

Standardized Assessment Tasks for  
STAAR Alternate

# Grade 6 Mathematics

## **Definitions/Examples for STAAR Reporting Category 1 (6.1) Essence Statement A**

The following definitions clarify terms used in the grade 6 mathematics assessment tasks to ensure that the content of the tasks is understood. When appropriate, examples and nonexamples have been provided for further clarification. These are just examples and do not represent all the appropriate ways to test the skills in the STAAR Alternate assessment tasks.

Level 1: page 5

**manipulatives** – objects used during the assessment of mathematical concepts typically addressing quantity, operations, or patterns. Manipulatives are used for hands-on tasks and should be objects for which students in middle school have access and interest.

- For this Level 1 task, everyday items such as CD cases, art supplies, and pencils are examples of grade-appropriate manipulatives.
- Items like miniature bear counters and plastic dinosaurs are NOT grade-appropriate manipulatives for this task at middle school.

STAAR Reporting Category 1 – Numbers, Operations, and Quantitative Reasoning: The student will demonstrate an understanding of numbers, operations, and quantitative reasoning.	
TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations	Essence of TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations
<p><b>(6.1) Number, operation, and quantitative reasoning.</b> The student represents and uses rational numbers in a variety of equivalent forms. The student is expected to</p> <ul style="list-style-type: none"> <li>(A) compare and order non-negative rational numbers; Supporting Standard</li> <li>(B) generate equivalent forms of rational numbers including whole numbers, fractions, and decimals; Readiness Standard</li> <li>(C) use integers to represent real-life situations; Supporting Standard</li> <li>(D) write prime factorizations using exponents; Supporting Standard</li> <li>(E) identify factors of a positive integer, common factors, and the greatest common factor of a set of positive integers; Supporting Standard</li> <li>(F) identify multiples of a positive integer and common multiples and the least common multiple of a set of positive integers. Supporting Standard</li> </ul>	<p><b>Essence Statement A:</b> Uses numbers in a variety of equivalent forms.</p>

### **Level 3**

**Prerequisite skill:** use concrete models of hundreds, tens, and ones to represent a given whole number (up to 999) in various ways

The student will be presented a collection of no more than nine dimes to be used as a bank for trading. The student will also be presented a collection of pennies totaling a number greater than 10 but not a multiple of 10. The student will determine how many pennies in the collection can be traded for dimes. The student will determine how many pennies are left after trading for dimes. The student will record the two-digit number that is represented by the combined value of the dimes and leftover pennies after trading.

Predetermined Criteria

1. The student will determine how many pennies in the collection can be traded for dimes.
2. The student will determine how many pennies are left after trading for dimes.
3. The student will record the two-digit number that is represented by the combined value of the dimes and leftover pennies after trading.

Process skill: identify mathematics in everyday situations

Transition

### **Level 2**

**Prerequisite skill:** create sets of tens and ones using concrete objects to describe, compare, and order whole numbers

The student will be presented a two-digit number. The student will be given a collection of dimes greater than the number in the tens place and pennies greater than the number in the ones place. The student will identify the number of dimes that corresponds to the number in the tens place. The student will identify the number of pennies that corresponds to the number in the ones place. The student will match the number of dimes and pennies to the tens and ones place in the two-digit number. The student will count the value of each coin to reach the total value of the coins.

Predetermined Criteria

1. The student will identify the number of dimes that corresponds to the number in the tens place and the number of pennies that corresponds to the number in the ones place.
2. The student will match the number of dimes and pennies to the tens and ones place in the two-digit number.
3. The student will count the value of each coin to reach the total value of the coins.

Process skill: identify mathematics in everyday situations

Transition

## Level 1

**Prerequisite skill:** use sets of concrete objects to represent quantities given in verbal or written form (through 20)

The student will be presented a written one-digit number. The student will be presented the same number of manipulatives as the number. The student will explore the manipulatives. The student will participate in placing the manipulatives on top of the number. The student will acknowledge the total number of objects on the number.

Predetermined Criteria

1. The student will explore the manipulatives.
2. The student will participate in placing the manipulatives on top of the number.
3. The student will acknowledge the total number of objects on the number.



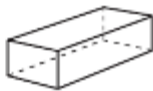



## Definitions/Examples for STAAR Reporting Category 3 (6.6) Essence Statement B

The following definitions clarify terms used in the grade 6 mathematics assessment tasks to ensure that the content of the tasks is understood. When appropriate, examples and nonexamples have been provided for further clarification. These are just examples and do not represent all the appropriate ways to test the skills in the STAAR Alternate assessment tasks.

Levels 3, 2, and 1: pages 8 and 9

**three-dimensional figures** – geometric figures that have length, width, and height.

- See the tables below for examples of three-dimensional figures appropriate for the tasks:

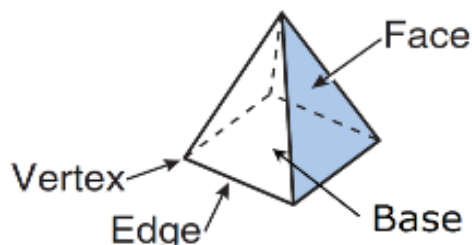
Figure	Example	Figure	Example
Triangular prism		Cylinder	
Rectangular prism		Cone	
Cube		Sphere	

**two-dimensional figures** – flat geometric figures that have length and width. Polygons (closed figures with straight sides) such as triangles, rectangles, and squares are two-dimensional figures. Circles are also two-dimensional figures.

Levels 3 and 2: pages 8 and 9

**geometric attribute** – a characteristic of a geometric figure.

- Attributes of three-dimensional figures can include number of faces (a flat surface of a three-dimensional figure), shapes of faces, shape of base (a flat surface that makes up what is considered to be the bottom of the figure), number of edges (a line segment where two faces meet), and number of vertices (the point where three or more edges meet).
- See example below:



- Number of sides and number of vertices are attributes of a two-dimensional figure. A vertex is a point where two sides meet on a polygon.
- Color, size, texture, height, and the name of a figure are NOT geometric attributes.

<b>STAAR Reporting Category 3 – Geometry and Spatial Reasoning: The student will demonstrate an understanding of geometry and spatial reasoning.</b>	
<b>TEKS Knowledge &amp; Skills Statement / STAAR-Tested Student Expectations</b>	<b>Essence of TEKS Knowledge &amp; Skills Statement / STAAR-Tested Student Expectations</b>
<p><b>(6.6) Geometry and spatial reasoning.</b> The student uses geometric vocabulary to describe angles, polygons, and circles. The student is expected to</p> <ul style="list-style-type: none"> <li>(A) use angle measurements to classify angles as acute, obtuse, or right; Supporting Standard</li> <li>(B) identify relationships involving angles in triangles and quadrilaterals; Supporting Standard</li> <li>(C) describe the relationship between radius, diameter, and circumference of a circle. Readiness Standard</li> </ul>	<p><b>Essence Statement B:</b> Recognizes relationships involving geometric figures.</p>

**Level 3**

**Prerequisite skill:** identify, classify, and describe two- and three-dimensional geometric figures by their attributes

The student will be presented two-dimensional and three-dimensional geometric figures. The student will classify the figures according to attributes. The student will justify the way the groups were classified. The teacher will select one figure from each of two groups to present to the student. The student will determine a common attribute of the two figures.

Predetermined Criteria

1. The student will classify the figures according to attributes.
2. The student will justify the way the groups were classified.
3. The student will determine a common attribute of the two figures.

Process skill: justify why an answer is reasonable and explain the solution process



## Level 2

**Prerequisite skill:** describe attributes (the number of vertices, faces, edges, sides) of two- and three-dimensional geometric figures such as circles, polygons, spheres, cones, cylinders, prisms, and pyramids, etc.

The student will be presented a three-dimensional geometric figure with faces. The student will identify one face on the geometric figure. The student will be presented a collection of two-dimensional figures. The student will identify a two-dimensional figure that is the same shape as a face on the three-dimensional geometric figure. The student will count the number of faces on the three-dimensional geometric figure.

Predetermined Criteria

1. The student will identify one face on the geometric figure.
2. The student will identify a two-dimensional figure that is the same shape as a face on the three-dimensional geometric figure.
3. The student will count the number of faces on the three-dimensional geometric figure.

## Level 1

**Prerequisite skill:** sort a variety of objects including two- and three-dimensional geometric figures according to their attributes and describe how the objects are sorted

The student will be presented an empty box. The lid on the box will have two openings. One opening will be in the shape of a square. The second opening will be in the shape of a circle. The student will explore the shape of the openings in the box. The student will be presented cylinders and cubes that when placed in the right opening will fall into the box. The student will participate in separating the cylinders from the cubes. The student will participate in placing the cylinders in the round opening and the cubes in the square opening.

Predetermined Criteria

1. The student will explore the shape of the openings in the box.
2. The student will participate in separating the cylinders from the cubes.
3. The student will participate in placing the cylinders in the round opening and the cubes in the square opening.

## **Definitions/Examples for STAAR Reporting Category 4 (6.8) Essence Statement C**

The following definitions clarify terms used in the grade 6 mathematics assessment tasks to ensure that the content of the tasks is understood. When appropriate, examples and nonexamples have been provided for further clarification. These are just examples and do not represent all the appropriate ways to test the skills in the STAAR Alternate assessment tasks.

Levels 3 and 2: page 12

**nonstandard units of measurement for weight** – real-life objects that approximate standard units of measure.

- In the Level 3 task, a book, a bag of coffee beans, and an average-size shoe are examples of real-life objects that usually weigh about one pound.
- Labeled, one-pound weights are standard units for measuring weight and are NOT appropriate for this Level 3 task.
  
- In the Level 2 task, choices for the nonstandard unit measuring weight could be: an object that is much heavier than the food item, an object that is much lighter than the food item, and an object that is moderately lighter than the food item (correct answer).
- Rulers and thermometers are standard units of measurement for length and temperature and are NOT appropriate choices for this Level 2 task.

STAAR Reporting Category 4 – Measurement: The student will demonstrate an understanding of the concepts and uses of measurement.	
TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations	Essence of TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations
<p><b>(6.8) Measurement.</b> The student solves application problems involving estimation and measurement of length, area, time, temperature, volume, weight, and angles. The student is expected to</p> <ul style="list-style-type: none"> <li>(A) estimate measurements (including circumference) and evaluate reasonableness of results; Supporting Standard</li> <li>(B) select and use appropriate units, tools, or formulas to measure and to solve problems involving length (including perimeter), area, time, temperature, volume, and weight; Readiness Standard</li> <li>(C) measure angles; Supporting Standard</li> <li>(D) convert measures within the same measurement system (customary and metric) based on relationships between units. Supporting Standard</li> </ul>	<p><b>Essence Statement C:</b> Uses estimation, unit conversions, and measurement to solve problems.</p>

### **Level 3**

**Prerequisite skill:** identify concrete models that approximate standard units of weight/mass and use them to measure weight/mass

The student will investigate how to use nonstandard units of measurement to approximate weight. The student will be presented a nonstandard unit that approximates one pound. The student will be presented a group of identical food items (different from the nonstandard unit) whose total weight is in excess of one pound. The student will estimate the number of food items needed to equal the approximate weight of the nonstandard unit. The student will be presented a scale. The student will determine the weight of the estimated food items using the scale. The student will evaluate the accuracy of his or her estimate.

Predetermined Criteria

1. The student will estimate the number of food items needed to equal the approximate weight of the nonstandard unit.
2. The student will determine the weight of the estimated food items using the scale.
3. The student will evaluate the accuracy of his or her estimate.

Process skill: use tools such as real objects, manipulatives, and technology to solve problems

Transition

### **Level 2**

**Prerequisite skill:** select a non-standard unit of measure such as beans or marbles to determine the weight/mass of a given object

The student will investigate how to use nonstandard units of measurement to approximate weight. The student will be presented one packaged food item. The student will examine the weight of the food item without weighing it. The student will be presented three nonstandard units of measure, one of which is the best choice for measuring the approximate weight of the packaged food item. The student will identify the best nonstandard unit of measure. The student will assist in using the nonstandard unit of measure to approximate the weight of the packaged food item.

Predetermined Criteria

1. The student will examine the weight of the food item without weighing it.
2. The student will identify the best nonstandard unit of measure.
3. The student will assist in using the nonstandard unit of measure to approximate the weight of the packaged food item.

Process skill: use tools such as real objects, manipulatives, and technology to solve problems

Transition

## Level 1

**Prerequisite skill:** compare two objects according to weight/mass (heavier than, lighter than or equal to)

The student will participate in an activity to find out which items are heavier than others. The student will be presented a device that is activated when a heavy item is placed on it. The student will also be presented light and heavy items. For each item, the student will explore the item and then participate in placing the item on the device. The student will respond to the heavy items when the items activate the device.

Predetermined Criteria

1. The student will explore each item.
2. The student will participate in placing each item on the device.
3. The student will respond to the heavy items when the items activate the device.

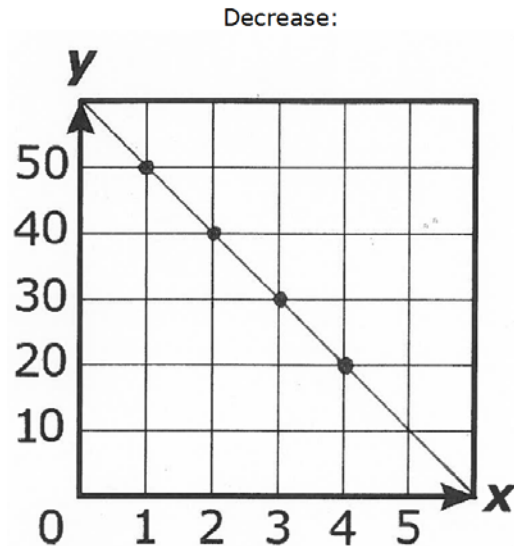
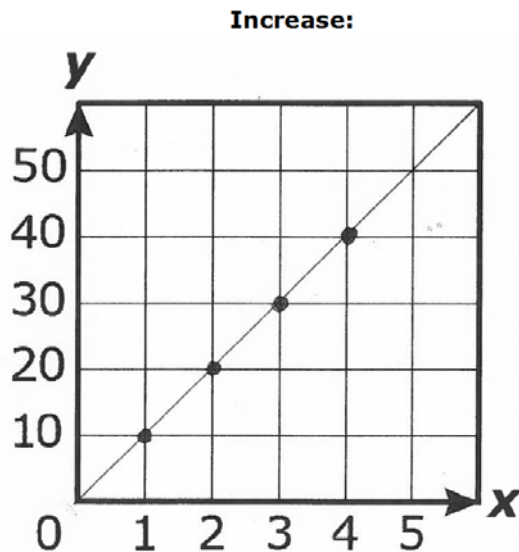
## Definitions/Examples for STAAR Reporting Category 5 (6.9) Essence Statement D

The following definitions clarify terms used in the grade 6 mathematics assessment tasks to ensure that the content of the tasks is understood. When appropriate, examples and nonexamples have been provided for further clarification. These are just examples and do not represent all the appropriate ways to test the skills in the STAAR Alternate assessment tasks.

Levels 3 and 2: pages 15 and 16

**trend line** – a line that represents a trend in the data represented on a graph.

- On a graph, a student can form a trend line by connecting the data points that show a trend and extending that line.
- A steady increase or decrease occurs when the data increases or decreases at the same rate—for example, as the data points increase by one along the  $x$ -axis, they increase by 10 along the  $y$ -axis.
- In the Level 3 task, the student is expected to record the data and a trend line for the data on a graph on his or her own.
- In the Level 2 task, the student is expected to complete the graph by connecting the data points. See the examples of completed graphs below:



<b>STAAR Reporting Category 5 – Probability and Statistics: The student will demonstrate an understanding of probability and statistics.</b>	
<b>TEKS Knowledge &amp; Skills Statement / STAAR-Tested Student Expectations</b>	<b>Essence of TEKS Knowledge &amp; Skills Statement / STAAR-Tested Student Expectations</b>
<p><b>(6.9) Probability and statistics.</b> The student uses experimental and theoretical probability to make predictions. The student is expected to</p> <p>(A) construct sample spaces using lists and tree diagrams; Supporting Standard</p> <p>(B) find the probabilities of a simple event and its complement and describe the relationship between the two. Supporting Standard</p>	<p><b>Essence Statement D:</b> Uses probability to make predictions.</p>

### **Level 3**

**Prerequisite skill:** use data to describe events as more likely than, less likely than, or equally likely as

The student will be presented data that depicts a steady increase or decrease in number indicating a trend for a four-day period and a labeled graph that has the four days labeled in sequential order on one axis and numbers on the other axis. The student will record the data points and the resulting trend line for the four days. Using the trend line, the student will predict what the data will most likely be for the fifth day. The student will justify his or her prediction based on the amount of daily increase or decrease.

Predetermined Criteria

1. The student will record the data points and the resulting trend line for the four days.
2. The student will predict what the data will most likely be for the fifth day.
3. The student will justify his or her prediction based on the amount of daily increase or decrease.

## Level 2

**Prerequisite skill:** use data to describe events as more likely or less likely such as drawing a certain color marker from a bag of seven red markers and three green markers

The student will be presented a graph that has data points for a four-day period that depicts a steady increase or decrease in number. The student will complete the graph by connecting the data points to form a trend line. The student will identify the current trend shown by the line. The student will identify in which direction the trend will most likely go.

Predetermined Criteria

1. The student will complete the graph by connecting the data points to form a trend line.
2. The student will identify the current trend shown by the line.
3. The student will identify in which direction the trend will most likely go.

## Level 1

**Prerequisite skill:** use information from a graph of real objects or pictures in order to answer questions

The student will be presented a graph including representations of routine activities in which he or she has participated. One of the representations will be repeated several times on the graph and will be paired with a sensory experience each time. The student will explore the representations on the graph. The student will respond to the sensory input provided as the graph is explored. After exploring the graph, the student will anticipate the sensory input representing the most frequently occurring activity.

Predetermined Criteria

1. The student will explore the representations on the graph.
2. The student will respond to the sensory input provided as the graph is explored.
3. The student will anticipate the sensory input representing the most frequently occurring activity.