

Unit 5: Data Distributions – What Is Typical?

Essential Questions:

- How is variability in the distribution of a given data set described?
- What measure of central tendency best describes a data distribution?
- How can the location of the mean and the median of a data distribution to be estimated?
- How can the process of statistical investigation be used to pose questions?
- How are data collected and analyzed in order to answer questions?
- How can changes in data values in a distribution affect the median or the mean?

Desired Outcomes:

- The student will be able to use properties of distributions to describe the variability in a given data set.
- The student will be able use percents to report frequencies of occurrence of data.
- The student will be able to use a variety of displays to display data distributions.
- The student will be able to distinguish between numerical or categorical data.
- The student will be able to predict the effect of data changes in a distribution on the median or mean.
- The student will be able to accurately display and interpret data in frequency tables, stem-and-leaf plots and back-to-back stem-and-leaf plots.

Evidence of Learning:

1. The student will use properties of distributions to describe the variability in a given data set.
2. The student will use percents to report frequencies of occurrence of data.
3. The student will use a variety of displays to communicate data distributions.
4. The student will distinguish between numerical and categorical data.
5. The student will predict the effect of data changes in a distribution on the median or mean.
6. The student will accurately display and interpret data in frequency tables, stem-and-leaf plots and back-to-back stem-and-leaf plots.

Day / Lesson	Instructional Focus	VSC Alignment
<p>46 - 48</p> <p><u>Data Distributions:</u> Investigation 1, 1.1 – 1.3</p>	<p>Students will use properties of distributions to describe the variability in a given data set.</p> <p>Students will report frequencies of occurrence of data using percents.</p>	<p>Prior Knowledge:</p> <p>4.4.A.1.b Organize and display data in line plots and frequency tables using a variety of categories and sets of data</p> <p>5.4.A.1.a Collect data by conducting surveys to answer a question</p> <p>5.4.A.1.b Organize and display data in stem-and-leaf plots</p> <p>5.4.A.1.f Determine the appropriate type of graph to effectively display data</p> <p>5.4.B.1.a Interpret and compare data in stem and leaf plot</p> <p>Algebra Readiness:</p> <p>6.4.B.1.a Interpret frequency tables</p> <p>Assessment limit: Use no more than 5 categories or ranges of numbers and frequencies of no more than 25</p> <p>6.4.B.1.b Read and analyze circle graphs</p> <p>Assessment limit: Use no more than 5 categories or ranges of numbers and frequencies of no more than 25</p> <p>7.4.B.1.a Recognize and analyze faulty interpretation or representation of data</p> <p>Assessment limit: Use the choice of graphical display or the scale as leading to faulty interpretation or representation of data</p> <p>7.4.B.1.b Determine the best choice of a data display</p> <p>7.4.B.1.c Analyze misleading representation</p>

Assessment

Level 1 (EOL 4)	Level 2 (EOL 4)	Level 3/Transfer (EOL 4)
<p>Tell whether the data collected are categorical or numerical:</p> <ol style="list-style-type: none"> 1. The number of persons living in a household. 2. The favorite spare time activity 3. The amount of time spent doing homework 4. Favorite class at school 	<p>The sixth grade is planning a movie night in the theater. Molly is conducting a survey about movie interests of the sixth graders in order to gather information for possible movie choices. If Molly asks her classmates one categorical question and one numerical question, what could the questions be?</p> <p><u>Good Questions</u>, p. 116</p>	<p>You have been asked to prepare a report about the difference between categorical and numerical data. What information will you include to help a fellow student understand the difference?</p>

- **Word wall words:** variability, categorical data, numerical data

Day / Lesson	Instructional Focus	Alignment
49-50	AACPS Benchmark Assessment 1	This assessment is aligned to the VSC Grade 6 Assessment limits.

Day / Lesson	Instructional Focus	VSC Alignment
51 – 55 <u>Data</u> <u>Distributions:</u> Investigation 2, 2.1 – 2.4	<p>Students will use an equal share model and a balance model to understand the mean.</p> <p>Students will determine if the mean, median or mode best describes a data distribution.</p> <p>Students will relate the shape of a data distribution to the location of the mean and median.</p>	<p>Prior Knowledge: 4.5.B.2.1 Determine median, mode and range 5.4.B.2.a Determine the mean of a given data set or data display 5.4.B.2.b Apply the range and measure of central tendency to solve a problem or answer a question</p> <p>Algebra Readiness: 6.4.B.2.a Apply measures of central tendency (mean, median, mode) 7.5.B.2.a Analyze measure of central tendency to determine or apply mean, median, mode.</p>

Assessment

Level 1 (EOL 1)	Level 2 (EOL 1)	Level 3/Transfer (EOL 1)
<p>Mrs. Washington gave her class a 10-point quiz. Here are her students' scores:</p> <p>7,9,10,5,5,8,6,10,6,7,10,2,7,5,8,8,4,9,10,4,10,7,6</p> <p>Find the range, mode, mean and median of the quiz scores.</p>	<p>The mean number of children in six families is four. How many children might be in each family? Can you make a frequency table to represent this data?</p> <p><u>Good Questions</u>, p. 117</p>	<p>Mrs. Jacobs gave a math unit test worth 100 points. Following the test, she organized the scores into a stem-and-leaf plot. State five conclusions Mrs. Jacobs could make about her students' performance. Make reference to vocabulary words such as range, median, mean and mode. What do you think the unit of study was? Why?</p> <p><u>Good Questions</u>, p. 119 (Stem-and-leaf plot shown here)</p>

Day / Lesson	Instructional Focus	VSC Alignment
<p>56 - 57</p> <p>Addendum Lesson – Frequency Tables</p> <p><u>Impact Mathematics, Course 1, Sect. 6.2, Investigation 2</u></p> <p>Addendum Lesson – Back-to-back Stem-and-Leaf Plots</p> <p>Addendum Lesson – Circle Graph Questions</p>	<p>Students will organize, display and interpret data in frequency tables, stem-and-leaf plots, and back-to-back stem-and-leaf plots.</p> <p>Students will interpret data displayed in a circle graph.</p> <p><i>Teacher Note: Use the Circle Graph Questions in warm-ups and homework over the course of several days. The addendum lesson is not intended to be a separate lesson.</i></p>	<p>Prior Knowledge:</p> <p>5.4.A.1.b Organize and display data in stem-and-leaf plots</p> <p>5.4.A.1.f Determine the appropriate type of graph to effectively display data</p> <p>5.4.B.1.a Interpret and compare data in stem and leaf plot</p> <p>Algebra Readiness:</p> <p>6.4.A.1.a Organize and display data to make frequency tables</p> <p>Assessment limit: Use no more than 5 categories or ranges of numbers and total frequencies of no more than 25</p> <p>6.4.A.1.b Organize and display data to make stem-and-leaf plots</p> <p>Assessment limit: Use no more than 20 data points and whole numbers (0-999)</p> <p>7.4.A.1.a Organize and display data using back-to-back stem-and-leaf plots</p>

Assessment

Level 1 (EOL 7)	Level 2 (EOL 7)	Level 3/Transfer (EOL 7)																																
<p>pH data for two streams on the Eastern Shore were collected over a 15-day period in July. The data for both streams are indicated in the table below. Display the data in a back-to-back stem-and-leaf plot.</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">Stream #1 pH</th> <th style="padding: 5px;">Stream #2 pH</th> </tr> </thead> <tbody> <tr><td style="padding: 5px;">6.8</td><td style="padding: 5px;">6.8</td></tr> <tr><td style="padding: 5px;">6.4</td><td style="padding: 5px;">6.6</td></tr> <tr><td style="padding: 5px;">7.2</td><td style="padding: 5px;">7.0</td></tr> <tr><td style="padding: 5px;">6.2</td><td style="padding: 5px;">6.6</td></tr> <tr><td style="padding: 5px;">6.6</td><td style="padding: 5px;">6.7</td></tr> <tr><td style="padding: 5px;">6.4</td><td style="padding: 5px;">6.4</td></tr> <tr><td style="padding: 5px;">5.8</td><td style="padding: 5px;">6.4</td></tr> <tr><td style="padding: 5px;">7.4</td><td style="padding: 5px;">6.8</td></tr> <tr><td style="padding: 5px;">6.0</td><td style="padding: 5px;">6.6</td></tr> <tr><td style="padding: 5px;">6.8</td><td style="padding: 5px;">6.6</td></tr> <tr><td style="padding: 5px;">6.6</td><td style="padding: 5px;">6.0</td></tr> <tr><td style="padding: 5px;">6.2</td><td style="padding: 5px;">6.6</td></tr> <tr><td style="padding: 5px;">6.6</td><td style="padding: 5px;">6.2</td></tr> <tr><td style="padding: 5px;">7.8</td><td style="padding: 5px;">6.2</td></tr> <tr><td style="padding: 5px;">6.4</td><td style="padding: 5px;">6.4</td></tr> </tbody> </table>	Stream #1 pH	Stream #2 pH	6.8	6.8	6.4	6.6	7.2	7.0	6.2	6.6	6.6	6.7	6.4	6.4	5.8	6.4	7.4	6.8	6.0	6.6	6.8	6.6	6.6	6.0	6.2	6.6	6.6	6.2	7.8	6.2	6.4	6.4	<p>Using the pH data for Eastern shore streams, write two conclusions about the pH of the Eastern Shore stream data. Be prepared to support your statements with mathematical reasoning.</p>	<p>Using your back-to-back stem-and-leaf plots for the pH data for Eastern shore streams, answer the following questions:</p> <ol style="list-style-type: none"> 1. For which of the streams would a pH reading of 7.0 be considered typical? 2. How are the streams similar? 3. How are the streams different? <p>Be prepared to support your answers with mathematical reasoning.</p>
Stream #1 pH	Stream #2 pH																																	
6.8	6.8																																	
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Unit 6: Two – Dimensional Geometry

Essential Questions:

- What is the difference between area and perimeter?
- How are the areas of rectangles, parallelograms and triangles related?
- What formulas and procedures can be used to determine the area and perimeter of rectangles, parallelograms, and triangles?
- Is it possible for two-dimensional figures to have the same area and different perimeters or the same perimeters and different areas?
- What are situations in which area and perimeter are used to solve real-life problems?
- What are some relationships that exist between area and perimeter?
- What is the relationship between measuring and rational numbers?
- How are polygons classified?
- When examining the sum of the interior angles of a polygon, what patterns and relationships can be identified?

Desired Outcomes:

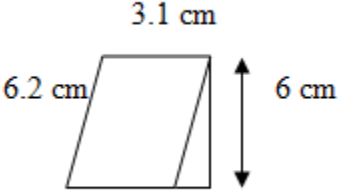
- The student will be able to determine the perimeter and area of rectangles, parallelograms, triangles, circles (circumference) and combined shapes.
- The student will be able to use area and perimeter to solve real-world problems.
- The student will be able to describe the relationship between the areas of rectangles, parallelograms, and triangles.
- The student will be able to draw and construct a variety of geometric relationships.
- The student will be able to measure real-world objects with accuracy.
- The student will be able to classify polygons using a variety of attributes.
- The student will be able to determine the measure of a third angle of a triangle.
- The student will be able to measure angles to the nearest degree.

Evidence of Learning:

1. The student will determine the area and perimeter of rectangles, parallelograms, triangles and circles (circumference), irregular and combined shapes.
2. The student will use area and perimeter to solve real-world problems.
3. The student will compare the areas of triangles and parallelograms to that of rectangles.
4. The student will construct congruent line segments, perpendicular bisectors, and angle bisectors.
5. The student will draw triangles and polygons within given parameters.
6. The student will classify polygons using a variety of attributes.
7. The student will determine the measure of a third angle of a triangle.
8. The student will determine the measure an angles to the nearest degree.

Day / Lesson	Instructional Focus	VSC Alignment
<p>58 – 60</p> <p>Addendum Lesson: Measuring to the 1/16 Inch</p> <p>Addendum Lesson: Diagonals</p> <p><u>Teaching Student- Centered</u> <u>Mathematics:</u> Activity 8.16, p. 253 Activity 8.17, p. 255</p>	<p>Students will identify, name, and measure line segments to the nearest $\frac{1}{16}$ inch.</p> <p>Students will identify the relationship between perimeter and area of quadrilaterals.</p> <p>Students will calculate the area of a parallelogram.</p> <p>Students will determine the missing dimension of polygons given the perimeter and one other dimension.</p>	<p>Prior Knowledge:</p> <p>5.2.A.1.a Identify and describe relationships of lines and line segments in geometric figures or pictures</p> <p>5.3.B.1.a Measure in customary and metric units using appropriate tools and units</p> <p>5.3.C.1.b Determine the area of rectangles</p> <p>5.3.C.1.c Find the area and perimeter of any closed figure on a grid</p> <p>Algebra Readiness:</p> <p>6.2.A.1.b Identify and describe line segments</p> <p>Assessment Limit: Use diagonal line segments</p> <p>6.3.B.1.a Measure in customary and metric units using appropriate tools and units</p> <p>Assessment Limit: Measure length to the nearest 1/16 inch with a ruler</p> <p>6.3.C.1.d Determine the missing dimension of a quadrilateral given the perimeter length</p> <p>Assessment Limit: Find length in a quadrilateral given the perimeter with whole number dimensions (0 – 200)</p> <p>6.3.C.1.e Determine the missing dimension of rectangles</p> <p>Assessment Limit: Find length in a square or rectangle given the area and whole number dimensions (0 – 200)</p> <p>7.3.C.1.a Estimate and determine the area of quadrilaterals</p> <p>Assessment Limit: Use parallelograms or trapezoids and whole number dimensions (0 – 1000)</p> <p>7.3.C.2.b Determine the distance between 2 points using a drawing and a scale</p>

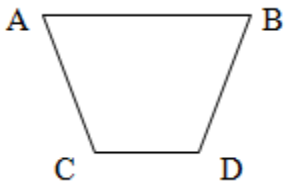

Assessment

Level 1 (EOL 1)	Level 2 (EOL 1, 2)	Level 3/Transfer (EOL 1, 2)
<p>Find the area of the parallelogram below:</p> 	<p>Karl and Rita are building a playhouse. The floor of the playhouse will be a rectangle that is 6 feet by $8\frac{1}{2}$ feet.</p> <ol style="list-style-type: none"> How much carpeting do Karl and Rita need to cover the floor? How much molding do they need around the edges of the floor? <p>Be prepared to convince someone that you are correct.</p> <ol style="list-style-type: none"> If the perimeter of the floor of the playhouse stays the same, but one dimension increases to 7 feet, what will be the other dimension of the floor of the playhouse? 	<p>Claire and Chad want to design a rectangular pen for their new puppy. They want a pen to have an area of 48 square feet. Fencing costs \$0.85 per foot.</p> <ol style="list-style-type: none"> What are the dimensions and the cost of the least expensive pen Claire and Chad could build, assuming the side lengths are whole numbers? Explain. What are the dimensions and the cost of the most expensive pen Claire and Chad could build, assuming the side lengths are whole numbers? Explain. Give the dimensions and the cost of a rectangular pen with whole number side lengths and a cost between the least and most expensive pens you found in parts (a) and (b). Of the three pens you found, which one would you suggest that Claire and Chad build? Explain your choice.

Day / Lesson	Instructional Focus	Alignment
61 <i>Teacher Note: A common assessment to be used by all teachers should be developed</i>	Unit 5 – Data Distributions – What Is Typical? Assessment Clarify, Refine, Extend Student Understanding and Proficiency	

Day / Lesson	Instructional Focus	VSC Alignment
62 - 64 <u>Impact Mathematics, Course 1:</u> Lesson 8.1, Investigation 1 Investigation 2 Addendum Lesson: Copying and Bisecting Lines and Angles – see below	Students will investigate angle relationships. Students will measure angles in polygons. Students will construct line segments, angles, perpendicular bisectors, and angle bisectors. Teacher Note: <i>It is important when measuring angles to provide angles with sides of different lengths in order to dispel the misconception that the lengths of the sides determine the angle measure.</i>	Prior Knowledge: 5.3.B.2.a Measure a single angle and angles in regular polygons Algebra Readiness: 6.3.B.2 Measure angles in polygons 6.2.C.1.c Identify or describe angle relationships Assessment Limit: Use perpendicular bisectors or angle bisectors 7.2.C.1.b Construct geometric figures using a variety of construction tools Assessment Limits: Construct a line segment congruent to a given line segment 7.2.C.1.c Construct geometric figures using a variety of construction tools Assessment Limits: Construct a perpendicular bisector to a given line segment or a bisector of a given angle

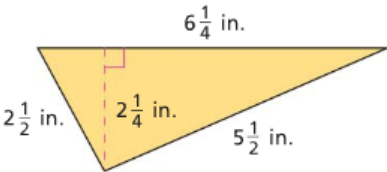
Assessment

Level 1 (EOL 8)	Level 2 (EOL 4)	Level 3/Transfer (EOL 8)
Use a protractor to measure $\angle BDC$ in the polygon below. 	Part A: Use appropriate tools to bisect the following angle.  Part B: Use your knowledge of bisectors to justify your answer. Use words, numbers, and/or symbols to support your	What attribute is being described when an angle is measured? How is the unit of measure for an angle related to that attribute? Why is that important? Teacher Note: The attribute being described is the distance measured between the two rays. Each degree measurement is actually an angle.

	answer.	
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Day / Lesson	Instructional Focus	VSC Alignment
<p>65 – 68</p> <p><u>Teaching Student-Centered Mathematics:</u> Activity 7.4, p. 197 (classify) Activity 7.12, p. 207 (sum of interior angles)</p> <p><u>Impact Mathematics, Course 1:</u> Lesson 8.4 Investigation 2 (area of a triangle)</p> <p>Addendum Lesson: Drawing Triangles</p>	<p>Students will analyze geometric relationships of triangles in order to:</p> <ul style="list-style-type: none"> • Classify triangles using a variety of properties • Find the missing measure of an interior angle of a triangle • Calculate the area of a triangle • Draw triangles using a protractor and a ruler 	<p>Prior Knowledge: 5.2.A.2.a Compare and classify quadrilaterals by length of sides and types of angles (Include the angle symbol $\angle ABC$) 5.2.A.2.b Compare triangles by sides 5.3.C.1.b Determine area (rectangles)</p> <p>Algebra Readiness: 6.2.A.2.a Compare and classify triangles by sides Assessment Limit: Use scalene, equilateral, or isosceles 6.2.A.2.b Compare and classify triangles by angle measurement Assessment Limit: Use equiangular, obtuse, acute, or right 6.2.A.2.c Determine a third angle measure of a triangle given two angle measures Assessment Limit: Use the concept of the sum of angles in any triangle is 180° without using a diagram 6.2.C.1.a Draw geometric figures using a variety of tools. Assessment Limit: Draw triangles given the measures of 2 sides and one angle or 2 angles and 1 side using whole numbers (0 – 20) and angle measures (1° - 179°) 6.3.C.1.a Estimate and determine the area of a polygon. Assessment Limit: Use triangles and whole number dimensions (0 – 200)</p>

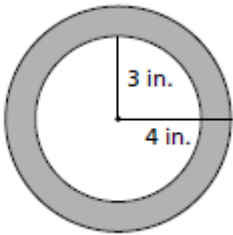
Assessment

Level 1 (EOL 1)	Level 2 (EOL 1)	Level 3/Transfer (EOL 1)
<p>Find the area of the triangle.</p> 	<p>The area of a triangle is 6 square units. Both the height and the base are whole numbers. What are the possible heights and bases? Support your answer with mathematical reasoning.</p>	<p>a. Find the area of each triangle below. Triangle 1: base = 4 cm height = 1.5 cm Triangle 2: base = 8 cm height = 3 cm</p> <p>b. How are the heights of these triangles related to each other?</p> <p>c. How are the bases of these triangles related to each other?</p> <p>d. How are the areas of these triangles related to each other? Why do you think that is true?</p>

- **Word wall words:** triangles, interior angles, scalene, equilateral, isosceles, equiangular, acute triangle, obtuse triangle, right triangle

Day / Lesson	Instructional Focus	VSC Alignment
<p>69 – 72</p> <p><u>Impact</u> <u>Mathematics,</u> <u>Course 1</u> Lesson 8.2, Investigation 2</p> <p><u>Impact</u> <u>Mathematics,</u> <u>Course 1</u> Lesson 8.4, Investigation 3</p>	<p>Students will analyze geometric relationships in circles to determine:</p> <ul style="list-style-type: none"> • Parts of a circle • The meaning of pi and its approximation • Circumference of a circle • Area of a circle <p>Students will construct circles with a given radius using appropriate tools.</p>	<p>Prior Knowledge: 5.2.A.1.c Identify and describe the radius and diameter of a circle</p> <p>Algebra Readiness: 6.2.A.1.c Identify and describe the parts of a circle Assessment Limit: use radius, diameter, or circumference 6.2.A.2.d Identify and compare the relationship between parts of a circle Assessment Limit: use radius, diameter, or circumference ($\pi = 3.14$) 7.2.C.1.a Construct geometric figures using a variety of construction tools Assessment Limit: Construct a circle using a given line segment as the radius in whole number inches or centimeters 8.3.C.1.a Estimate and determine the circumference or area of a circle Assessment Limit: include circles using rational numbers with no more than 2 decimal places (0 – 10,000)</p>

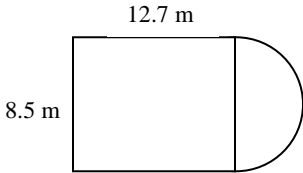
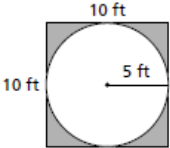
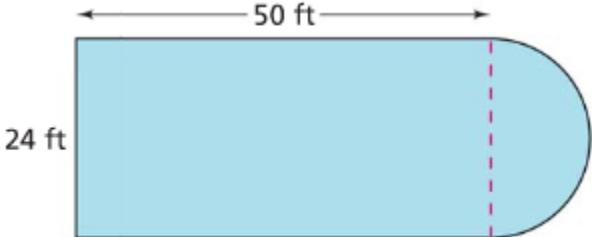
Assessment

Level 1 (EOL 1)	Level 2 (EOL 1)	Level 3/Transfer (EOL 1, 2)
<p>Find the circumference and area of a circle with a diameter of 9.8 centimeters.</p>	<p>Find the area of each shaded region to the nearest tenth.</p> <div style="text-align: center;">  </div> <p>Be prepared to convince someone that your answer is correct.</p>	<p>A circular cherry pie has a diameter of 11 inches and is cut into 8 equal-size pieces. What is the area of each piece of pie? Support your answer with mathematical reasoning.</p>

- **Word wall words:** radius, diameter, circumference, pi

Day / Lesson	Instructional Focus	VSC Alignment
<p>73</p> <p>Technology: Middle School Math for Smart Notebook: Area of Irregular Figures (6M008), Area of Irregular Figures (7M004), Area of Irregular Figures (8M002)</p>	<p>Students will find the area of composite figures.</p>	<p>Prior Knowledge: 5.2.A.1.b Identify polygons within a composite figure</p> <p>Algebra Readiness: 6.3.C.1.c Estimate and determine the area of a composite figure Assessment Limit: Use composite figures with no more than four polygons (triangles or rectangles) and whole number dimensions (0 – 500) 8.3.C.1.b Estimate and determine the area of a composite figure Assessment Limit: Include composite figures with no more than six polygons (triangles, rectangles or circles) by measuring, partitioning, or using formulas with whole number dimensions (0 – 10,000)</p>

Assessment

Level 1 (EOL 1)	Level 2 (EOL 1)	Level 3/Transfer (EOL 2)
<p>Find the area of the composite figure.</p> 	<p>Find the area of each shaded region to the nearest tenth.</p> 	<p>Part A: The swimming pool below is a rectangle with a semicircle at one end. What is the area and perimeter of the pool?</p>  <p>Part B: If the pool owners wanted to increase the 50 foot side by 1.7 feet and decrease the 24 foot side by 1.4 feet, how would that change the area of the pool?</p>

		Justify your response.
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- **Word wall words:** composite figures

Unit 7: Integers

Essential Questions:

- What are real-life situations that are represented by negative values?
- How is the understanding of negative integers connected to algebraic concepts?
- How is zero defined?
- How are sums, differences, products, and quotients of integers determined?

Desired Outcomes:

- The student will be able to use appropriate notation to indicate positive and negative numbers.
- The student will be able to locate rational numbers (positive and negative fraction and decimals and zero) on a number line.
- The student will be able to compare and order rational numbers.
- The student will be able to develop algorithms for adding, subtracting, multiplying, and dividing with positive and negative numbers.
- The student will be able to understand the relationship between a positive or negative number and its opposite (additive inverse.)
- The student will be able to write mathematics sentences to show relationships.
- The student will be able to understand and use the Commutative Property for addition and multiplication of positive and negative numbers.
- The student will be able to apply the Distributive Property with positive and negative numbers to simplify expressions and solve problems.
- The student will be able to use positive and negative numbers to graph in four quadrants and to model and answer questions about applied settings.

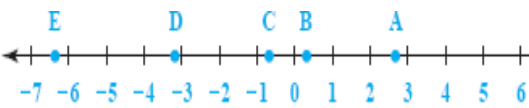

Evidence of Learning:

1. The student will use appropriate notation to indicate positive and negative numbers.
2. The student will locate rational numbers (positive and negative fraction and decimals and zero) on a number line.
3. The student will compare and order rational numbers.
4. The student will develop, explain and use algorithms for adding, subtracting, multiplying, and dividing with positive and negative numbers.
5. The student will understand the relationship between a positive or negative number and its opposite (additive inverse.)

6. The student will be able to write mathematics sentences to show relationships.
7. The student will understand and use the Commutative Property for addition and multiplication of positive and negative numbers.
8. The student will apply the Distributive Property with positive and negative numbers to simplify expressions and solve problems.
9. The student will use positive and negative numbers to graph in four quadrants and to model and answer questions about applied settings.
10. The student will represent the translation, reflection, and rotation of a polygon on a four quadrant coordinate plane.

Day / Lesson	Instructional Focus	VSC Alignment
<p>74 - 77</p> <p><u>Accentuate the Negative:</u> Investigation 1, 1.1 – 1.4</p>	<p>Students will use appropriate notation for positive and negative numbers in real-life settings.</p> <p>Students will determine the relationship between a number and its opposite.</p> <p>Students will locate positive and negative number on a number line and compare and order them.</p> <p>Students will represent integers using a variety of models.</p> <p>Teacher Note: Add integers to the growing number line.</p>	<p>Prior Knowledge</p> <p>5.6.A.1.a Read, write, and represent fractions or mixed numbers using symbols, words, and models</p> <p>5.6.A.1.b Read, write, and represent decimals using symbols, words, and models</p> <p>5.6.A.1.d Compare and order fractions with or without using the symbols (<,>, or =)</p> <p>5.6.A.1.e Compare, order and describe decimals with or without using the symbols (<,>, or =)</p> <p>Algebra Readiness:</p> <p>6.6.A.1.b Read, write, and represent integers Assessment limit: Use integers from -100 to 100</p> <p>6.6.A.1.e Compare and order integers</p> <p>6.1.C.1.a Represent rational numbers on a number line Assessment limit: Use integers (-20 to 20)</p> <p>7.6.A.1.d Compare, order and describe rational numbers with or without relational symbols (<,>,+) Assessment limit: Use no more than 4 fractions with denominators that are factors of 300 that are less than 101 (0-100), decimals with no more than 4 decimal places (0-100), percents (0-100) or integers (-100 to 100)</p> <p>8.7.A.1.b Compare, order and describe rational numbers with and without relational symbols (<,>=) Assessment limit: Use no more than 4 integers (-100 to 100) or positive rational numbers (0 – 100) using equivalent forms or absolute value</p>

Assessment


Level 1 (EOL 1,2)	Level 2 (EOL 1,2)	Level 3 (EOL 2,3)																						
<p>Name a number that could describe the approximate location of each labeled point.</p> 	<p>Use the number line below to:</p> <p>A. Locate the numbers in parts -8, 0, $\frac{1}{3}$</p> <p>B. In a different color, locate the opposite of each number in Part A.</p>  <p>Explain how you determined your answer.</p>	<p>Ten students measured the outside temperature at different times on the same winter day. Their results are shown in the table below.</p> <ol style="list-style-type: none"> Create a table that shows the temperatures in order from warmest to coldest. On the night the students recorded the temperatures, a weather reporter said, “The average temperature today was a chilly 0°F.” Which students recorded temperatures that were closest to the average temperature? <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Student</th> <th style="text-align: left;">Temperature</th> </tr> </thead> <tbody> <tr><td>Kira</td><td>-0.33 °F</td></tr> <tr><td>Jillian</td><td>1.30 °F</td></tr> <tr><td>Fabio</td><td>-0.80 °F</td></tr> <tr><td>Xavier</td><td>0.33 °F</td></tr> <tr><td>Michaela</td><td>-1.30 °F</td></tr> <tr><td>Brandon</td><td>-1.80 °F</td></tr> <tr><td>Paulina</td><td>1.08 °F</td></tr> <tr><td>Kwame</td><td>-1.75 °F</td></tr> <tr><td>Matt</td><td>-1.00 °F</td></tr> <tr><td>La’Nae</td><td>0.80 °F</td></tr> </tbody> </table> <p style="text-align: center; margin-top: 20px;">Be prepared to justify why your answer is correct.</p>	Student	Temperature	Kira	-0.33 °F	Jillian	1.30 °F	Fabio	-0.80 °F	Xavier	0.33 °F	Michaela	-1.30 °F	Brandon	-1.80 °F	Paulina	1.08 °F	Kwame	-1.75 °F	Matt	-1.00 °F	La’Nae	0.80 °F
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• **Word wall words:** positive number, negative number, opposites, integer, number line

Day/Lesson	Instructional Focus	Alignment
78 <i>Teacher Note: A common assessment to be used by all teachers should be developed</i>	Unit 6 – Two-Dimensional Geometry Assessment Clarify, Refine and Extend Student Understanding and Proficiency	

Day / Lesson	Instructional Focus	VSC Alignment
<p>79 -81</p> <p><u>Accentuate the Negative:</u></p> <p>Investigation 2, 2.1 – 2.3</p>	<p>Students will develop and use rules (algorithms) for adding and subtracting integers.</p> <p>Students will define and use absolute value.</p> <p>Students will observe that the Commutative Property holds for addition of rational numbers.</p> <p>Students will recognize and solve problems involving the addition and subtraction of integers.</p>	<p><i>Prior Knowledge</i></p> <p>3.6.C.1.g Identify and use properties of multiplication</p> <p><i>Algebra Readiness</i></p> <p>7.6.C.1.a Add, subtract, multiply, and divide integers Assessment limit: Use one operation (-100 to 100)</p> <p>8.6.C.1.a Add, subtract, multiply, and divide integers Assessment limit: Use one operation (-1000 to 1000)</p>

Assessment

Level 1 (EOL 4,6)	Level 2 (EOL 4,6)	Level 3 (EOL 4, 5)										
<p>Write an addition sentence and a subtraction sentence to represent what is shown on the number line</p>  <p>The number line shows integers from -7 to 4. A dashed vertical line is at -3, and another dashed vertical line is at -7. A horizontal arrow points from -3 to -7, indicating a subtraction of 4.</p>	<p>Using at least two different representations solve the following:</p> <p style="text-align: center;">$11 - 23 = ?$</p> <p>Justify why your answer is correct.</p>	<p>The school store bought supplies worth \$250 to open the school year, so they started recording their account with a balance of \$-250.</p> <p><u>Part A:</u> What was their account balance after the changes that took place during September, October, November, and December? (use the table given)</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th style="text-align: center;">Month</th> <th style="text-align: center;">Change</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">September</td> <td style="text-align: center;">Income of \$175</td> </tr> <tr> <td style="text-align: center;">October</td> <td style="text-align: center;">Income of \$200, cost of new supplies \$125</td> </tr> <tr> <td style="text-align: center;">November</td> <td style="text-align: center;">Income of \$125</td> </tr> <tr> <td style="text-align: center;">December</td> <td style="text-align: center;">Income of \$60, cost of new supplies \$150</td> </tr> </tbody> </table> <p><u>Part B.</u> Suppose the starting balance had been shown as +105. How would that change the ending account balance in December?</p> <p>Be prepared to justify your answer.</p>	Month	Change	September	Income of \$175	October	Income of \$200, cost of new supplies \$125	November	Income of \$125	December	Income of \$60, cost of new supplies \$150
Month	Change											
September	Income of \$175											
October	Income of \$200, cost of new supplies \$125											
November	Income of \$125											
December	Income of \$60, cost of new supplies \$150											

• **Word wall words:** algorithm, absolute value, difference, sum, Commutative Property

Day / Lesson	Instructional Focus	VSC Alignment
<p>82 - 85</p> <p><u>Accentuate the Negative:</u></p> <p>Investigation 3, 3.1 – 3.4</p>	<p>Students will use models to connect repeated addition and multiplication of integers.</p> <p>Students will develop and use rules (algorithms) for multiplying integers.</p> <p>Students will use fact families to relate the multiplication and division of integers.</p> <p>Student will develop and use rules (algorithms) for dividing integers.</p> <p>Students will recognize and solve problems involving multiplication and division of integers.</p>	<p><i>Prior Knowledge</i></p> <p><i>Algebra Readiness</i></p> <p>7.6.C.1.a Add, subtract, multiply, and divide integers Assessment limit: Use one operation (-100 to 100)</p> <p>8.6.C.1.a Add, subtract, multiply, and divide integers Assessment limit: Use one operation (-1000 to 1000)</p>

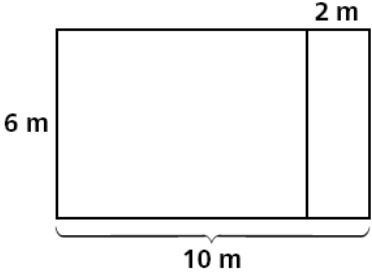
Assessment

Level 1 (EOL 4)	Level 2 (EOL 4)	Level 3 (EOL 4)
<p>Solve each of the following:</p> $^{-}8 \times ^{-}4$ $120 \div ^{-}4$	<p>The list below gives monthly average low temperatures (in °F) for International Falls, Minnesota from November through March.</p> <p style="text-align: center;">17, 0, -9, -3, 10</p> <p>What is the mean of these monthly low temperatures? Explain how you determined your answer.</p>	<p>Two years ago County Bank charged \$25.75 every time a customer's account didn't have enough money. At that time, customer A's account ran out of funds 3 times.</p> <p>Part A: Create a model, using numbers, pictures, and/or symbols to represent this situation.</p> <p>Part B: This year, County Bank will charge \$35.25 each time an account has insufficient funds. How much more money will Customer A be charged this year if his account runs out of funds three times. Explain how you determined your answer.</p>

- **Word wall words:** expression

Day / Lesson	Instructional Focus	VSC Alignment
<p>86 - 88</p> <p><u>Accentuate the Negative:</u> Investigation 4, 4.2 – 4.3</p>	<p>Students will use the distributive property to simplify and solve problems.</p>	<p>Prior Knowledge</p> <p>Algebra Readiness</p> <p>6.6.C.1.f Simplify numeric expressions using the properties of addition and multiplication</p> <p>Assessment Limit: Use the distributive property to simplify numeric expressions with whole numbers (0-1000)</p> <p>7.6.C.1.f Identify and use the properties of addition and multiplication to simplify expressions</p> <p>Assessment Limit: Use the commutative property of addition or multiplication, associative property of addition or multiplication, or the identity property for one or zero with whole numbers (0-100)</p>

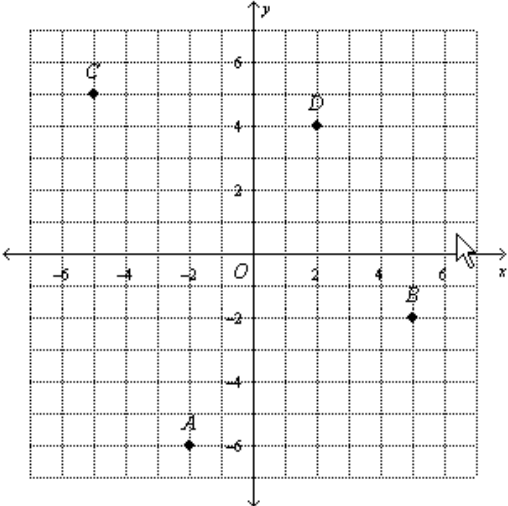
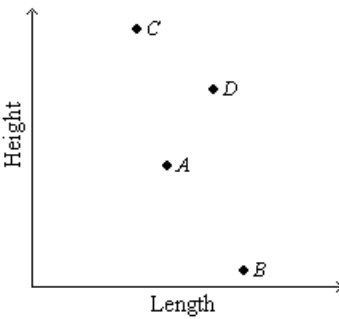
Assessment

Level 1 (EOL 8)	Level 2 (EOL 8)	Level 3 (EOL 8)
<p>Use your knowledge of the Distributive Property to fill in the blanks.</p> <p>a. $4 \times \underline{\quad} + 4 \times \underline{\quad} = 4(3 + 7)$</p> <p>b. $-3(4 + 2) = \underline{\quad} \times 4 + -3 \times \underline{\quad}$</p>	<p>Use the distributive property to explain how to determine the areas of the 2 smaller rectangles and use that information to find the total area of the largest rectangle. Be prepared to explain your thinking.</p> <div style="text-align: center;">  <p>The diagram shows a large rectangle with a height of 6 m and a total width of 10 m. A vertical line divides the rectangle into two smaller rectangles. The width of the right-hand rectangle is labeled as 2 m.</p> </div> <p>Be prepared to justify your response.</p>	<p>Lisa and three of her friends are going hiking. Lisa buys 2 bottles of water and 2 packs of trail mix for each friend and herself.</p> <p>Part A. Can Lisa go through the express checkout lane for customers with 15 or fewer items? Use the distributive property to explain how you know.</p> <p>Part B. One of Lisa's friends decides not to go hiking. Lisa now buys 2 bottles of water and 3 packs of trail mix for everyone in the group. Will she be able to go through the express checkout lane? Be prepared to explain how you know.</p>

- **Word wall words:** Distributive Property, distribute, order of operations

Day / Lesson	Instructional Focus	VSC Alignment
<p>89</p> <p><u>Accentuate the Negative:</u> Investigation 2, Lesson 2.5</p>	<p>Students will interpret points that are plotted on a coordinate plane.</p> <p>Students will plot points in all four quadrants of the coordinate plane.</p> <p>Students will identify the quadrants in which coordinate points are plotted.</p>	<p>Prior Knowledge</p> <p>5.1.C.1.b Create a graph in the coordinate plane Assessment limit: Use the first quadrant and ordered pairs of whole numbers (0 – 50)</p> <p>Algebra Readiness</p> <p>6.1.C.1.b Graph ordered pairs in a coordinate plane Assessment limit: Use no more than 3 ordered pairs of integers (-20 to 20) or no more than 3 ordered pairs of fractions/mixed numbers with denominators of 2 (-10 to 10)</p> <p>7.1.C.1.b Graph ordered pairs in a coordinate plane Assessment limit: Use no more than 4 ordered pairs of integers (-20 to 20)</p>

Assessment

Level 1 (EOL 9)	Level 2 (EOL 9)	Level 3 (EOL 9)
<p>Name the coordinates of points A, B, C, and D shown below.</p> <div style="text-align: center;">  </div> <p>If he connects the points together, what polygon is created?</p> <ul style="list-style-type: none"> <input type="checkbox"/> a rectangle <input type="checkbox"/> a square <input type="checkbox"/> a trapezoid <input type="checkbox"/> a rhombus <input type="checkbox"/> a quadrilateral 	<p>The points on the graph below represent the height (from top to bottom) and length (form head to tail) of a snake, a giraffe, an elephant, and a horse.</p> <div style="text-align: center;">  </div> <p>Compare points A, B, C, D. Label each point with its corresponding animal. Be prepared to explain how you know.</p>	<p>Charlie knows that a point is plotted in Quadrant 4. What information is known about the point?</p>

• **Word wall words:** Cartesian coordinate plane, coordinate, ordered pair, quadrant, origin