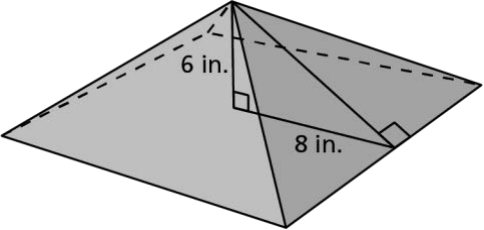
	Description	Evidence
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Given the surface area and the radius of a cylinder, find the volume of the cylinder. 	<p>The surface area of a cylinder is approximately 2034.72 square centimeters. Find the volume of the cylinder if the radius is 12 centimeters.</p>
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Solve a real-world problem involving the volume of a cylinder. 	<p>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.</p> <p>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 ft³ is approximately 7.5 gallons)</p>

Evidence-Based Scale Worksheets

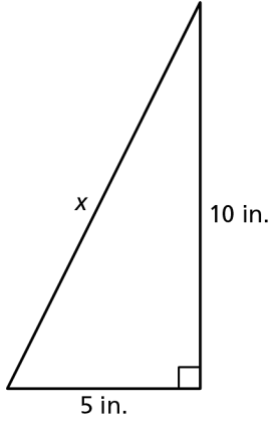
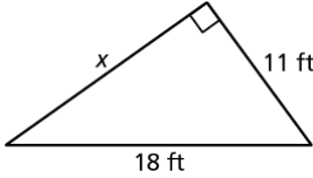
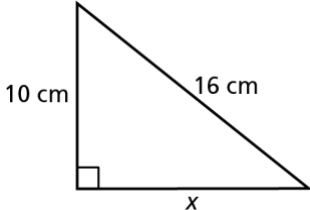
Geometric Reasoning

MA.8.GR.1.1 Apply the Pythagorean Theorem to solve mathematical and real-world problems involving unknown side lengths in right triangles.

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

	Description	Evidence
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> • Create and solve a problem involving the Pythagorean Theorem. 	
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> • Apply the Pythagorean Theorem to solve mathematical and real-world problems involving unknown side lengths in right triangles. 	<p>a. The distance from the base of the ladder of a playground slide to where the slide hits the ground is 12 feet. The distance from the base of the ladder to the top of the slide is 8 feet. How long is the slide? Round your answer to the nearest tenth of a foot.</p> <p>b. Newton has a square pyramid-shaped paper weight that is 6 inches tall and has a side length of 16 inches as shown. What is the slant height, h, of the square pyramid?</p> 

MA.8.GR.1.1 (continued)

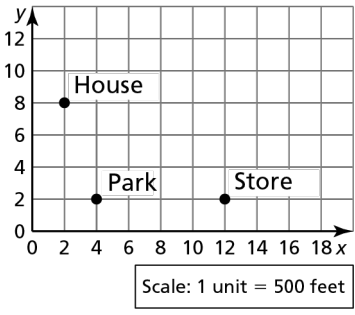
	Description	Evidence
<p>2</p>	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Apply the Pythagorean Theorem to solve mathematical problems involving unknown side lengths in right triangles. 	<p>Find the missing length of the right triangle. Round your answer to the nearest tenth.</p> <p>a.</p>  <p>b.</p>  <p>c.</p> 
<p>1</p>	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Solve equations using square roots. 	<p>Solve each equation. State the positive solution only.</p> <p>a. $3a^2 = 75$</p> <p>b. $6a^2 - 12 = 204$</p> <p>c. $12a^2 + 30 = 1758$</p>

Evidence-Based Scale Worksheets

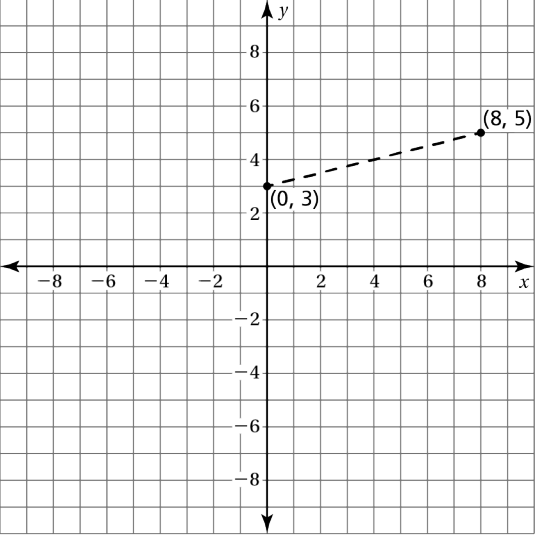
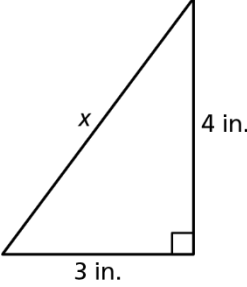
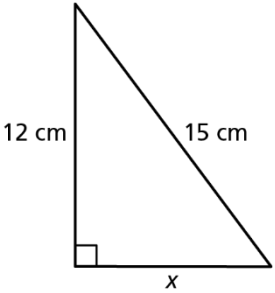
Geometric Reasoning

MA.8.GR.1.2 Apply the Pythagorean Theorem to solve mathematical and real-world problems involving the distance between two points in a coordinate plane.

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

	Description	Evidence
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Teach someone how to apply the Pythagorean Theorem to solve real-world problems involving the distance between two points in a coordinate plane. 	
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Apply the Pythagorean Theorem to solve mathematical and real-world problems involving the distance between two points in a coordinate plane. 	<p>a. Point A is located at $(-4, 6)$ and point B is located at $(8, 0)$ in the coordinate plane. What is the distance between the two points? Round your answer to the nearest tenth of a unit.</p> <p>b. Descartes walks from his house in a straight line directly to the store. He then walks from the store in a straight line directly to the park. He then walks from the park in a straight line directly to his house. How many feet did he walk in all?</p> 

MA.8.GR.1.2 (continued)

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Apply the Pythagorean Theorem to solve mathematical problems involving the distance between two points in a coordinate plane. 	<p>Find the distance between the points. Round your answer to the nearest tenth.</p> 
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Apply the Pythagorean Theorem to solve mathematical problems. 	<p>Find the missing length in the triangle.</p> <p>a.</p>  <p>b.</p> 

Evidence-Based Scale Worksheets

Geometric Reasoning

MA.8.GR.1.3 Use the Triangle Inequality Theorem to determine if a triangle can be formed from a given set of sides. Use the converse of the Pythagorean Theorem to determine if a right triangle can be formed from a given set of sides.

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

	Description	Evidence
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Solve a real-world problem using the converse of the Pythagorean Theorem to determine if a right triangle can be formed from a given set of side lengths. 	<p>Two joggers start at point <i>A</i> and run 8 miles due north. They stop and rest at point <i>B</i>. Next, they run 6 miles due west and rest at point <i>C</i>. The joggers then run 9 miles to return directly to point <i>A</i> from point <i>C</i>. Did the entire path the joggers took form a right triangle? Explain your answer.</p>
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Use the Triangle Inequality Theorem to determine if a triangle can be formed from a given set of side lengths, and use the converse of the Pythagorean Theorem to determine if a right triangle can be formed from a given set of side lengths. 	<p>Determine if the side lengths form a triangle. Justify your answer.</p> <p>a. 4 ft, 8 ft, 13 ft</p> <p>b. 53 mm, 60 mm, 100 mm</p> <p>c. 5 in., 12 in., 13 in.</p> <p>d. Is a triangle with side lengths of 6 centimeters, 8 centimeters, and 10 centimeters a right triangle? Justify your answer.</p>

MA.8.GR.1.3 (continued)

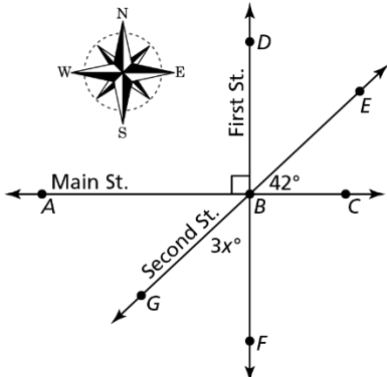
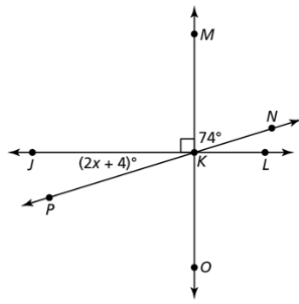
	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> • Use the converse of the Pythagorean Theorem to determine if a right triangle can be formed from a given set of side lengths. 	<p>Determine if the side lengths form a right triangle. Justify your answer.</p> <p style="padding-left: 40px;">a. 9 in., 12 in., 15 in.</p> <p style="padding-left: 40px;">b. 8 cm, 15 cm, 17 cm</p> <p style="padding-left: 40px;">c. 2 m, 3 m, 4 m</p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> • Use the Triangle Inequality Theorem to determine if a triangle can be formed from a given set of side lengths. 	<p>Determine if the side lengths form a triangle. Justify your answer.</p> <p style="padding-left: 40px;">a. 12 in., 8 in., 16 in.</p> <p style="padding-left: 40px;">b. 7 cm, 9 cm, 17 cm</p> <p style="padding-left: 40px;">c. 5 m, 6 m, 8 m</p>

Evidence-Based Scale Worksheets

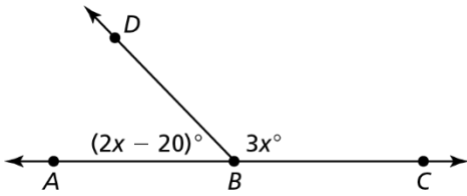
Geometric Reasoning

MA.8.GR.1.4 Solve mathematical problems involving the relationships between supplementary, complementary, vertical or adjacent angles.

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

	Description	Evidence
<p>4</p>	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Solve real-world problems involving the relationships between supplementary, complementary, vertical, or adjacent angles. 	<p>The diagram shows the intersection of Main Street, First Street, and Second Street.</p>  <p>a. What is the measure of $\angle DBE$?</p> <p>b. What is the value of x?</p> <p>c. What is the measure of $\angle ABG$?</p> <p>d. A truck going east on Main Street toward First Street needs to make a turn that is between 100° and 140°. Which street in which direction does the truck need to take to make the turn? Why?</p>
<p>3</p>	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Solve mathematical problems involving the relationships between supplementary, complementary, vertical, or adjacent angles. 	<p>Use the diagram to answer the questions.</p>  <p>a. Name a pair of adjacent, complementary, supplementary, and vertical angles.</p> <p>b. What is the value of x?</p> <p>c. What is the measure of $\angle LKP$?</p>

MA.8.GR.1.4 (continued)

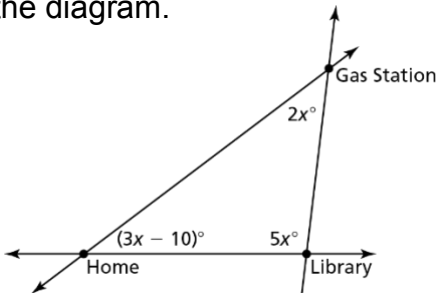
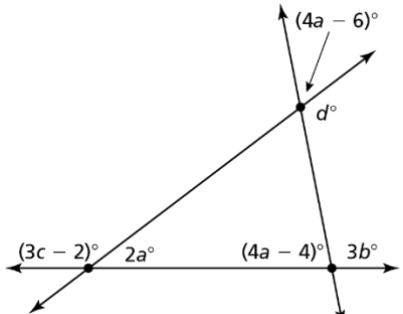
	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Solve mathematical problems involving the relationships between supplementary and complementary angles. 	<p>a. What is the complement of an angle that measures 33°?</p> <p>b. What is the supplement of an angle that measures 126°?</p> <p>c. $\angle ABD$ and $\angle DBC$ are supplementary. Solve for x. Check your work.</p> 
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Identify complementary and supplementary angles. 	<p>Determine if the angles are complementary. Justify your answer.</p> <p>a. The measure of $\angle 1$ is 42°. The measure of $\angle 2$ is 58°.</p> <p>b. The measure of $\angle 1$ is 61°. The measure of $\angle 2$ is 29°.</p> <p>Determine if the angles are supplementary. Justify your answer.</p> <p>c. The measure of $\angle 1$ is 136°. The measure of $\angle 2$ is 44°.</p> <p>d. The measure of $\angle 1$ is 95°. The measure of $\angle 2$ is 105°.</p>

Evidence-Based Scale Worksheets

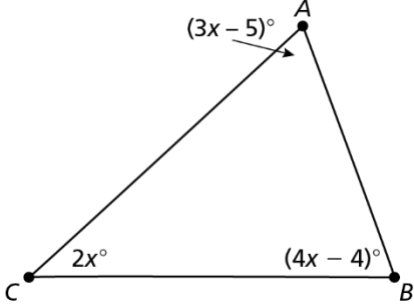
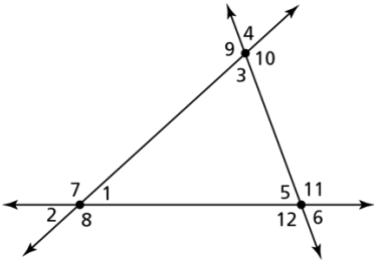
Geometric Reasoning

MA.8.GR.1.5 Solve problems involving the relationships of interior and exterior angles of a triangle.

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

	Description	Evidence
<p>4</p>	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Solve real-world problems involving the relationships of interior and exterior angles of a triangle. 	<p>Newton rides his bicycle from his home to the gas station to get air for the bicycle's tires. He then rides to the library, checks out a book, then rides back to home, as shown in the diagram.</p>  <ol style="list-style-type: none"> What is the value of x? What are the measures of the interior angles at home, the gas station, and the library? What are the measures of the exterior angles at home, the gas station, and the library?
<p>3</p>	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Solve mathematical problems involving the relationships of interior and exterior angles of a triangle. 	<p>Use the diagram to answer the questions.</p>  <ol style="list-style-type: none"> What are the values of a, b, c, and d? What is the measure of each interior angle of the triangle? What is the measure of each exterior angle of the triangle?

MA.8.GR.1.5 (continued)

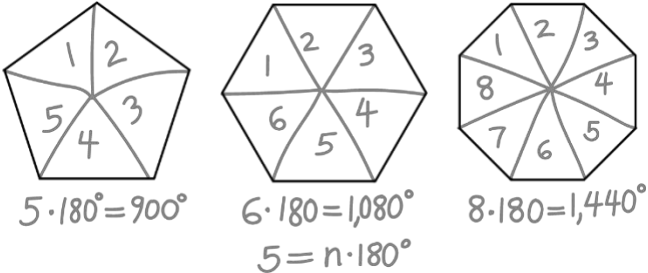
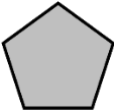
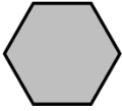

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Solve mathematical problems involving the relationships of interior angles of a triangle. 	<p>Use the triangle to answer the questions.</p>  <p>a. What is the value of x?</p> <p>b. What is the measure of each interior angle?</p>
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Identify interior and exterior angles of a triangle and apply the Triangle Sum Theorem. 	<p>Use the triangle shown.</p>  <p>a. Identify interior angles of the triangle.</p> <p>b. Identify exterior angles of the triangle.</p> <p>c. Write an equation to show the sum of the interior angle measures of the triangle.</p>

Evidence-Based Scale Worksheets

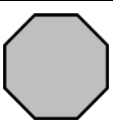
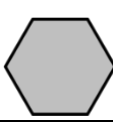
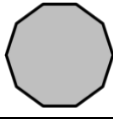
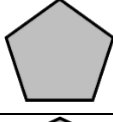
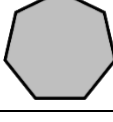
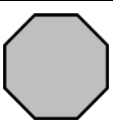
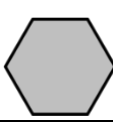
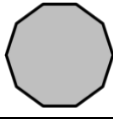
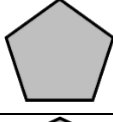
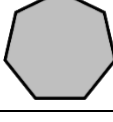
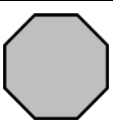
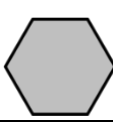
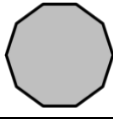
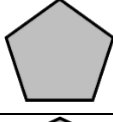
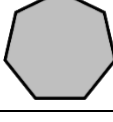



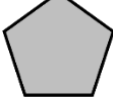




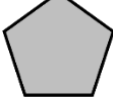




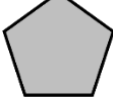

Geometric Reasoning

MA.8.GR.1.6 Develop and use formulas for the sums of the interior angles of regular polygons by decomposing them into triangles.

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

	Description	Evidence												
<p>4</p>	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Correct a student's work by developing and using formulas for the sums of the interior angles of regular polygons by decomposing them into triangles. 	<p>A student divided three polygons into triangles, then found the sum of the interior angles of the polygons by multiplying the number of sides by 180°.</p>  <p>Correct the student's work by showing how to divide the figure into triangles and then explaining the mistake(s) the student made.</p>												
<p>3</p>	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Develop and use formulas for the sums of the interior angles of regular polygons by decomposing them into triangles. 	<p>Divide the figure into triangles and then find the sum of the interior angles of the polygon by adding the sums of the interior angles of the triangles.</p> <p>a.  b.  c. </p> <p>d. Complete the table. Then write an equation that represents the sum S of the interior angle measures of a polygon with n sides.</p> <table border="1" data-bbox="834 1640 1474 1850"> <tr> <td>Number of sides, n</td> <td>5</td> <td>6</td> <td>7</td> </tr> <tr> <td>Number of triangles</td> <td>3</td> <td></td> <td></td> </tr> <tr> <td>Interior angle sum, S</td> <td></td> <td>720°</td> <td></td> </tr> </table> <p>Equation: _____</p>	Number of sides, n	5	6	7	Number of triangles	3			Interior angle sum, S		720°	
Number of sides, n	5	6	7											
Number of triangles	3													
Interior angle sum, S		720°												

MA.8.GR.1.6 (continued)

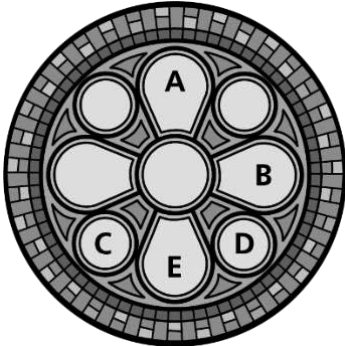
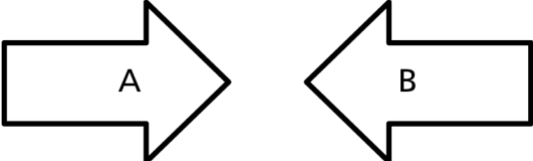
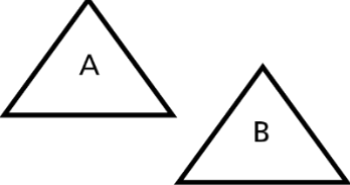
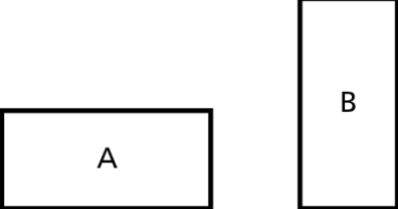
	Description	Evidence															
<p>2</p>	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Use a formula to find the sums of the interior angle measures of regular polygons. 	<p>Use the formula $S = (n - 2) \cdot 180^\circ$, where S is the sum of the interior angles of a polygon with n sides, to find the sum of the interior angles of each polygon.</p> <table border="1" style="width: 100%;"> <tr> <td data-bbox="703 531 762 590">a.</td> <td data-bbox="767 531 1082 653"></td> <td data-bbox="1086 531 1337 653">$S = \underline{\hspace{2cm}}$</td> </tr> <tr> <td data-bbox="703 659 762 718">b.</td> <td data-bbox="767 659 1082 781"></td> <td data-bbox="1086 659 1337 781">$S = \underline{\hspace{2cm}}$</td> </tr> <tr> <td data-bbox="703 787 762 846">c.</td> <td data-bbox="767 787 1082 909"></td> <td data-bbox="1086 787 1337 909">$S = \underline{\hspace{2cm}}$</td> </tr> <tr> <td data-bbox="703 915 762 974">d.</td> <td data-bbox="767 915 1082 1037"></td> <td data-bbox="1086 915 1337 1037">$S = \underline{\hspace{2cm}}$</td> </tr> <tr> <td data-bbox="703 1043 762 1102">e.</td> <td data-bbox="767 1043 1082 1165"></td> <td data-bbox="1086 1043 1337 1165">$S = \underline{\hspace{2cm}}$</td> </tr> </table>	a.		$S = \underline{\hspace{2cm}}$	b.		$S = \underline{\hspace{2cm}}$	c.		$S = \underline{\hspace{2cm}}$	d.		$S = \underline{\hspace{2cm}}$	e.		$S = \underline{\hspace{2cm}}$
a.		$S = \underline{\hspace{2cm}}$															
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d.		$S = \underline{\hspace{2cm}}$															
e.		$S = \underline{\hspace{2cm}}$															
<p>1</p>	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Identify polygons. 	<p>Match the polygon with its name.</p> <table style="width: 100%;"> <tr> <td data-bbox="703 1287 762 1325">a.</td> <td data-bbox="767 1287 1018 1388"></td> <td data-bbox="1023 1287 1337 1325">hexagon</td> </tr> <tr> <td data-bbox="703 1409 762 1446">b.</td> <td data-bbox="767 1409 1018 1509"></td> <td data-bbox="1023 1409 1337 1446">octagon</td> </tr> <tr> <td data-bbox="703 1535 762 1572">c.</td> <td data-bbox="767 1535 1018 1635"></td> <td data-bbox="1023 1535 1337 1572">pentagon</td> </tr> <tr> <td data-bbox="703 1661 762 1698">d.</td> <td data-bbox="767 1661 1018 1761"></td> <td data-bbox="1023 1661 1337 1698">quadrilateral</td> </tr> <tr> <td data-bbox="703 1787 762 1824">e.</td> <td data-bbox="767 1787 1018 1887"></td> <td data-bbox="1023 1787 1337 1824">triangle</td> </tr> </table>	a.		hexagon	b.		octagon	c.		pentagon	d.		quadrilateral	e.		triangle
a.		hexagon															
b.		octagon															
c.		pentagon															
d.		quadrilateral															
e.		triangle															

Evidence-Based Scale Worksheets

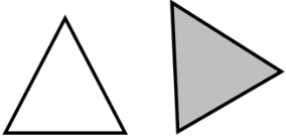

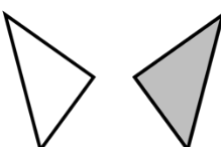
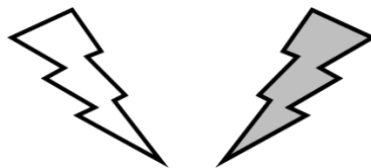
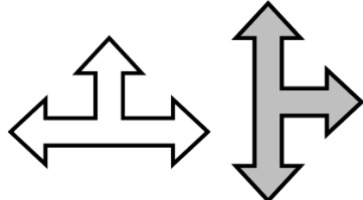
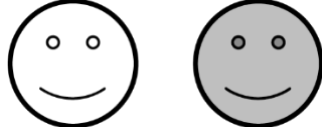
Geometric Reasoning

MA.8.GR.2.1 Given a preimage and image generated by a single transformation, identify the transformation that describes the relationship.

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

	Description	Evidence
<p>4</p>	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Solve real-world problems given a preimage and image generated by a single transformation and identify the transformation that describes the relationship. 	<p>Buildings often have decorative patterns and designs. Some designs are created by taking an image and transforming it.</p>  <p>What transformation could be used to move Shape A onto Shape B, Shape C onto Shape D, and Shape A onto shape E?</p>
<p>3</p>	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Identify the transformation that describes the relationship between a preimage and an image. 	<p>Identify the transformation that results in figure B from figure A.</p> <p>a.</p>  <p>b.</p>  <p>c.</p> 

MA.8.GR.2.1 (continued)

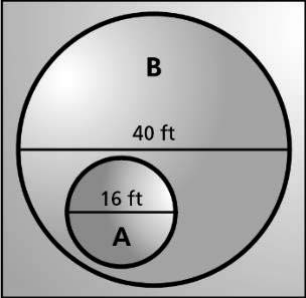
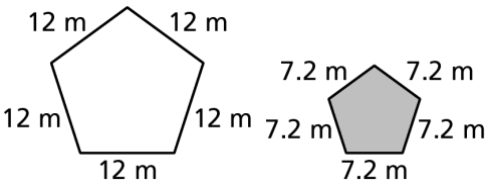
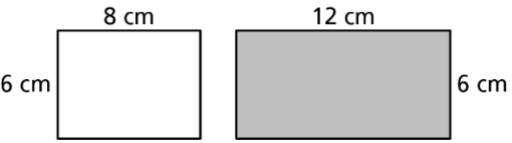
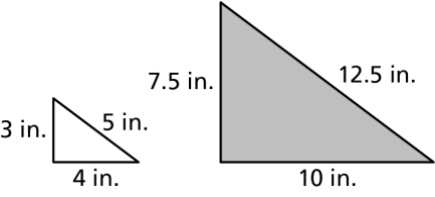
	Description	Evidence
<p>2</p>	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Choose the transformation that describes the relationship between a preimage and an image. 	<p>The unshaded figure is transformed to form the shaded figure. Match the transformation with the words.</p> <p>a.  reflection</p> <p>b.  rotation</p> <p>c.  translation</p>
<p>1</p>	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Describe how to move a preimage to get an image. 	<p>Describe how you can move the unshaded figure to get the shaded figure.</p> <p>a. </p> <p>b. </p> <p>c. </p>

Evidence-Based Scale Worksheets

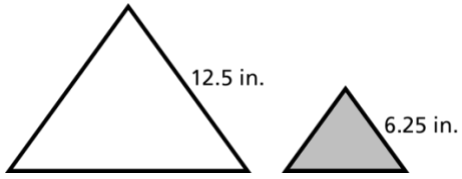
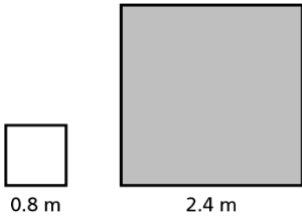
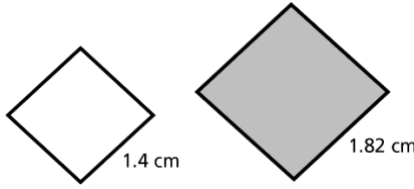

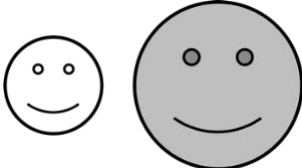
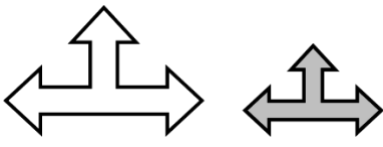
Geometric Reasoning

MA.8.GR.2.2 Given a preimage and image generated by a single dilation, identify the scale factor that describes the relationship.

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

	Description	Evidence
<p>4</p>	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Solve real-world problems given a preimage and image generated by a single dilation and identify the scale factor that describes the relationship. 	<p>Art often has decorative patterns and designs. Some designs are created by taking an image and transforming it.</p>  <p>Determine if shape B is a dilation of shape A. If it is, determine the dilation and the scale factor.</p>
<p>3</p>	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Identify the scale factor that describes the dilation between a preimage and an image. 	<p>Determine if the shaded shape is a dilation of the unshaded shape. If it is, identify the dilation and the scale factor.</p> <p>a.</p>  <p>b.</p>  <p>c.</p> 

MA.8.GR.2.2 (continued)

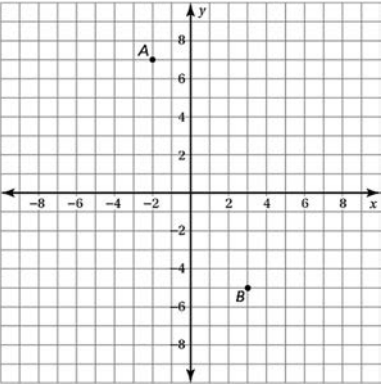
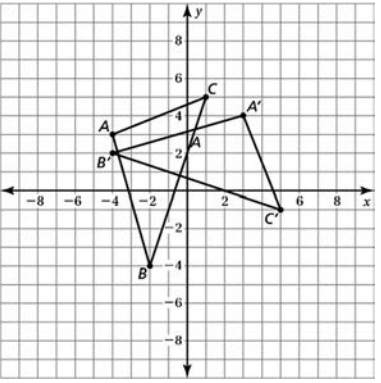
	Description	Evidence
<p>2</p>	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Choose the scale factor that describes the dilation between a preimage and an image. 	<p>Each unshaded figure is dilated to form the shaded figure. Find the scale factor.</p> <p>a. equilateral triangle</p>  <p>b. square</p>  <p>c. rhombus</p> 
<p>1</p>	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Identify the change from a preimage to an image. 	<p>The figures are similar. State if the unshaded figure is a reduction or an enlargement of the shaded figure.</p> <p>a.</p>  <p>b.</p>  <p>c.</p> 

Evidence-Based Scale Worksheets

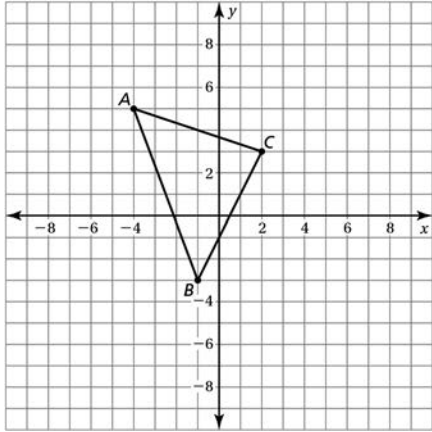
Geometric Reasoning

MA.8.GR.2.3 Describe and apply the effect of a single transformation on two-dimensional figures using coordinates and the coordinate plane.

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

	Description	Evidence
<p>4</p>	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Solve real-world problems by describing and applying the effect of a single transformation on two-dimensional figures using coordinates and the coordinate plane. 	<p>Computer and video game programmers use transformations when designing video games and animations. In a simplistic design, a person is at point A on the coordinate plane and moves to point B.</p> <p>a. Describe the transformation to get the person from point A to point B.</p>  <p>b. The point at B is rotated 180° about the origin. What are the coordinates of B'?</p>
<p>3</p>	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Describe and apply the effect of a single transformation on two-dimensional figures using coordinates and the coordinate plane. 	<p>a. Triangle ABC is transformed to form triangle $A'B'C'$. Describe the transformation.</p>  <p>b. Triangle ABC is at $A(12, 4)$, $B(3, -8)$, and $C(-2, 5)$. It is reflected about the x-axis to form triangle $A'B'C'$. What are the coordinates of A', B', and C'?</p>

MA.8.GR.2.3 (continued)

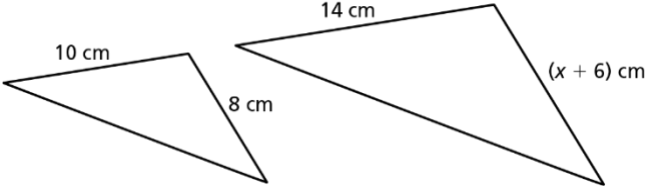
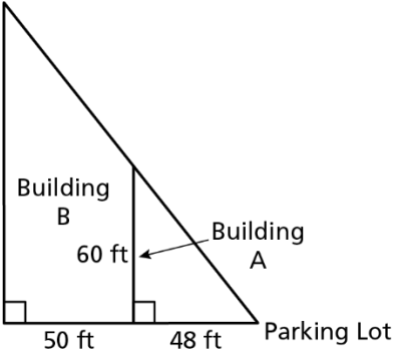
	Description	Evidence
<p>2</p>	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Apply the effect of a single transformation on two-dimensional figures using coordinates and the coordinate plane. 	<p>a. Triangle ABC is reflected about the y-axis to form triangle $A'B'C'$. What are the coordinates of A', B', and C'?</p>  <p>b. Triangle XYZ is at $X(2, 14)$, $Y(4, -10)$ and $Z(-6, -8)$. It is dilated by a scale factor of 1.5 about the origin to form triangle $X'Y'Z'$. What are the coordinates of X', Y', and Z'?</p>
<p>1</p>	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Plot points in the coordinate plane. 	<p>Plot the points on the coordinate plane.</p> <p>a. $A(-5, 3)$</p> <p>b. $B(4, -2)$</p> <p>c. $C(-2, -3)$</p>

Evidence-Based Scale Worksheets

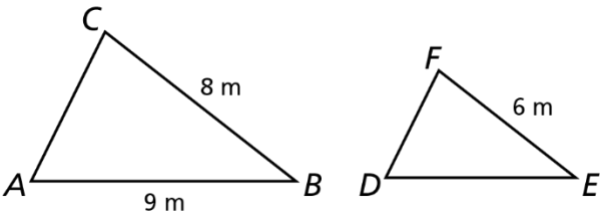
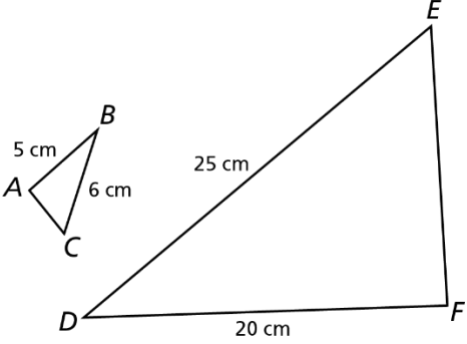
Geometric Reasoning

MA.8.GR.2.4 Solve mathematical and real-world problems involving proportional relationships between similar triangles.

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

	Description	Evidence
<p>4</p>	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> • Create real-world problems involving proportional relationships between similar triangles and solve them. 	
<p>3</p>	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> • Solve mathematical and real-world problems involving proportional relationships between similar triangles. 	<p>a. The triangles are similar. Solve for x.</p>  <p>A sixty-foot-tall building marked A is in front of a taller building marked B. There is 50 feet between the buildings. The sixty-foot-tall building is 48 feet from a parking lot.</p>  <p>b. How far away from the parking lot is building B?</p> <p>c. How tall is building B?</p>

MA.8.GR.2.4 (continued)

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Solve mathematical problems involving proportional relationships between similar triangles. 	<p>The triangles are similar.</p> <p>a. Find the length of side DE.</p>  <p>b. Find the length of side AC.</p> 
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Solve proportions. 	<p>Solve each proportion.</p> <p>a. $\frac{7}{12} = \frac{x}{18}$</p> <p>b. $\frac{24}{9} = \frac{20}{x}$</p> <p>c. $\frac{8.5}{x} = \frac{5}{15}$</p>

Evidence-Based Scale Worksheets

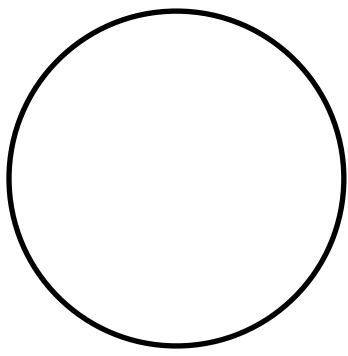
Data Analysis and Probability

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	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Ask students in class a question about a topic. Then create a circle graph from the data presented in class. 													
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Use proportional reasoning to interpret data in circle graphs. 	<p>The data in the circle graph shows the favorite animals of 7th graders. There are 10 students who favor cats.</p> <div style="text-align: center;"> <p>Favorite Pets</p> <table border="1" style="margin: 10px auto;"> <caption>Favorite Pets Data</caption> <thead> <tr> <th>Pet</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Dogs</td> <td>60%</td> </tr> <tr> <td>Cats</td> <td>20%</td> </tr> <tr> <td>Horses</td> <td>10%</td> </tr> <tr> <td>Rabbits</td> <td>5%</td> </tr> <tr> <td>Hamsters</td> <td>5%</td> </tr> </tbody> </table> </div> <p>a. How many 7th-grade students are there?</p> <p>b. What is the probability that a randomly chosen 7th-grade student likes dogs?</p>	Pet	Percentage	Dogs	60%	Cats	20%	Horses	10%	Rabbits	5%	Hamsters	5%
Pet	Percentage													
Dogs	60%													
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Hamsters	5%													

MA.7.DP.1.4 (continued)

	Description	Evidence												
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> • Construct a circle graph for the data. 	<p>Construct a circle graph for the data set.</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">Favorite Vegetable</th> <th style="width: 40%;">Respondents</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Carrots</td> <td style="text-align: center;">40</td> </tr> <tr> <td style="text-align: center;">Peas</td> <td style="text-align: center;">16</td> </tr> <tr> <td style="text-align: center;">Corn</td> <td style="text-align: center;">20</td> </tr> <tr> <td style="text-align: center;">Potatoes</td> <td style="text-align: center;">9</td> </tr> <tr> <td style="text-align: center;">Green Beans</td> <td style="text-align: center;">15</td> </tr> </tbody> </table> <div style="text-align: center; margin-top: 20px;">  </div>	Favorite Vegetable	Respondents	Carrots	40	Peas	16	Corn	20	Potatoes	9	Green Beans	15
Favorite Vegetable	Respondents													
Carrots	40													
Peas	16													
Corn	20													
Potatoes	9													
Green Beans	15													
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> • Solve proportions. 	<p>Solve the proportions for x.</p> <p>a. $\frac{20}{200} = \frac{x}{360}$</p> <p>b. $\frac{75}{100} = \frac{x}{360}$</p> <p>c. $\frac{120}{500} = \frac{x}{360}$</p>												

Evidence-Based Scale Worksheets


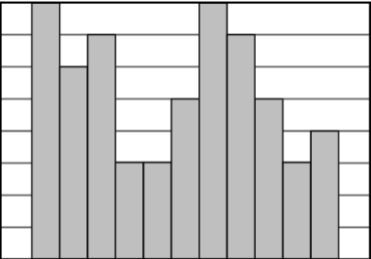
Data Analysis and Probability

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	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Explain what a histogram, bar graph, circle graph, line plot, box plot, and stem-and-leaf plot show in a data set. 	<p>Explain what a histogram, bar graph, circle graph, line plot, box plot, and stem-and-leaf plot show in a data set.</p>																																												
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Given a real-world numerical or categorical data set, create an appropriate data display to represent the data. 	<p>Create an appropriate data display to represent the data.</p> <p>a. Birthday Months of Employees</p> <table border="1" data-bbox="928 907 1436 1291"> <tr><td>Jan.</td><td>4</td><td>Jul.</td><td>5</td></tr> <tr><td>Feb.</td><td>3</td><td>Aug.</td><td>3</td></tr> <tr><td>Mar.</td><td>5</td><td>Sept.</td><td>3</td></tr> <tr><td>Apr.</td><td>7</td><td>Oct.</td><td>7</td></tr> <tr><td>May</td><td>8</td><td>Nov.</td><td>6</td></tr> <tr><td>Jun.</td><td>2</td><td>Dec.</td><td>8</td></tr> </table> <p>b. Number of Vacation Days for Employees</p> <table border="1" data-bbox="928 1390 1327 1759"> <tr><td>8</td><td>10</td><td>12</td><td>9</td></tr> <tr><td>16</td><td>14</td><td>15</td><td>17</td></tr> <tr><td>19</td><td>20</td><td>25</td><td>7</td></tr> <tr><td>21</td><td>22</td><td>23</td><td>16</td></tr> <tr><td>24</td><td>11</td><td>5</td><td>6</td></tr> </table>	Jan.	4	Jul.	5	Feb.	3	Aug.	3	Mar.	5	Sept.	3	Apr.	7	Oct.	7	May	8	Nov.	6	Jun.	2	Dec.	8	8	10	12	9	16	14	15	17	19	20	25	7	21	22	23	16	24	11	5	6
Jan.	4	Jul.	5																																											
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21	22	23	16																																											
24	11	5	6																																											

MA.7.DP.1.5 (continued)

	Description	Evidence																																																
<p>2</p>	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Given a real-world numerical or categorical data set, make a plan for how to create an appropriate data display to represent the data. 	<p>Make a plan for how to create an appropriate data display to represent the data.</p> <p>a.</p> <table border="1" data-bbox="791 396 1211 726"> <thead> <tr> <th colspan="4">Quiz Scores</th> </tr> </thead> <tbody> <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> </tbody> </table> <p>b.</p> <table border="1" data-bbox="791 827 1236 1157"> <thead> <tr> <th colspan="4">Books Read by a Class</th> </tr> </thead> <tbody> <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> </tbody> </table>	Quiz Scores				20	15	17	18	16	14	15	17	18	12	13	15	16	20	20	19	19	20	18	15	Books Read by a Class				30	18	9	16	34	15	25	8	11	16	19	22	33	31	7	11	22	24	25	21
Quiz Scores																																																		
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<p>1</p>	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Identify the type of data display. 	<p>Identify the type of data display.</p> <p>a.</p>  <p>b.</p> 																																																

Evidence-Based Scale Worksheets

Data Analysis and Probability

MA.8.DP.1.1 Given a set of real-world bivariate numerical data, construct a scatter plot or a line graph as appropriate for the context.

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

	Description	Evidence																								
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Tell a partner when it is the most appropriate time to use a scatter plot or a line graph. 																									
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Construct a scatter plot given a set of real-world bivariate numerical data. 	<p>The table shows the numbers of touchdowns scored and games won by 10 football teams. Make a scatter plot of the data.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Touchdowns, x</td> <td>28</td> <td>31</td> <td>38</td> <td>36</td> <td>39</td> </tr> <tr> <td>Games Won, y</td> <td>3</td> <td>5</td> <td>5</td> <td>6</td> <td>7</td> </tr> </table> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Touchdowns, x</td> <td>42</td> <td>46</td> <td>47</td> <td>51</td> <td>53</td> </tr> <tr> <td>Games Won, y</td> <td>9</td> <td>9</td> <td>10</td> <td>11</td> <td>13</td> </tr> </table>	Touchdowns, x	28	31	38	36	39	Games Won, y	3	5	5	6	7	Touchdowns, x	42	46	47	51	53	Games Won, y	9	9	10	11	13
Touchdowns, x	28	31	38	36	39																					
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Evidence-Based Scale Worksheets

Data Analysis and Probability

MA.8.DP.1.2 Given a scatter plot within a real-world context, describe patterns of association.

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

	Description	Evidence																						
<p>4</p>	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Provide examples of real-life data sets that have specific patterns of association. 	<p>Describe a set of real-life data that has the given relationship.</p> <p>a. positive linear relationship</p> <p>b. nonlinear relationship</p>																						
<p>3</p>	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Describe patterns of association within a real-world context of a scatter plot. 	<p>The scatter plot shows the temperature in degrees Fahrenheit and the number of skiers at a ski resort. Identify any outliers for the scatterplot. Describe the patterns of association.</p> <table border="1"> <caption>Data points from the scatter plot</caption> <thead> <tr> <th>Temperature (°F)</th> <th>Number of skiers</th> </tr> </thead> <tbody> <tr><td>20</td><td>400</td></tr> <tr><td>20</td><td>320</td></tr> <tr><td>25</td><td>380</td></tr> <tr><td>25</td><td>100</td></tr> <tr><td>30</td><td>350</td></tr> <tr><td>30</td><td>300</td></tr> <tr><td>35</td><td>250</td></tr> <tr><td>50</td><td>150</td></tr> <tr><td>50</td><td>120</td></tr> <tr><td>55</td><td>150</td></tr> </tbody> </table>	Temperature (°F)	Number of skiers	20	400	20	320	25	380	25	100	30	350	30	300	35	250	50	150	50	120	55	150
Temperature (°F)	Number of skiers																							
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35	250																							
50	150																							
50	120																							
55	150																							

MA.8.DP.1.2 (continued)

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> • Identify positive or negative associations given real-world contexts. 	<p>Does the given scenario describe a positive or negative association?</p> <ul style="list-style-type: none"> a. the number of years a plant has been growing and its height b. the speed of a car and the time it takes to arrive at a destination c. the outside temperature getting warmer and the heating bill d. the time spent exercising and the number of calories burned
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> • Define and describe the various types of associations in a scatter plot. 	<p>Define the association as it relates to data in a scatter plot.</p> <ul style="list-style-type: none"> a. positive/negative association b. linear/nonlinear association c. weak/strong association

Evidence-Based Scale Worksheets

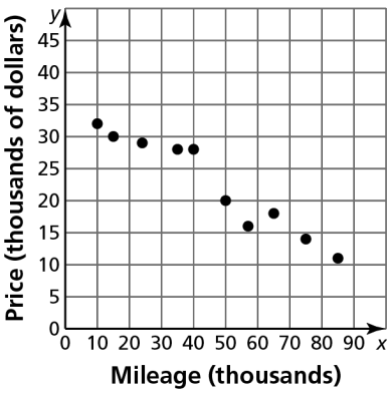
Data Analysis and Probability

MA.8.DP.1.3 Given a scatter plot with a linear association, informally fit a straight line.

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

	Description	Evidence																								
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Teach someone else how to fit a straight line to a scatter plot using a variety of tools. 																									
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Construct a scatter plot and draw a line of fit. 	<p>The table shows the daily high temperatures in degrees Fahrenheit and the numbers of frozen yogurts sold at a shop for several days. Make a scatter plot of the data and draw a line of fit.</p> <table border="1" data-bbox="836 940 1474 1161"> <tr> <td>Temperature (°F), x</td> <td>60</td> <td>63</td> <td>68</td> <td>70</td> <td>75</td> </tr> <tr> <td>Frozen yogurts sold, y</td> <td>38</td> <td>45</td> <td>55</td> <td>50</td> <td>55</td> </tr> </table> <table border="1" data-bbox="836 1230 1474 1451"> <tr> <td>Temperature (°F), x</td> <td>82</td> <td>85</td> <td>88</td> <td>90</td> <td>98</td> </tr> <tr> <td>Frozen yogurts sold, y</td> <td>70</td> <td>68</td> <td>70</td> <td>85</td> <td>92</td> </tr> </table>	Temperature (°F), x	60	63	68	70	75	Frozen yogurts sold, y	38	45	55	50	55	Temperature (°F), x	82	85	88	90	98	Frozen yogurts sold, y	70	68	70	85	92
Temperature (°F), x	60	63	68	70	75																					
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MA.8.DP.1.3 (continued)

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> Informally fit a line to a scatter plot. 	<p>Use a ruler, or another appropriate tool, to fit a line to a scatter plot.</p> 
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> Write an equation of a line that passes through two points. 	<p>Write an equation in slope-intercept form of the line that passes through the given points.</p> <p>a. (4, 5), (12, 3)</p> <p>b. (2, 2), (10, 6)</p>

**Evidence-
Based Scale
Worksheets****Data Analysis and Probability****MA.8.DP.2.1** Determine the sample space for a repeated experiment.**Circle the scale that best demonstrates your knowledge of the standard.**

	Description	Evidence
4	I can go beyond the standard. <ul style="list-style-type: none">• Explain how to find the sample space for a real-world scenario.	Mrs. Smith is making a seating chart for her 10 students. What is the total number of ways she can seat her students? Explain.
3	I understand the entire standard. <ul style="list-style-type: none">• Find the sample space of a repeated experiment.	Find the sample space of the experiment. a. rolling a six-sided die twice b. spinning a four-section spinner with colors red, orange, yellow, and blue twice c. tossing a coin three times

Evidence-Based Scale Worksheets

Data Analysis and Probability

MA.8.DP.2.2 Find the theoretical probability of an event related to a repeated experiment.

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

	Description	Evidence
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> • Create a repeated experiment. Find the theoretical probability of different outcomes. 	
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> • Find the theoretical probability of an event related to a repeated experiment. 	<p>A six-sided die is rolled twice. Find the theoretical probability of each event.</p> <p>a. rolling the same number twice</p> <p>b. rolling a sum greater than or equal to 9</p> <p>c. rolling two even numbers</p> <p>d. rolling a 6 at least one time</p>

MA.8.DP.2.2 (continued)

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> • Find the theoretical probability of an event related to a single experiment. 	<p>A bag of marbles contains 9 marbles. Of these 9 marbles, 3 are red, 3 are blue, and 3 are yellow. You reach in the bag and choose one marble. Find the probability of each event.</p> <ul style="list-style-type: none"> a. drawing a blue marble b. drawing a red or blue marble c. drawing a green marble
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> • Find the sample spaces of repeated experiments. 	<p>Find the sample space of each experiment.</p> <ul style="list-style-type: none"> a. tossing a coin three times b. spinning a three-section spinner, labeled with green, blue, and purple sections, twice

Evidence-Based Scale Worksheets

Data Analysis and Probability

MA.8.DP.2.3 Solve real-world problems involving probabilities related to single or repeated experiments, including making predictions based on theoretical probability.

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

	Description	Evidence
4	<p>I can go beyond the standard.</p> <ul style="list-style-type: none"> Design a simulation for a repeated experiment. Perform the simulation. Then find the theoretical probability of different outcomes. 	
3	<p>I understand the entire standard.</p> <ul style="list-style-type: none"> Solve real-world problems related to repeated experiments, including making predictions based on theoretical probability. 	<p>An experiment of flipping two coins is performed 2500 times. What is the expected number of outcomes for each event?</p> <p>a. heads twice</p> <p>b. tails at least once</p> <p>c. heads once and tails once</p>

MA.8.DP.2.3 (continued)

	Description	Evidence
2	<p>I understand some parts, but not the entire standard.</p> <ul style="list-style-type: none"> • Solve real-world problems related to a single experiment, including making predictions based on theoretical probability. 	<p>A spinner has 10 sections that are equal in size. The sections of the spinner are numbered 1 through 10. Predict the number of times each event will occur if the spinner is spun 1000 times.</p> <ul style="list-style-type: none"> a. spinning a 1 b. spinning a multiple of 3 c. spinning an even number d. spinning a 0
1	<p>I understand the basic skills needed to begin learning this standard.</p> <ul style="list-style-type: none"> • Find probabilities of events. 	<p>Find the probability of each event.</p> <ul style="list-style-type: none"> a. rolling an even number on a number cube b. choosing a number less than or equal to 6 from a bag containing marbles numbered 0–9