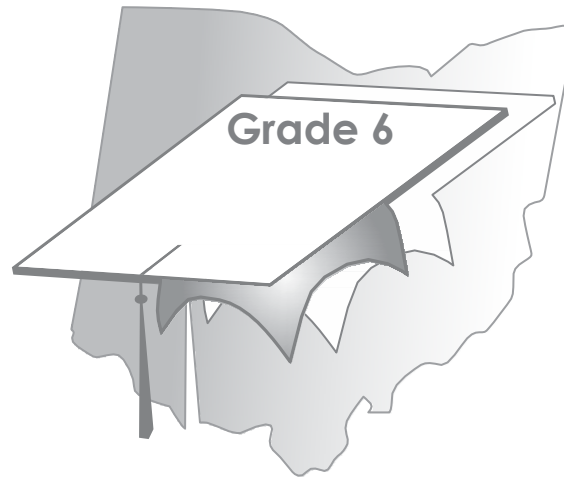


# Alternate Assessment for Students with the Most Significant Cognitive Disabilities (AASCD)

## Test Specifications



Grade 6 Mathematics

## **Introduction**

The Test Specifications provide an overview of the structure and content of Ohio’s Alternate Assessment for Students with the Most Significant Cognitive Disabilities (AASCD). This overview includes a description of the test design as well as information on the items that will appear on the test. Also included is a test blueprint, a document that identifies the range and distribution of items grouped into various reporting categories. The specifications also provide specific guidelines for the development of all items used for Ohio’s AASCD. This document is a resource not only for item writers and test designers, but also for Ohio educators and other stakeholders who are interested in a deeper understanding of the test.

## **Test Design Overview**

The AASCD is an online assessment designed to maximize access for students with the most significant cognitive disabilities and ensure that all students are included in Ohio’s statewide assessment and accountability programs. A student who qualifies for the AASCD is unable to participate in the state’s regular assessment, even with allowable accommodations. However, it is expected that the majority of students who take the AASCD will require supports and accessibility features to access or respond to the test. This is considered in the test design and the AASCD does allow for most student accommodations of any type. Accommodations are considered to be adjustments to the standard testing conditions, test format or test administration that provide equitable access to a student.

There are three test modes for the AASCD; online, supplemental and full paper. Supplemental braille materials are also available to be used with the supplemental and full paper test modes. Regardless of test mode, questions cannot be skipped and must be administered in the order they are presented. Tests are given at each individual grade level and consist of 50 questions per test. The questions are of varying complexity levels and all questions created for the AASCD align to Ohio’s Learning Standards-Extended.

## Complexity Levels

The Ohio Learning Standards-Extended (OSL-E) include three levels from “most complex” to “least complex”. The complexity levels are comprised of three targets of varying difficulty aligned to each standard from the Ohio Learning Standards (OLS). The extensions are codified individually for clear designation. The last letter in the extension code indicates the complexity level: “a” denotes the highest level of complexity, “b” denotes the middle complexity level and “c” denotes the lowest complexity level. In some instances, the verb of the extension is tiered to increase or decrease the complexity level. In other cases, the concept or skill within the OLS is tiered across the three complexity levels. **It is important to move from left to right when reading the extensions.** To determine where instruction should begin, educators should start with the general standard and then progress down through the complexity levels until finding the optimum starting point. **It’s important to note that no one should categorize students according to an extension level.** Instead, instruction should build skills across the extensions to the highest level possible based on individual student strengths which may vary across standards. Ideally, when educators apply these extensions within each grade level, one should see instruction occurring at all ranges of complexity. When citing standards for lesson and/or assessment design, educators should include the full complexity range, including the general standard. Citing standards in this way acknowledges a range of entry points and a range of learning progressions.

# Blueprints

Test blueprints serve as a guide for test construction and provide an outline of the content and skills to be measured on the test. They contain information about individual tests, including the reporting category, the learning standards included for each reporting category, the item range for each reporting category and total test items for each test.

Grade 6 Math			
Reporting Categories	Learning Standards*	Item Range	Total Test Items
Ratios and Proportions	6.RP.1, 6.RP.2, 6.RP.3	10 - 13	40
Expressions and Equations	6.EE.1, 6.EE.2, 6.EE.3, 6.EE.4, 6.EE.5, 6.EE.6, 6.EE.7, 6.EE.8, 6.EE.9	12 - 18	
Geometry and Statistics	6.NS.8, 6.G.1, 6.G.2, 6.G.3, 6.G.4, 6.SP.1, 6.SP.2, 6.SP.3, 6.SP.4, 6.SP.5	8 - 10	
The Number System	6.NS.1, 6.NS.2, 6.NS.3, 6.NS.4, 6.NS.5, 6.NS.6, 6.NS.7	8 - 10	

\*All of the extensions for each learning standard are eligible for inclusion in the assessment.

## **Access Limitations**

Blind and visually impaired students can be administered the AASCD online. These students should be marked in TIDE with a test mode of online (O) and also flagged in TIDE or the TA Interface as Yes under the Access Limited – Blind setting. Indicating Yes under this setting will prevent these students from receiving items on the online test that are flagged as access limited for blind or visually impaired students.

Items are flagged as access limited for blind or visually impaired students if a visual element that cannot be described with words is critical to answering the question. Items should only depend on visual elements where that is necessary to assess the extended standard.

## **Early-Stopping Rule**

There may be instances where the district has not yet determined a student's mode of communication. For students that are unable to provide a discernible response to an item, the test administrator can select the "Mark as No Response" option from the context menu within the Student Interface for online and supplemental testers or in the Data Entry Interface (DEI) for paper testers.

The Student Interface and DEI have a built-in early stopping rule, which will automatically stop the test if the "Mark as No Response" option is submitted as the response for all four of the first four items for that test subject. Test administrators are still required to administer all other applicable subjects to a student even if the early stopping rule was enacted for another subject. If the student is able to provide a discernible response to at least one of the first four items for a test subject, the administrator should continue the assessment.

The first four items on every test mode are fixed and are low complexity items. Low complexity items are selected for the first four items to give students a chance to demonstrate that they can provide a response.

# MATH Grade 6: Alternate Assessment Item Specifications

<b>Content Area</b>	Math		
<b>Strand</b>	Ratio and Proportional Relationships		
<b>Reporting Category</b>	Ratios and Proportions		
<b>Gen-Ed Standard</b>	<p><b>6.RP.1</b> Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak.” “For every vote that candidate A received, candidate C received nearly three votes.”</p>		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<p><b>6.RP.1a</b> Given a visual model, represent two quantities as a ratio using whole numbers (e.g., In an image of 2 bananas and 3 oranges, what is the ratio of bananas to oranges?).</p>	<p><b>6.RP.1b</b> Given a visual model or manipulative, identify ratios involving whole numbers (e.g., In an image of 2 bananas and 3 oranges, what is the ratio of bananas to oranges?).</p>	<p><b>6.RP.1c</b> Given a manipulative, identify the units to be compared (e.g., Two bananas and three oranges are displayed. What two units are being compared?).</p>
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>Limited to ratios with whole numbers.</li> </ul>		
<b>Sample Items</b>			

*Item Models*

**High Complexity Level A**

Here are 3 bananas and 2 oranges.



What is the ratio of bananas to oranges?

**Moderate Complexity Level B**

The ratio of bananas to oranges is 2 to 3.

Which image shows the correct ratio of bananas to oranges?

**Low Complexity Level C**

Here are 3 bananas and 2 oranges.



What two units are being compared?

<b>Content Area</b>	Math		
<b>Strand</b>	Ratio and Proportional Relationships		
<b>Reporting Category</b>	Ratio and Proportions		
<b>Gen-Ed Standard</b>	<b>6.RP.2</b> Understand the concept of a unit rate $a/b$ associated with a ratio $a:b$ with $b \neq 0$ , and use rate language in the context of a ratio relationship. For example, “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar.” “We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger.”		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<b>6.RP.2a</b> Solve problems involving unit rates (e.g., If it took 2 hours to mow 6 lawns, how many lawns could be mowed in 8 hours at the same rate? At what rate were lawns being mowed?).	<b>6.RP.2b</b> Solve for a unit rate (e.g., It took James 2 hours to drive 100 miles. How fast did he drive per one hour?).	<b>6.RP.2c</b> Identify a unit rate in a word problem (e.g., James drives 65 miles per hour on the highway. How many miles does James drive in one hour?).
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Scales must include the unit of measure.</li> <li>• Proportions limited to solving for only one dimension.</li> <li>• Limited to rates with whole numbers.</li> </ul>		

<b>Sample Items</b>	
<i>Item Models</i>	
<b>High Complexity Level A</b>	It takes James 2 hours to mow 6 lawns. How long does it take James to mow 1 lawn?
<b>Moderate Complexity Level B</b>	A recipe has 50 walnuts for 2 cakes. How many walnuts are there per cake?



**Low Complexity Level C**

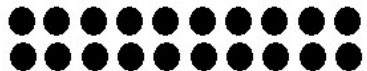
James drives 65 miles per hour on the highway. How many miles does James drive in 1 hour?

<b>Content Area</b>	Math		
<b>Strand</b>	Ratio and Proportional Relationships		
<b>Reporting Category</b>	Ratios and Proportions		
<b>Gen-Ed Standard</b>	<p><b>6.RP.3</b> Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.</p> <p><b>a.</b> Make tables of equivalent ratios relating quantities with whole number measurements; find missing values in the tables; and plot the pairs of values on the coordinate plane. Use tables to compare ratios.</p> <p><b>b.</b> Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?</p> <p><b>c.</b> Find a percent of a quantity as a rate per 100, e.g., 30% of a quantity means 30/100 times the quantity; solve problems involving finding the whole, given a part and the percent.</p> <p><b>d.</b> Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</p>		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<p><b>6.RP.3a1</b> Find a missing value in a ratio table. Students may use manipulatives to find the answer. AND</p> <p><b>6.RP.3a2</b> Find the percent of a number using a model.</p>	<p><b>6.RP.3b1</b> Build equal ratios with manipulatives and record information in a table. AND</p> <p><b>6.RP.3b2</b> Find the 10%, 20%, and 30% of a number using a model.</p>	<p><b>6.RP.3c1</b> Build equal ratios with manipulatives. AND</p> <p><b>6.RP.3c2</b> Identify or represent a percent as a rate per 100 when given a model of 100 units (e.g., Mike gave away 20 of his 100 marbles. What percent of the marbles did he give away?).</p>
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Limited to whole number percentages up to 100.</li> <li>• Limited to ratios and rates with whole numbers.</li> </ul>		

<b>Sample Items</b>	
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*Item Models*

<b>High Complexity Level A</b>	<p>Here is a ratio table. Each pair of numbers is a 1 to 3 ratio.</p> <table border="1" data-bbox="541 354 789 597"> <tr> <td>1</td> <td>3</td> </tr> <tr> <td>2</td> <td>6</td> </tr> <tr> <td>4</td> <td>12</td> </tr> <tr> <td>5</td> <td></td> </tr> </table> <p>What is the missing number?</p>	1	3	2	6	4	12	5	
1	3								
2	6								
4	12								
5									

<b>Moderate Complexity Level B</b>	<p>Here are 20 dots.</p>  <p>Which picture shows 10% of the 20 dots?</p>
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<b>Low Complexity Level C</b>	Mike gave away 20 of his 100 marbles. What percent of the marbles did he give away?
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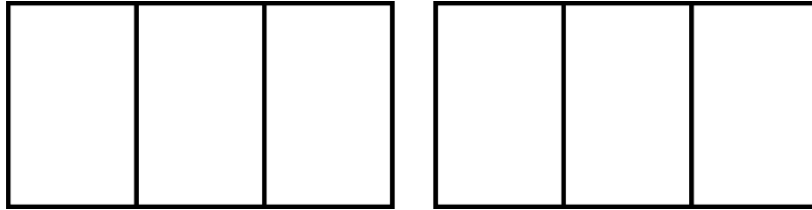
<b>Content Area</b>	Math		
<b>Strand</b>	The Number System		
<b>Reporting Category</b>	The Number System		
<b>Gen-Ed Standard</b>	<p><b>6.NS.1</b> Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. For example, create a story context for <math>(2/3) \div (3/4)</math> and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that <math>(2/3) \div (3/4) = 8/9</math> because <math>3/4</math> of <math>8/9</math> is <math>2/3</math>. (In general, <math>(a/b) \div (c/d) = ad/bc</math>.) How much chocolate will each person get if 3 people share <math>1/2</math> pound of chocolate equally? How many <math>3/4</math> cup servings are in <math>2/3</math> of a cup of yogurt? How wide is a rectangular strip of land with length <math>3/4</math> mi and area <math>1/2</math> square mi?</p>		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<p><b>6.NS.1a</b> Use visual models to show the relationship between the multiplication and division of fractions.</p>	<p><b>6.NS.1b</b> Recognize that dividing a whole number by a fraction is separating the whole into the required fractional parts and counting how many parts are in the total (e.g., Given one yard of fabric divided into pieces that are <math>2/3</math> of a yard, how many pieces will there be? Use a model of solve.).</p>	<p><b>6.NS.1c</b> Recognize a fraction as the division of the numerator by the denominator using unit fractions (e.g., Use a model to show that <math>1/4</math> means dividing a whole into 4 equal parts).</p>
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>Limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, and 12.</li> <li>Excludes use of language such as “reduce”, “simplify”, or “lowest terms”.</li> </ul>		

<b>Sample Items</b>	
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Item Models

High Complexity Level A

Here are two wholes divided into thirds.



Which diagram shows  $2 \div \frac{2}{3}$ ?

Moderate Complexity Level B

Here is wood that is 1 yard long and wood that is  $\frac{1}{3}$  yard long.

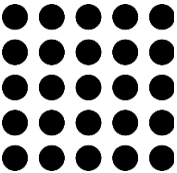



How many  $\frac{1}{3}$  yard long pieces are in 1 yard?

Low Complexity Level C

Which model is divided into fourths?

<b>Content Area</b>	Math		
<b>Strand</b>	The Number System		
<b>Reporting Category</b>	The Number System		
<b>Gen-Ed Standard</b>	<b>6.NS.2</b> Fluently divide multi-digit numbers using a standard algorithm.		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<b>6.NS.2a</b> Divide multi-digit whole numbers (up to 3-digit numbers) by 1- or 2-digit numbers in problems with and without remainders.	<b>6.NS.2b</b> Divide a 2-digit number up to 100 by a 1-digit number with and without remainders using models.	<b>6.NS.2c</b> Divide a 2-digit whole number up to 20 by a 1-digit whole number without remainder using models.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	• Limited to whole number divisors and dividends.		

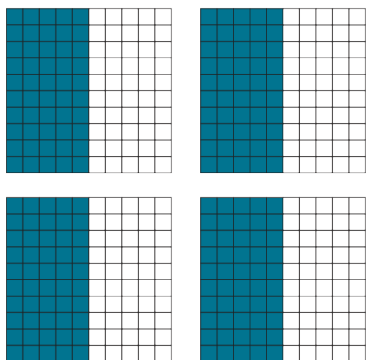
<b>Sample Items</b>	
<i>Item Models</i>	
<b>High Complexity Level A</b>	What is $150 \div 6$ ?
<b>Moderate Complexity Level B</b>	<p>Here are 25 dots.</p> 

	Which model shows $25 \div 5$ ?
<b>Low Complexity Level C</b>	Here are 15 dots.  Which model shows $15 \div 5$ ?

<b>Content Area</b>	Math		
<b>Strand</b>	The Number System		
<b>Reporting Category</b>	The Number System		
<b>Gen-Ed Standard</b>	<b>6.NS.3</b> Fluently add, subtract, multiply, and divide multi-digit decimals using a standard algorithm for each operation.		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<b>6.NS.3a</b> Add, subtract, and multiply multidigit decimals using place value models.	<b>6.NS.3b</b> Add and subtract multi-digit decimals using place value models.	<b>6.NS.3c</b> Add decimals to the tenths place using place value models.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Limited to decimals through hundredths.</li> <li>• Multi-digit decimals may go beyond one whole (e.g. 3.25).</li> </ul>		

<b>Sample Items</b>	
	<i>Item Models</i>
<b>High Complexity Level A</b>	Here is a model of $4 \times 0.50$ .

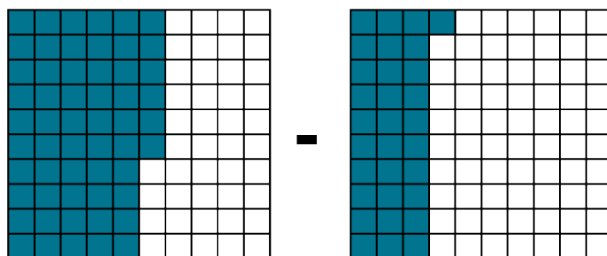




What is  $4 \times 0.50$ ?

**Moderate Complexity Level B**

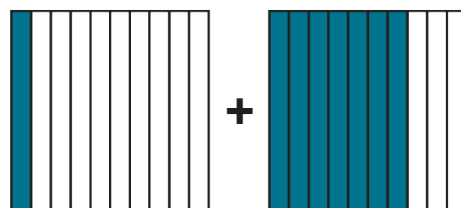
Here is a model of  $0.56 - 0.31$ .



What is the value of  $0.56 - 0.31$ ?

**Low Complexity Level C**

Here is a model of  $0.1 + 0.7$ .



What is  $0.1 + 0.7$ ?

<b>Content Area</b>	Math		
<b>Strand</b>	The Number System		
<b>Reporting Category</b>	The Number System		
<b>Gen-Ed Standard</b>	<b>6.NS.4</b> Find the greatest common factor of two whole numbers less than or equal to 100, and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express $36 + 8$ as $4(9 + 2)$ .		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<b>6.NS.4a1</b> Identify the greatest common factor of two whole numbers (up to 20). AND <b>6.NS.4a2</b> Use a factor and distributive property to rewrite the sum of two whole numbers (up to 50). Models may be used.	<b>6.NS.4b</b> Identify factors of whole numbers (up to 50).	<b>6.NS.4c</b> Identify factors of whole numbers (up to 20).
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	• Excludes the requirement to know, recognize, or use the formal name of the distributive property.		

<b>Sample Items</b>	
<i>Item Models</i>	
<b>High Complexity Level A</b>	What is the greatest common factor of 15 and 24?

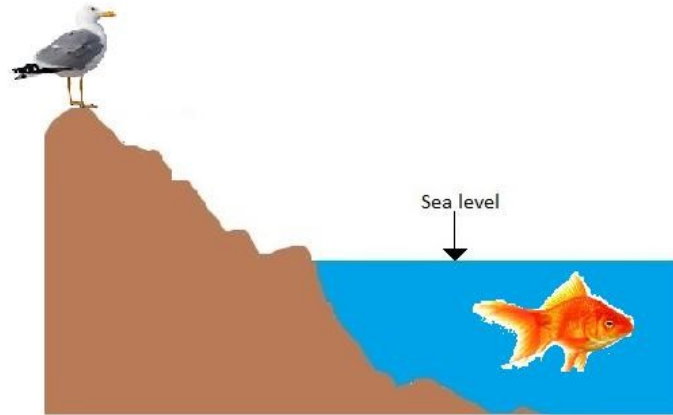
<b>Moderate Complexity Level B</b>	Which number is a factor of 42?
<b>Low Complexity Level C</b>	Which number is a factor of 18?

<b>Content Area</b>	Math		
<b>Strand</b>	The Number System		
<b>Reporting Category</b>	The Number System		
<b>Gen-Ed Standard</b>	<b>6.NS.5</b> Understand that positive and negative numbers are used together to describe quantities having opposite directions or values, e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge. Use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<b>6.NS.5a</b> Represent real-world problems involving integers (e.g., temperatures, elevations, and distances from a fixed point (map reading)).	<b>6.NS.5b</b> Identify the opposites of real-world examples of integers (e.g., opposite of gaining 40 yards is losing 40 yards).	<b>6.NS.5c</b> Identify or explain positive or negative regions in real-world models (e.g., sea elevations, yardage on football field, thermometer, etc.).
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Limited to integers from -100 to 100.</li> <li>• Excludes requirement to perform computation.</li> </ul>		

<b>Sample Items</b>	
<i>Item Models</i>	
<b>High Complexity Level A</b>	The temperature at noon is 80 °F. At 3pm the temperature is 90 °F. How much does the temperature change?
<b>Moderate Complexity Level B</b>	Which statement is the opposite of a balloon flying up 10 feet? (answer: the balloon fell 10 feet)

**Low Complexity Level C**

Here is a picture of the sea. Things above sea level have positive elevation, and things below sea level have negative elevation.



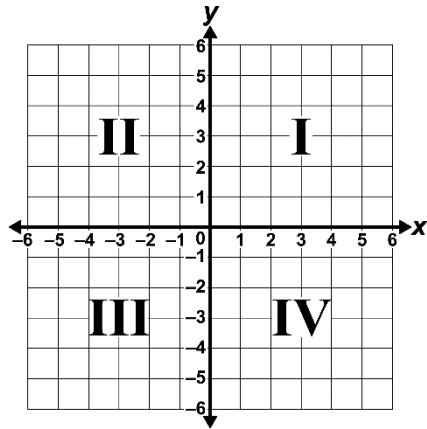
Which animal is in the part with a positive elevation?

<b>Content Area</b>	Math		
<b>Strand</b>	The Number System		
<b>Reporting Category</b>	The Number System		
<b>Gen-Ed Standard</b>	<p><b>6.NS.6</b> Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., <math>-(-3) = 3</math>, and that 0 is its own opposite. b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.</p>		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<p><b>6.NS.6a1</b> Place 3 rational numbers on a number line. AND <b>6.NS.6a2</b> Identify the quadrants in terms of their sign; (+,+), (+,-), (-,-),(-,+).</p>	<p><b>6.NS.6b1</b> Find an integer and its opposite on a number line. AND <b>6.NS.6b2</b> Explain the directionality of the x- and y-axis (horizontal vs. vertical).</p>	<p><b>6.NS.6c1</b> Locate a given positive or negative number on a number line. AND <b>6.NS.6c2</b> Identify the quadrants of a coordinate plane as Quadrant I, Quadrant II, Quadrant III, Quadrant IV.</p>
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Integers limited to numbers from -100 to 100.</li> <li>• Fractions limited to denominators of 2, 3, and 4.</li> <li>• Decimals limited to tenths</li> <li>• Limited to Integer ordered pair coordinates from -10 to 10</li> </ul>		

<b>Sample Items</b>	
<i>Item Models</i>	

**High Complexity Level A**

Here is a coordinate plane.



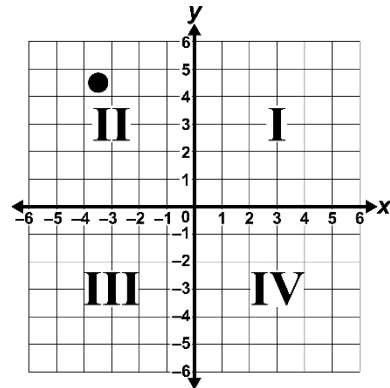
Which coordinate shows the sign for Quadrant 4? (answer: (+, -))

**Moderate Complexity Level B**

Which number line shows the opposite of 1? (Answer: number line with -1 marked)

**Low Complexity Level C**

Here is a coordinate plane with a point in the top left quadrant.



Which quadrant describes the point?



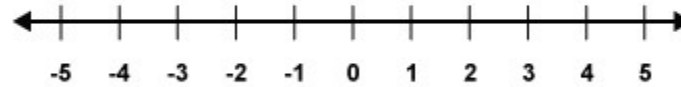


<b>Content Area</b>	Math		
<b>Strand</b>	The Number System		
<b>Reporting Category</b>	The Number System		
<b>Gen-Ed Standard</b>	<p><b>6.NS.7</b> Understand ordering and absolute value of rational numbers. a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret <math>-3 &gt; -7</math> as a statement that <math>-3</math> is located to the right of <math>-7</math> on a number line oriented from left to right. b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write <math>3^{\circ}\text{C} &gt; -7^{\circ}\text{C}</math> to express the fact that <math>-3^{\circ}\text{C}</math> is warmer than <math>-7^{\circ}\text{C}</math>. c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. For example, for an account balance of <math>-30</math> dollars, write <math> -30  = 30</math> to describe the size of the debt in dollars. d. Distinguish comparisons of absolute value from statements about order. For example, recognize that an account balance less than <math>-30</math> dollars represents a debt greater than 30 dollars.</p>		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<b>6.NS.7a</b> On a number line, order rational numbers from smallest to largest (limit to 3 rational numbers).	<b>6.NS.7b</b> On a number line, order integers from smallest to largest (limit to 5 whole numbers).	<b>6.NS.7c</b> On a number line, order whole numbers from smallest to largest (limit to 3 whole numbers).
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Integers limited to numbers from <math>-100</math> to <math>100</math>.</li> <li>• Fractions limited to denominators of 2, 3, and 4.</li> <li>• Decimals limited to tenths.</li> </ul>		

<b>Sample Items</b>	
<i>Item Models</i>	

**High Complexity Level A**

Here is a number line. It begins at -5 and ends at 5.



Which line shows the numbers -3.5, 0.5, and 2.5 ordered from smallest to largest?

**Moderate Complexity Level B**

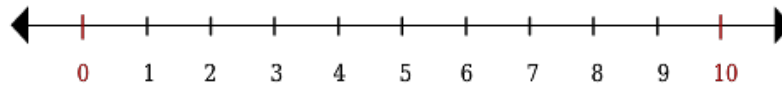
Here is a number line. It begins at -5 and ends at 5.



Which line shows the numbers -4, -1, 0, and 3 ordered from smallest to largest?

**Low Complexity Level C**

Here is a number line. The number line begins at 0 and ends at 10.



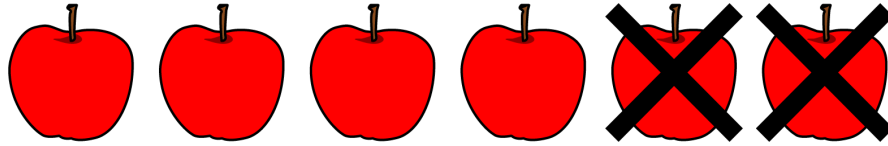
Which line shows the numbers 2, 5, and 7 ordered from smallest to largest?

<b>Content Area</b>	Math		
<b>Strand</b>	The Number System		
<b>Reporting Category</b>	Geometry and Statistics		
<b>Gen-Ed Standard</b>	<b>6.NS.8</b> Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<b>6.NS.8a</b> Plot whole number ordered pairs in a real-world example (e.g., mapping locations).	<b>6.NS.8b</b> Plot whole number ordered pairs.	<b>6.NS.8c</b> Identify the x- and y-axis, and plot an ordered pair in quadrant 1 of a coordinate plane.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>Limited to integer ordered pair coordinates from -10 to 10.</li> </ul>		

<b>Sample Items</b>	
<i>Item Models</i>	
<b>High Complexity Level A</b>	Which grid shows a house on the point (-3, 4)?
<b>Moderate Complexity Level B</b>	Which graph shows the point (3, -5)?
<b>Low Complexity Level C</b>	Which graph shows the point (4, 6)?

<b>Content Area</b>	Math		
<b>Strand</b>	Expressions and Equations		
<b>Reporting Category</b>	Expressions and Equations		
<b>Gen-Ed Standard</b>	<b>6.EE.1</b> Write and evaluate numerical expressions involving whole-number exponents.		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<b>6.EE.1a</b> Write and evaluate numerical expressions involving exponents of squares and cubes only (e.g., $5^2 + 4^3$ evaluate). No variables should be used.	<b>6.EE.1b</b> Write and/or evaluate expressions with integers (e.g., a model of 10 apples and giving 2 away). No variables or exponents should be used.	<b>6.EE.1c</b> Identify a model that is equivalent to a numerical expression.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>Limited to exponents with whole numbers from 0 to 10.</li> <li>Bases limited to digits 1 through 10.</li> </ul>		

<b>Sample Items</b>	
<i>Item Models</i>	
<b>High Complexity Level A</b>	Which number is equal to $5^2 + 2^3$ ?
<b>Moderate Complexity Level B</b>	Beth has 6 apples. She gives 2 apples to her teacher.



How many apples does Beth have now?

**Low Complexity Level C**

Which model shows  $3 + 2$ ?

<b>Content Area</b>	Math		
<b>Strand</b>	Expressions and Equations		
<b>Reporting Category</b>	Expressions and Equations		
<b>Gen-Ed Standard</b>	<p><b>6.EE.2</b> Write, read, and evaluate expressions in which letters stand for numbers. a. Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation “Subtract y from 5” as <math>5 - y</math>. b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression <math>2(8 + 7)</math> as a product of two factors; view <math>(8 + 7)</math> as both a single entity and a sum of two terms. c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, using the algebraic order of operations when there are no parentheses to specify a particular order. For example, use the formulas <math>V = s^3</math> and <math>A = 6s^2</math> to find the volume and surface area of a cube with sides of length <math>s = 1/2</math>.</p>		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<p><b>6.EE.2a</b> Given a context, student will write an algebraic expression for a context with 2 or 3 terms involving variables.</p>	<p><b>6.EE.2b</b> Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient) in simple expressions.</p>	<p><b>6.EE.2c</b> Evaluate an algebraic expression with 2 to 3 terms. (The value of the variables to be substituted into the expression should be limited to whole numbers.)</p>
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Multiplication may be represented by a raised dot, parentheses, or a coefficient and a variable.</li> <li>• Limited to expressions with whole numbers from 0 to 100.</li> <li>• Limited to expressions with up to three terms.</li> </ul>		

<b>Sample Items</b>	
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*Item Models*

<b>High Complexity Level A</b>	Mary buys $x$ number of sodas for \$3 each and $y$ number of water bottles for \$2 each. Which expression shows the total amount of money Mary spends on sodas and water bottles? (answer: $3x + 2y$ )
<b>Moderate Complexity Level B</b>	Here is an expression. $4x + 6$ Which is the variable?
<b>Low Complexity Level C</b>	Here is an expression. $a + 3$ What does the expression equal when $a$ is equal to 4?

<b>Content Area</b>	Math		
<b>Strand</b>	Expressions and Equations		
<b>Reporting Category</b>	Expressions and Equations		
<b>Gen-Ed Standard</b>	<p><b>6.EE.3</b> Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression <math>3(2 + x)</math> to produce the equivalent expression <math>6 + 3x</math>; apply the distributive property to the expression <math>24x + 18y</math> to produce the equivalent expression <math>6(4x + 3y)</math>; apply properties of operations to <math>y + y + y</math> to produce the equivalent expression <math>3y</math>.</p>		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<p><b>6.EE.3a</b> Identify equivalent algebraic expressions using distributive property (e.g., <math>2(x + 3)</math> is equivalent to <math>2x + 6</math>).</p>	<p><b>6.EE.3b</b> Identify equivalent algebraic expressions using commutative property (e.g., <math>x + 3</math> is equivalent to <math>3 + x</math>).</p>	<p><b>6.EE.3c</b> Identify equivalent numerical expressions using the commutative property (e.g., <math>2 + 3</math> is equivalent to <math>3 + 2</math>).</p>
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Multiplication may be represented by a raised dot, parentheses, or a coefficient and a variable.</li> <li>• Algebraic expressions limited to up to three terms.</li> <li>• Excludes the requirement to know, recognize, or use the formal name of the commutative or distributive property.</li> </ul>		

<b>Sample Items</b>	
<i>Item Models</i>	
<b>High Complexity Level A</b>	Which expression has the same value as $4(x + 2)$ ?
<b>Moderate Complexity Level B</b>	Which expression has the same value as $3 + x$ ?
<b>Low Complexity Level C</b>	Which expression is the same as $4 + 7$ ?



<b>Content Area</b>	Math		
<b>Strand</b>	Expressions and Equations		
<b>Reporting Category</b>	Expressions and Equations		
<b>Gen-Ed Standard</b>	<p><b>6.EE.4</b> Identify when two expressions are equivalent, i.e., when the two expressions name the same number regardless of which value is substituted into them. For example, the expressions <math>y + y + y</math> and <math>3y</math> are equivalent because they name the same number regardless of which number <math>y</math> stands for.</p>		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<p><b>6.EE.4a</b> Identify equivalent expressions (e.g., <math>2x + x</math> is equivalent to <math>3x</math>) with whole number coefficients.</p>	<p><b>6.EE.4b</b> Identify equivalent expressions (limit to variables with no coefficient) (e.g., <math>x + x</math> is equivalent to <math>2x</math>).</p>	<p><b>6.EE.4c</b> Identify equivalent expressions (limit to whole number expressions) (e.g., <math>2 + 3</math> is equivalent to <math>5</math>).</p>
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Multiplication may be represented by a raised dot, parentheses, or a coefficient and a variable.</li> <li>• Excludes expressions with exponents.</li> </ul>		

<b>Sample Items</b>	
<i>Item Models</i>	
<b>High Complexity Level A</b>	Which expression is the same as $2x + x$ ?
<b>Moderate Complexity Level B</b>	Which expression is the same as $x + x$ ?
<b>Low Complexity Level C</b>	What is $8 - 3$ equal to?

<b>Content Area</b>	Math		
<b>Strand</b>	Expressions and Equations		
<b>Reporting Category</b>	Expressions and Equations		
<b>Gen-Ed Standard</b>	<b>6.EE.5</b> Understand solving an equation or inequality as a process of answering a question: Which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<b>6.EE.5a</b> Given an inequality statement in the form of $x > c$ or $x < c$ determines if a given value makes the inequality true. (For $3 > b$ , if $b$ equals 5, is the inequality true?)	<b>6.EE.5b</b> Given a one-step equation and set of values for the variable, determine which value makes the equation true. (For $3x = 9$ , does $x = 2, 3, 4,$ or $6$ make the equation true?)	<b>6.EE.5c</b> Given a one-step equation and a value for the variable, determine if the value makes the equation true. (For $3x = 9$ , does $x = 4$ make the equation true?)
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Multiplication may be represented by a raised dot, parentheses, or a coefficient and a variable.</li> <li>• Limited to 1-step equations with whole numbers from 0 to 100.</li> <li>• Limited to inequality statements with numbers from -100 to 100.</li> <li>• Limited to one variable inequalities.</li> <li>• Excludes inequalities with <math>x \geq c</math> or <math>x \leq c</math>.</li> </ul>		
<b>Sample Items</b>			
<i>Item and Stimulus Models</i>			
<b>High Complexity Level A</b>	Here is an inequality. $3 > x$ Which value of $x$ makes the inequality true?		

<b>Moderate Complexity Level B</b>	Here is an equation. $3x = 9$ Which value of $x$ makes the equation true?
<b>Low Complexity Level C</b>	Here is an equation. $3x = 9$ Does $x = 4$ make this number sentence true?

<b>Content Area</b>	Math		
<b>Strand</b>	Expressions and Equations		
<b>Reporting Category</b>	Expressions and Equations		
<b>Gen-Ed Standard</b>	<b>6.EE.6</b> Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<b>6.EE.6a</b> Represent the missing information with a variable in a real-world problem.	<b>6.EE.6b</b> Identify the missing information in a real-world problem.	<b>6.EE.6c</b> Identify a variable in an equation.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Multiplication may be represented by a raised dot, parentheses, or a coefficient and a variable.</li> <li>• Limited to integers from 0 to 100.</li> </ul>		

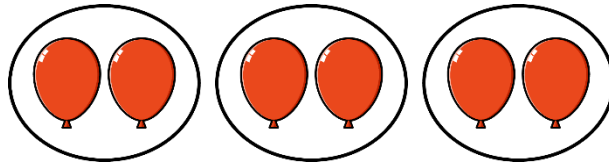
<b>Sample Items</b>	
<i>Item Models</i>	
<b>High Complexity Level A</b>	<p>Angela makes \$20 an hour. She works <math>h</math> hours.</p> <p>How much money does she have after working <math>h</math> hours?</p>
<b>Moderate Complexity Level B</b>	There are 14 seagulls at the beach. Some are in the water and 8 are on the sand.

	How many seagulls are in the water?
<b>Low Complexity Level C</b>	Here is an equation. $2x = 6$ Which part of the equation is a variable?

<b>Content Area</b>	Math		
<b>Strand</b>	Expressions and Equations		
<b>Reporting Category</b>	Expressions and Equations		
<b>Gen-Ed Standard</b>	<b>6.EE.7</b> Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which $p$ , $q$ , and $x$ are all non-negative rational numbers.		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<b>6.EE.7a</b> Using real-world contexts, write and solve one-step equations using whole numbers. Models may be used (e.g., Jim has several balloons. He gives 2 balloons to his brother and now has 5 balloons left. How many balloons did Jim have to begin with?).	<b>6.EE.7b</b> Solve a one-step equation using one of the 4 operations with whole numbers using models.	<b>6.EE.7c</b> Solve a one-step equation using addition and subtraction with whole numbers using models.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Coefficients and constants are limited to integers from 0 to 100.</li> <li>• Multiplication may be represented by a raised dot, parentheses, or a coefficient and a variable.</li> <li>• Excludes division with remainders in a context.</li> </ul>		

<b>Sample Items</b>	
<i>Item Models</i>	
<b>High Complexity Level A</b>	Mona has 15 pens. She gives 3 pens to her friends. How many pens does Mona have left?

**Moderate Complexity Level B**



Sam wants to give 2 balloons to each of his friends. His mom gives him 6 balloons.


How many friends can Sam give balloons to?

**Low Complexity Level C**




Beth has 5 balloons. She gives each of her sisters a balloon. She has 2 balloons left.

How many sisters does Beth give balloons to?

<b>Content Area</b>	Math		
<b>Strand</b>	Expressions and Equations		
<b>Reporting Category</b>	Expressions and Equations		
<b>Gen-Ed Standard</b>	<b>6.EE.8</b> Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<b>6.EE.8</b> Identify an inequality that is represented on a number line using a variable. (e.g.,  $x < 8$ )	<b>6.EE.8</b> Identify an inequality that represents a real-world or mathematical problem. (e.g., Jane is 23 years old. Sally is 19 years old. Which inequality correctly compares Jane and Sally's ages? $23 > 19$ ).	<b>6.EE.8</b> Identify an inequality that compares two whole numbers using the $>$ , $<$ , $=$ .
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>Limited to integers from -100 to 100.</li> <li>Excludes inequalities with <math>\geq</math> and <math>\leq</math>.</li> </ul>		

<b>Sample Items</b>	
<i>Item Models</i>	



<b>High Complexity Level A</b>	<p>Here is a number line.</p>  <p>Which inequality is shown on the number line?</p>
<b>Moderate Complexity Level B</b>	<p>Jane is 23 years old. Sally is 19 years old.</p> <p>Which statement correctly compares Jane and Sally's ages?</p>
<b>Low Complexity Level C</b>	<p>Which statement correctly compares 5 and 3?</p>

<b>Content Area</b>	Math		
<b>Strand</b>	Expressions and Equations		
<b>Reporting Category</b>	Expressions and Equations		
<b>Gen-Ed Standard</b>	<p><b>6.EE.9</b> Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation <math>d = 65t</math> to represent the relationship between distance and time.</p>		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<p><b>6.EE.9a</b> Complete a table given a one-step equation and graph the coordinates.</p>	<p><b>6.EE.9b</b> Find the outputs (dependent variable) given an equation and the inputs in table form.</p>	<p><b>6.EE.9c</b> Identify the input and output in a table.</p>
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Multiplication may be represented by a raised dot, parentheses, or a coefficient and a variable.</li> <li>• Limited to 1-step equations.</li> <li>• Limited to whole numbers from 0 to 100.</li> <li>• Limited to whole number ordered pair coordinates.</li> <li>• Excludes division with remainders.</li> <li>• Excluded operations with negative integers.</li> </ul>		

<b>Sample Items</b>	
<i>Item Models</i>	

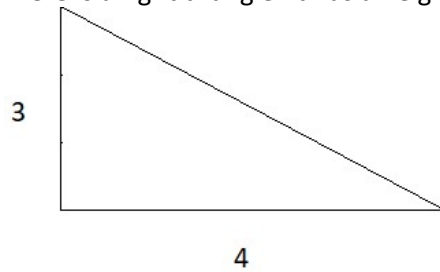
<p><b>High Complexity Level A</b></p>	<p>Here is an equation and a table with some <math>x</math> and <math>y</math> values.</p> $y = x - 3$ <table border="1" data-bbox="541 170 768 402"> <thead> <tr> <th><math>x</math></th> <th><math>y</math></th> </tr> </thead> <tbody> <tr> <td>4</td> <td>1</td> </tr> <tr> <td>?</td> <td>5</td> </tr> <tr> <td>10</td> <td>?</td> </tr> </tbody> </table> <p>Which completed table shows the correct values for the equation?</p>	$x$	$y$	4	1	?	5	10	?
$x$	$y$								
4	1								
?	5								
10	?								
<p><b>Moderate Complexity Level B</b></p>	<p>Here is a table that shows the <math>x</math> and <math>y</math> values for the number sentence <math>y = x + 3</math>.</p> <table border="1" data-bbox="541 544 915 721"> <thead> <tr> <th><math>x</math></th> <th><math>y</math></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>3</td> </tr> <tr> <td>1</td> <td>4</td> </tr> <tr> <td>3</td> <td>?</td> </tr> </tbody> </table> <p>What is the missing <math>y</math> value in the table?</p>	$x$	$y$	0	3	1	4	3	?
$x$	$y$								
0	3								
1	4								
3	?								
<p><b>Low Complexity Level C</b></p>	<p>Here is a table.</p> <table border="1" data-bbox="541 829 814 1008"> <thead> <tr> <th><math>x</math></th> <th><math>y</math></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>3</td> </tr> <tr> <td>1</td> <td>4</td> </tr> <tr> <td>2</td> <td>5</td> </tr> </tbody> </table> <p>Which values in the table are outputs?</p>	$x$	$y$	0	3	1	4	2	5
$x$	$y$								
0	3								
1	4								
2	5								

<b>Content Area</b>	Math		
<b>Strand</b>	Geometry		
<b>Reporting Category</b>	Geometry and Statistics		
<b>Gen-Ed Standard</b>	<b>6.G.1</b> Through composition into rectangles or decomposition into triangles, find the area of right triangles, other triangles, special quadrilaterals, and polygons; apply these techniques in the context of solving real-world and mathematical problems.		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<b>6.G.1a</b> Demonstrate that the area of a right triangle is $\frac{1}{2} \times \text{length} \times \text{height}$ (e.g., Two same right triangles combined make a rectangle, and the area of a triangle is half the area of the rectangle it can be composed into). Demonstrate these techniques in real-world and mathematics problems.	<b>6.G.1b</b> Demonstrate that the area of all rectangles is $\text{length} \times \text{width}$ (e.g., Multiply side lengths to find the area of rectangles with whole-number side lengths). Demonstrate these techniques in real-world and mathematics problems.	<b>6.G.1c</b> Find the area of rectangles with whole-number side lengths by counting unit squares. Demonstrate these techniques in real-world and mathematics problems.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Measurement lengths limited to whole number units from 0 to 100.</li> <li>• Excludes division with remainders.</li> <li>• Excludes use of exponential notation.</li> </ul>		

<b>Sample Items</b>	
<i>Item Models</i>	

**High Complexity Level A**

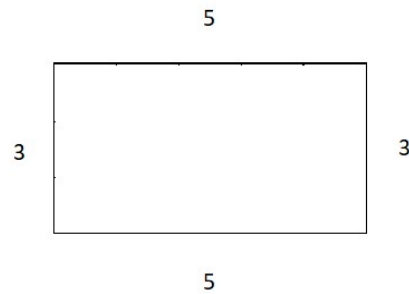
Here is a right triangle. It has a height of 3 and a base of 4.



What is the area of the triangle?

**Moderate Complexity Level B**

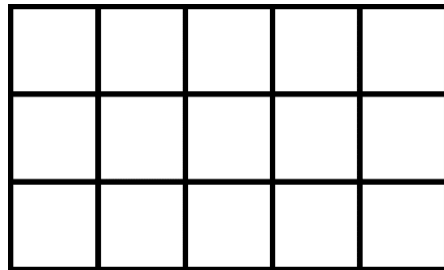
Here is a rectangle.



What is the area of the rectangle?

**Low Complexity Level C**

Here is a rectangle divided into unit squares.



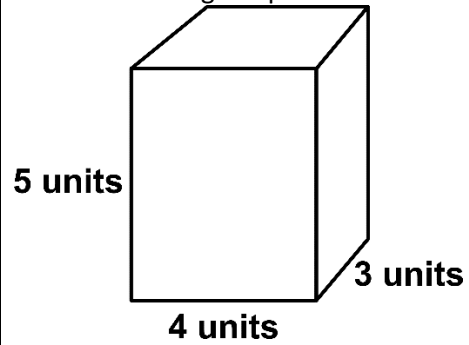
What is the area of the rectangle?

<b>Content Area</b>	Math		
<b>Strand</b>	Geometry		
<b>Reporting Category</b>	Geometry and Statistics		
<b>Gen-Ed Standard</b>	<p><b>6.G.2</b> Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas <math>V = \ell \cdot w \cdot h</math> and <math>V = B \cdot h</math> to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.</p>		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<p><b>6.G.2a</b> Recognize that the volume of a right rectangular prism can be found by multiplying the height by the area of the base (using whole numbers) (e.g., show that <math>V = \ell \cdot w \cdot h</math> and <math>V = B \cdot h</math>). Limited to whole number edge lengths.</p>	<p><b>6.G.2b</b> Demonstrate that unit cubes can be used to build figures that have volume, and determine the volume of a figure. Limit to whole number edge lengths.</p>	<p><b>6.G.2c</b> Find the volume of a right rectangular prism (e.g., count the number of unit cubes it takes to fill a rectangular prism) (up to 25 cubes). Limit to whole number edge lengths.</p>
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Limited to right rectangular prisms.</li> <li>• Measurement lengths limited to whole number units from 0 to 100.</li> <li>• Excludes use of exponential notation.</li> </ul>		

<b>Sample Items</b>	
<i>Item Models</i>	

High Complexity Level A

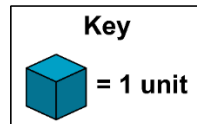
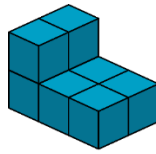
Here is a rectangular prism. It has a length of 4 units, a width of 3 units, and a height of 5 units.



What is the volume of the rectangular prism?

Moderate Complexity Level B

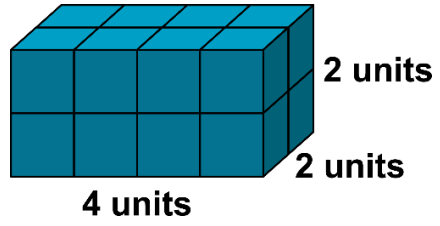
Here is a figure formed by unit cubes.



What is the volume?

Low Complexity Level C

Here is a rectangular prism.



What is the volume of the rectangular prism?

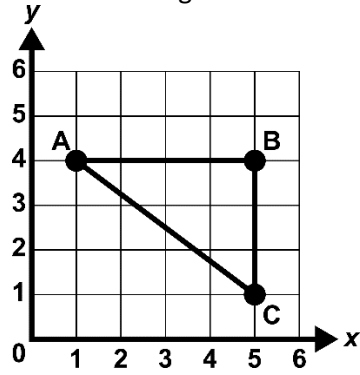


<b>Content Area</b>	Math		
<b>Strand</b>	Geometry		
<b>Reporting Category</b>	Geometry and Statistics		
<b>Gen-Ed Standard</b>	<b>6.G.3</b> Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<b>6.G.3a</b> Find the length(s) of the side(s) of a polygon drawn in quadrant 1 of the coordinate plane.	<b>6.G.3b</b> Plot points of a polygon in quadrant 1 of the coordinate plane and identify the name of the shape.	<b>6.G.3c</b> Given a graph of plotted vertices, connect the vertices forming a polygon and identify the name of the shape that is created.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Limited to whole number ordered pair coordinates from 0 to 10.</li> <li>• Unknown side length measures limited to horizontal or vertical measures.</li> </ul>		

<b>Sample Items</b>	
<i>Item Models</i>	

**High Complexity Level A**

Here is a triangle in the coordinate plane.



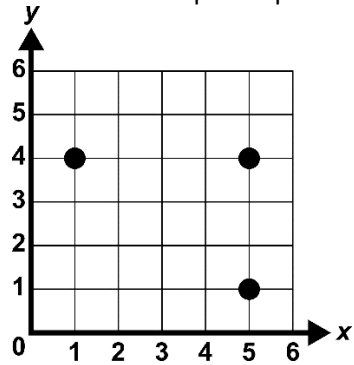
What is the length of the side that connects point B to point C?

**Moderate Complexity Level B**

What shape do the points (1, 4), (5, 4), (5, 1) make if they are connected?

**Low Complexity Level C**

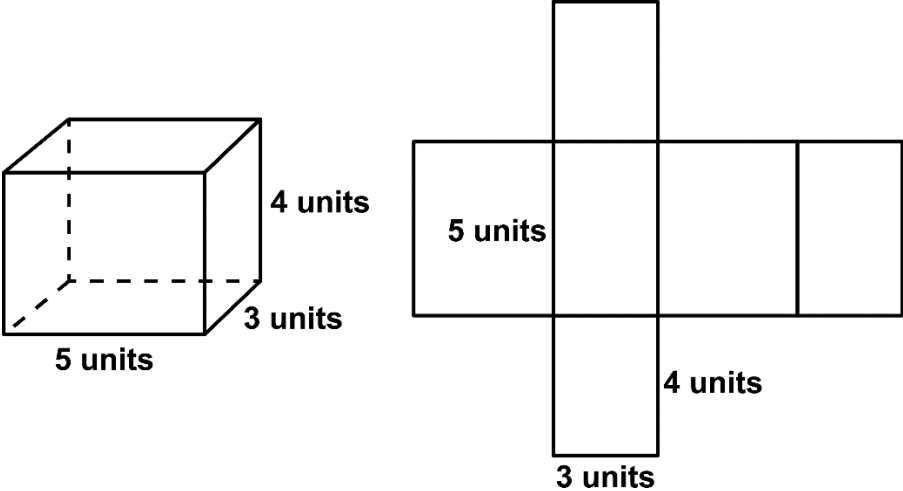
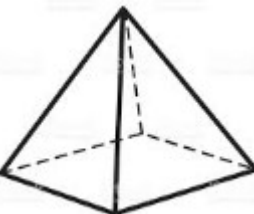
Here are three points plotted on the coordinate plane.



What shape is made if the three points are connected to each other?

<b>Content Area</b>	Math		
<b>Strand</b>	Geometry		
<b>Reporting Category</b>	Geometry and Statistics		
<b>Gen-Ed Standard</b>	<b>6.G.4</b> Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<b>6.G.4a</b> Given a net and a three-dimensional figure, find the surface area of prisms, pyramids, and cubes.	<b>6.G.4b</b> Identify a net given three-dimensional figures using nets using models.	<b>6.G.4c</b> Identify cubes, rectangular prisms (e.g., cubes, rubber eraser, pyramids).
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Three-dimensional shapes are limited to prisms, pyramids, and cubes.</li> </ul>		

<b>Sample Items</b>	
<i>Item Models</i>	

<p><b>High Complexity Level A</b></p>	<p>Here is a rectangular prism and its net.</p>  <p>What is the surface area of the rectangular prism?</p>
<p><b>Moderate Complexity Level B</b></p>	<p>Here is a square pyramid.</p>  <p>Which is the net of the square pyramid?</p>
<p><b>Low Complexity Level C</b></p>	<p>Which is a cube?</p>

<b>Content Area</b>	Math		
<b>Strand</b>	Statistics and Probability		
<b>Reporting Category</b>	Geometry and Statistics		
<b>Gen-Ed Standard</b>	<p><b>6.SP.1</b> Develop statistical reasoning by using the GAISE model:</p> <p><b>a.</b> Formulate Questions: Recognize and formulate a statistical question as one that anticipates variability and can be answered with quantitative data. For example, “How old am I?” is not a statistical question, but “How old are the students in my school?” is a statistical question because of the variability in students’ ages. (GAISE Model, step 1)</p> <p><b>b.</b> Collect Data: Design and use a plan to collect appropriate data to answer a statistical question. (GAISE Model, step 2)</p> <p><b>c.</b> Analyze Data: Select appropriate graphical methods and numerical measures to analyze data by displaying variability within a group, comparing individual to individual, and comparing individual to group. (GAISE Model, step 3)</p> <p><b>d.</b> Interpret Results: Draw logical conclusions from the data based on the original question. (GAISE Model, step 4)</p>		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<b>6.SP.1a</b> Recognize a statistical question.	<b>6.SP.1b</b> Identify when we might pose a statistical question.	<b>6.SP.1c</b> Ask questions about a statistical situation.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Contexts should be reasonably accessible to students.</li> </ul>		

<b>Sample Items</b>	
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*Item Models*

<b>High Complexity Level A</b>	Which is a statistical question?
<b>Moderate Complexity Level B</b>	Lauren has 3 ideas for a school project. <ol style="list-style-type: none"><li>1. Find out how many pencils are in her desk.</li><li>2. Find out what the most popular color in her class is.</li><li>3. Find out how many boys are in her class.</li></ol> Which project would Lauren need to use a statistical question for?
<b>Low Complexity Level C</b>	Esme is in class. She asks each student what vegetable they like best. What are likely answers to her question? (boy, carrot)

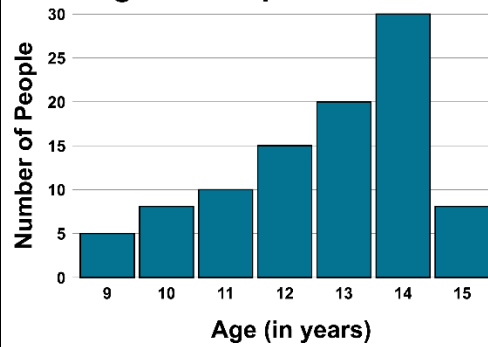
<b>Content Area</b>	Math		
<b>Strand</b>	Statistics and Probability		
<b>Reporting Category</b>	Geometry and Statistics		
<b>Gen-Ed Standard</b>	<b>6.SP.2</b> Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<b>6.SP.2a</b> Given a data display, answer a statistical question about spread.	<b>6.SP.2b</b> Given a data display, answer a statistical question about center.	<b>6.SP.2c</b> Given a data display, answer a statistical question about shape.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Items contain titled and labeled displays.</li> <li>• Data limited to whole numbers.</li> <li>• Data displays limited to histograms, dot plots (line plots), and bar graphs</li> </ul>		

<b>Sample Items</b>	
<i>Item Models</i>	

High Complexity Level A

Here is a graph that shows the ages of people at a concert.

**Age of People at Concert**

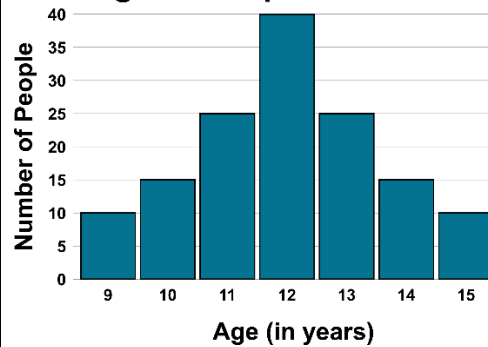


What is the range of this data set?

Moderate Complexity Level B

Here is a graph that shows the ages of people at a concert.

**Age of People at Concert**

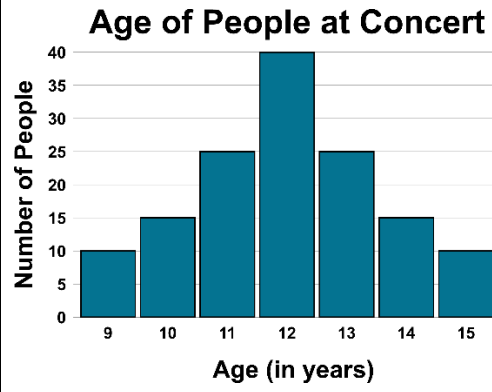


What is the median age of this data set?



Low Complexity Level C

Here is a graph that shows the ages of people at a concert.



What is the shape of the data? (Answer: symmetrical)

<b>Content Area</b>	Math		
<b>Strand</b>	Statistics and Probability		
<b>Reporting Category</b>	Geometry and Statistics		
<b>Gen-Ed Standard</b>	<b>6.SP.3</b> Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<b>6.SP.3a1</b> Find the mean using models according to the idea of “fair share.” Limit to 7 data points. AND <b>6.SP.3a2</b> Find the median of a data point. Limit to 7 data points.	<b>6.SP.3b</b> Find the median of a data set with an odd number of data points. Limit to 7 data points.	<b>6.SP.3c</b> Identify the mode for a set of data.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Data limited to whole numbers.</li> <li>• Models use for “fair share” limited to dot plots (line plots) and box plots.</li> </ul>		

<b>Sample Items</b>	
<i>Item Models</i>	
<b>High Complexity Level A</b>	Five friends decide to bring cookies to lunch. One friend brought 5 cookies, two of them both brought 2 cookies, and two others both brought 3 cookies. What is the average number of cookies that the friends brought to lunch?
<b>Moderate Complexity Level B</b>	Here is a data set. 3, 3, 5, 6, 8 What is the median of the data set?

**Low Complexity Level C**

Here are the shoe sizes of the students in Chad's class.

4, 7, 7, 7, 8

What shoe size do most of the students in Chad's class have?

<b>Content Area</b>	Math		
<b>Strand</b>	Statistics and Probability		
<b>Reporting Category</b>	Geometry and Statistics		
<b>Gen-Ed Standard</b>	<b>6.SP.4</b> Display numerical data in plots on a number line, including dot plots (line plots), histograms, and box plots. (GAISE Model, step 3)		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<b>6.SP.4a</b> Given pre-made axes, construct and interpret a histogram from a given or collected data set.	<b>6.SP.4b</b> Given pre-made axes, construct and analyze a line plot from a given or collected data set.	<b>6.SP.4c</b> Given pre-made axes, construct and analyze a bar graph from a given or collected data set.
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>Data limited to whole numbers.</li> </ul>		

<b>Sample Items</b>	
<i>Item Models</i>	

**High Complexity Level A**

Here is a table that shows the number of assignments a student must do in a week.

Day	Number of Assignments
Monday	10
Tuesday	8
Wednesday	2

Which graph shows the data in the table? (Options will be histograms.)

**Moderate Complexity Level B**

Here is a table that shows the number of assignments a student must do in a week.

Day	Number of Assignments Left
Monday	10
Tuesday	8
Wednesday	2

Which graph shows the line plot for the table?

**Low Complexity Level C**

Here is a table that shows the types of pets the students in Mrs. Lawson's class have.

Pet	Number of Students
Dog	10
Cat	8
Fish	5

Which option is the bar graph for the table?

<b>Content Area</b>	Math		
<b>Strand</b>	Statistics and Probability		
<b>Reporting Category</b>	Geometry and Statistics		
<b>Gen-Ed Standard</b>	<p><b>6.SP.5</b> Summarize numerical data sets in relation to their context. a. Report the number of observations. b. Describe the nature of the attribute under investigation, including how it was measured and its units of measurement. c. Find the quantitative measures of center (median and/or mean) for a numerical data set and recognize that this value summarizes the data set with a single number. Interpret mean as an equal or fair share. Find measures of variability (range and interquartile range), as well as informally describe the shape and the presence of clusters, gaps, peaks, and outliers in a distribution. d. Choose the measures of center and variability, based on the shape of the data distribution and the context in which the data were gathered.</p>		
<b>Extensions</b>	<b>Extension A: High Complexity</b>	<b>Extension B: Moderate Complexity</b>	<b>Extension C: Low Complexity</b>
	<p><b>6.SP.5a</b> Interpret information from a given or collected data set (e.g., Given a tally chart showing the number of pockets on students' clothes in a class. Find the average number of pockets and the range of the data).</p>	<p><b>6.SP.5b</b> Interpret information from a given or collected data set (e.g., Given a tally chart showing the number of pets. Find the average number of pets).</p>	<p><b>6.SP.5c</b> Interpret information from a given or collected data set (e.g., given a tally chart showing the favorite colors of the students in Joe's math class, determine which color was the most/least favorite).</p>
<i>The Standard, Extensions and Text Characteristics support the following task demands:</i>			
<b>Content Limits</b>	<ul style="list-style-type: none"> <li>• Items contain titled and labeled displays.</li> <li>• Data limited to whole numbers.</li> </ul>		

<b>Sample Items</b>	
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Item Models

High Complexity Level A

Here is a tally chart showing the number of pets students have.

Number of Pets	Number of Students
0	
1	
2	

What is the average number of pets per student?

Moderate Complexity Level B

Here is a tally chart showing the number of pets that students have.

Number of Pets	Number of Students
0	
1	
2	

What is the median number of pets?

**Low Complexity Level C**

Here is a chart that shows students' favorite colors.

Color	Number of Students
Blue	2
Green	5
Purple	7

Which color is most popular?