

Standardized Assessment Tasks for
STAAR Alternate

Grade 8 Mathematics

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>(8.2) Number, operation, and quantitative reasoning. The student selects and uses appropriate operations to solve problems and justify solutions. The student is expected to</p> <ul style="list-style-type: none"> (A) select appropriate operations to solve problems involving rational numbers and justify the selections; Supporting Standard (B) use appropriate operations to solve problems involving rational numbers in problem situations; Readiness Standard (C) evaluate a solution for reasonableness; Supporting Standard (D) use multiplication by a given constant factor (including unit rate) to represent and solve problems involving proportional relationships including conversions between measurement systems. Supporting Standard 	<p>Essence Statement A: Solves problems using operations.</p>

Level 3

Prerequisite skill: use models to solve division problems and use number sentences to record the solutions

The student will be presented a real-life problem in which a given number of objects needs to be shared equally. The student will be presented a group of objects equal to a two-digit number that can be divided without a remainder. The student will generate a division problem using the objects. The student will generate an equation to represent the division problem. The student will generate a multiplication equation to check his or her answer for the division problem.

Predetermined Criteria

1. The student will generate a division problem using the objects.
2. The student will generate an equation to represent the division problem.
3. The student will generate a multiplication equation to check his or her answer for the division problem.

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

Transition

Level 2

Prerequisite skill: model, create, and describe division situations in which a set of concrete objects is separated into equivalent sets

The student will be presented a real-life problem in which a given number of objects needs to be divided into equal groups. The student will be presented a group of objects. The student will be directed to divide the objects into a specified number of equal groups. The student will arrange the objects into the specified number of equal groups. The student will identify the number of objects in each group. The student will identify a division equation that represents the problem.

Predetermined Criteria

1. The student will arrange the objects into the specified number of equal groups.
2. The student will identify the number of objects in each group.
3. The student will identify a division equation that represents the problem.

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

Transition

Level 1

Prerequisite skill: use informal strategies to share or divide up to 10 items equally

The student will be presented objects to be divided equally into two groups for sharing. The student will explore the objects. The student will participate in dividing the objects equally into two groups. The student will respond to each equal group of objects. The student will participate in sharing the objects with another person.

Predetermined Criteria

1. The student will participate in dividing the objects equally into two groups.
2. The student will respond to each equal group of objects.
3. The student will participate in sharing the objects with another person.

Transition

**Definitions/Examples for STAAR Reporting Category 2 (8.3)
Essence Statement B**

The following definitions clarify terms used in the grade 8 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 2: page 7

partially-completed table – a table that has some columns, rows, or cells filled with information/data.

- See the examples below for a partially completed table appropriate for this Level 2 task:

Number of Nickels	Total Value (Cents)
1	5
2	10
_____	_____
_____	_____
_____	_____

Number of Quarters	Total Value (Cents)
1	25
2	50
_____	_____

Number of Dimes	Total Value (Cents)
1	10
2	20
_____	_____
_____	_____

- In this task, the number of rows in the table depends on the specified amount for the item chosen by the teacher.

same kind of coins – coins of the same value/denomination

- A student who uses all nickels to reach the value of \$.25 is using the same kind of coins.
- Plastic coin manipulatives are NOT considered identical just because they are all made of plastic (identical material).

pattern – an arrangement that repeats according to a rule. There should be at least three repeating iterations/strands to establish a pattern.

STAAR Reporting Category 2 – Patterns, Relationships, and Algebraic Reasoning: The student will demonstrate an understanding of patterns, relationships, and algebraic reasoning.	
TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations	Essence of TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations
<p>(8.3) Patterns, relationships, and algebraic thinking. The student identifies proportional or non-proportional linear relationships in problem situations and solves problems. The student is expected to</p> <p>(A) compare and contrast proportional and non-proportional linear relationships; Supporting Standard</p> <p>(B) estimate and find solutions to application problems involving percents and other proportional relationships such as similarity and rates. Readiness Standard</p>	<p>Essence Statement B: Estimates and solves problems involving proportional and non-proportional relationships.</p>

Level 3

Prerequisite skill: identify patterns in multiplication facts using concrete objects, pictorial models, or technology

The student will be presented a real-life problem in which three identical items are needed per person for a specified number of people. The student will record a multiplication equation to represent the problem. The student will determine the total number of items that are needed for the specified number of people. The student will generate another equation to solve the problem when the number of people is increased.

Predetermined Criteria

1. The student will record a multiplication equation to represent the problem.
2. The student will determine the total number of items that are needed for the specified number of people.
3. The student will generate another equation to solve the problem when the number of people is increased.

Process skill: select or develop an appropriate problem-solving plan or strategy, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem

Mathematics Grade 8; Reporting Category 2 (8.3); Essence Statement: B

Level 2

Prerequisite skill: find patterns in numbers such as in a 100s chart

The student will be presented a partially completed table that when completed will show the total number of the same kind of coins needed to purchase an item for a specified amount. The table will show the first two rows of the pattern. The first column will contain the number of coins and the second column will contain the total value of the coins. The student will identify the pattern. The student will complete the table. The student will identify the total number of coins needed to purchase the item for the specified amount.

Predetermined Criteria

1. The student will identify the pattern.
2. The student will complete the table.
3. The student will identify the total number of coins needed to purchase the item for the specified amount.

Process skill: select or develop an appropriate problem-solving plan or strategy including drawing a picture, looking for a pattern, systematic guessing and checking, or acting it out in order to solve a problem

Level 1

Prerequisite skill: compare and order whole numbers using place value

The student will be presented a real-life problem in which a large quantity of the same item is needed. The student will explore one item paired with the number "1." The student will experience 100 items that are identical to the original item and paired with the number "100." The student will respond to the larger amount.

Predetermined Criteria

1. The student will explore one item paired with the number "1."
2. The student will experience 100 items that are identical to the original item and paired with the number "100."
3. The student will respond to the larger amount.

Definitions/Examples for STAAR Reporting Category 3 (8.6) Essence Statement C

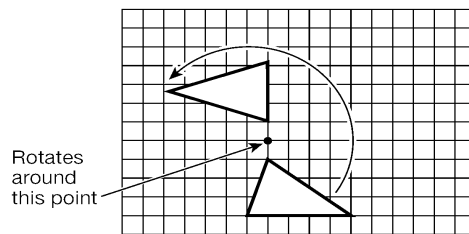
The following definitions clarify terms used in the grade 8 mathematics assessment tasks to ensure that the content of the tasks is understood. When appropriate, examples and nonexamples have been provided for further clarification. These are just examples and do not represent all the appropriate ways to test the skills in the STAAR Alternate assessment tasks.

Level 3: page 10

transformations – ways of moving a figure or object. Three kinds of transformations are rotations, translations, and reflections. The result of a translation, reflection, or rotation is a figure or object that is congruent (same size, same shape) to the original figure or object.

- For this Level 3 task, the real-life objects used must be identical. Examples are: classroom chairs or soup cans.
- Shoes or gloves are NOT identical and are not appropriate for this task.

In a **rotation**, a figure or object moves in a circular path around a point. See the example below of a rotation or turning movement:



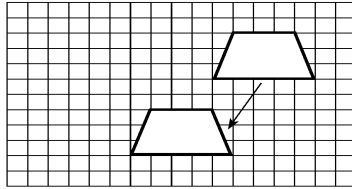
- In this Level 3 task, meaningful rotations (making the task transitional) could be: turning chairs so that they are lined up under a table, turning books so the spines face the same way, turning coffee cups so all their handles are aligned on a shelf, or rotating a soup can to line up with another can on a shelf. See example below:



- A rotation of a random object like a tissue box for no purpose is NOT considered meaningful for a transitional task.

Level 3: page 10

A figure can be translated up, down, left, right, or diagonally by sliding it. See the example below of a **translation**, a sliding movement:



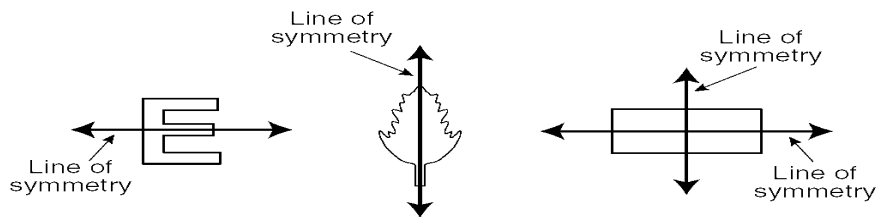
- In this Level 3 task, meaningful translations (making the task transitional) could be: sliding a chair so that it is lined up under a table, sliding lunch trays to be together in a stack, sliding books on a shelf to be aligned, or sliding a soup can to line up with another can on a shelf. See example below:



Level 2: page 11

symmetrical – If a figure can be folded in half to make two congruent halves, then the figure is symmetrical. The line at which a figure can be folded so that its two halves match exactly is called a line of symmetry. Some figures have more than one line of symmetry. Some figures are nonsymmetrical and have no line of symmetry.

- See the examples of symmetrical figures below:



- The letters "R," "L," and "F" do NOT have lines of symmetry.

STAAR Reporting Category 3 – Geometry and Spatial Reasoning: The student will demonstrate an understanding of geometry and spatial reasoning.	
TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations	Essence of TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations
<p>(8.6) Geometry and spatial reasoning. The student uses transformational geometry to develop spatial sense. The student is expected to</p> <p>(A) generate similar figures using dilations including enlargements and reductions; Readiness Standard</p> <p>(B) graph dilations, reflections, and translations on a coordinate plane. Supporting Standard</p>	<p>Essence Statement C: Uses transformational geometry</p>

Level 3

Prerequisite skill: demonstrate translations, reflections, and rotations using concrete models

The student will be presented one real-life object placed in a position by the teacher. The student will be presented other objects that will require a translation or rotation in order to be oriented like the first object. The student will generate a rotation for each object that requires a rotation. The student will generate a translation for each object that requires a translation. After each transformation, the student will determine if a rotation or translation was performed.

Predetermined Criteria

1. The student will generate a rotation for each object that requires a rotation.
2. The student will generate a translation for each object that requires a translation.
3. The student will determine if a rotation or translation was performed.

Process skill: identify mathematics in everyday situations

Transition

Level 2

Prerequisite skill: create two-dimensional figures with lines of symmetry using concrete models and technology

The student will be presented three two-dimensional figures, one that is symmetrical and two that are not symmetrical. The student will assist in folding each figure to find a line of symmetry. The student will identify the figure that is symmetrical. The student will identify a part that can be added to one of the nonsymmetrical figures to make a reflection.

Predetermined Criteria

1. The student will assist in folding each figure to try to find a line of symmetry.
2. The student will identify the figure that is symmetrical.
3. The student will identify a part that can be added to one of the nonsymmetrical figures to make a reflection.

Process skill: identify mathematics in everyday situations

Level 1

Prerequisite skill: place an object in a specified position

The student will be presented with an object to be placed with other like objects already positioned on a shelf. The student will explore the part of the object that should be placed outward. The student will participate in turning and placing the object properly on the shelf. The student will participate in sliding the object next to the like objects.

Predetermined Criteria

1. The student will explore the part of the object that should be placed outward.
2. The student will participate in turning and placing the object properly on the shelf.
3. The student will participate in sliding the object next to the like objects.

Transition

Definitions/Examples for STAAR Reporting Category 5 (8.12)
Essence Statement D

The following definitions clarify terms used in the grade 8 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 3: page 13

range – the difference between the greatest and the least numbers in the data set. Subtract to find the difference.

- Consider the following data set: 99, 79, 64, 92, 77, 89, 84, 68, 66.
- The **range** of this set is 35 ($99 - 64 = 35$).

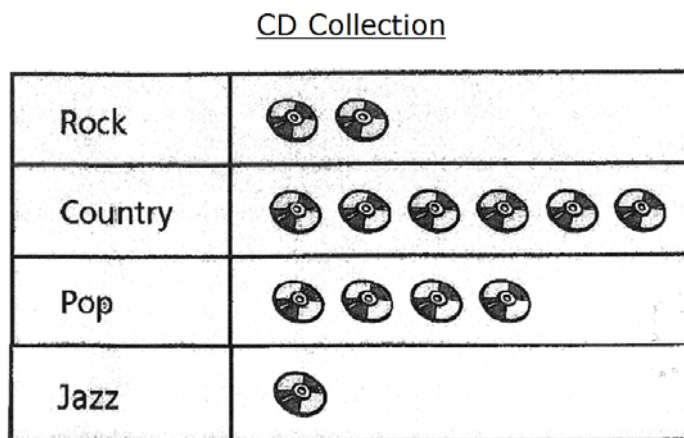
mode – the value (or values) that appears in a set of data more frequently than any other value.


- Consider the following data set: 70, 83, 90, 70, 83, 83, 90, 100.
- The **mode** of this set is 83. The number 83 appears three times.

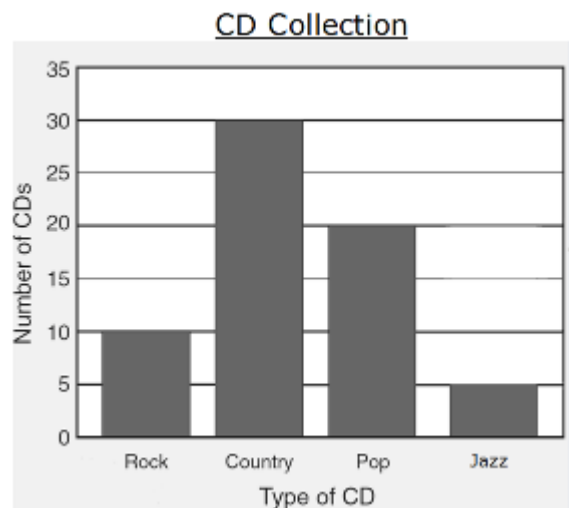
Level 2: page 14

pictograph and a bar graph that displays the same data – corresponding graphs with different formats.

- See the examples of completed graphs below:



Each  means 5 CDs.



- In this Level 2 task, the student is identifying a missing category of data on the bar graph. The bar graph that is presented to the student at the beginning of the task should only have THREE categories of data; one of the categories on the bar graph should be missing.

STAAR Reporting Category 5 – Probability and Statistics: The student will demonstrate an understanding of probability and statistics.	
TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations	Essence of TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations
<p>(8.12) Probability and statistics. The student uses statistical procedures to describe data. The student is expected to</p> <ul style="list-style-type: none"> (A) use variability (range, including interquartile range (IQR)) and select the appropriate measure of central tendency to describe a set of data and justify the choice for a particular situation; Supporting Standard (B) draw conclusions and make predictions by analyzing trends in scatterplots; Supporting Standard (C) select and use an appropriate representation for presenting and displaying relationships among collected data, including line plots, line graphs, stem and leaf plots, circle graphs, bar graphs, box and whisker plots, histograms, and Venn diagrams, with and without the use of technology. Supporting Standard 	<p>Essence Statement D: Displays and interprets relationships among data.</p>

Level 3

Prerequisite skill: describe characteristics of data presented in tables and graphs including median, mode, and range

The student will be presented a list of numbers in random order with at least two of the numbers being the same. The student will organize the data in the list. The student will determine the range of the data. The student will determine the mode of the data.

Predetermined Criteria

1. The student will organize the data in the list.
2. The student will determine the range of the data.
3. The student will determine the mode of the data.

Process skill: relate informal language to mathematical language and symbols

Mathematics Grade 8; Reporting Category 5 (8.12); Essence Statement: D

Level 2

Prerequisite skill: collect, organize, record, and display data in pictographs and bar graphs where each picture or cell might represent more than one piece of data

The student will be presented a pictograph and a bar graph that displays the same data. The pictograph will have all data for four categories completely displayed. The bar graph will have one of the four categories of data missing. The student will match the displayed data from the pictograph to the displayed data on the bar graph. The student will identify which category of data is missing. The student will supply the missing data on the bar graph.

Predetermined Criteria

1. The student will match the displayed data from the pictograph to the displayed data on the bar graph.
2. The student will identify which category of data is missing.
3. The student will supply the missing data on the bar graph.

Process skill: explain and record observations using objects, words, pictures, numbers, and technology (3)

Level 1

Prerequisite skill: collect and sort data

A survey will be conducted in which people are asked about a particular preference. Each participant of the survey will respond by selecting an object to represent his or her preference. The student will participate in collecting the responses. The student will participate in grouping the data by preference. The student will acknowledge the data as it is placed on a real-object graph.

Predetermined Criteria

1. The student will participate in collecting the responses.
2. The student will participate in grouping the data by preference.
3. The student will acknowledge the data as it is placed on a real-object graph.