

Standardized Assessment Tasks for
STAAR Alternate

Algebra I

Definitions/Examples for STAAR Reporting Category 1 (A.1) Essence Statement A

The following definitions clarify terms used in the Algebra I 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, Level 2, and Level 1: pages 4 and 5

function – represents a dependence of one quantity on another and can be described in a number of ways.

Level 3 and Level 2: page 4

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

- In the Level 3 task, a pattern is presented in the first table, and a new pattern is established by the student in the second table.
- In the Level 2 task, a pattern is established as the number of products increases by one, and the total earned increases by \$3.00.
- In the Level 2 task, choices for identifying the pattern might include: a pattern of “number of products times five,” a pattern of “number of products times three,” (correct answer), and a pattern of “number of products times 10.”

Level 2: page 4

three-column table – a table with three columns of data.

- See the example below for a three-column table appropriate for this Level 2 task:

Number of Products	Cost of One Product	Total Earned
1	\$3.00	\$3.00
2	\$3.00	\$6.00
3	\$3.00	\$9.00
4		

STAAR Reporting Category 1 – Functional Relationships: The student will describe functional relationships in a variety of ways.	
TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations	Essence of TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations
<p>Algebra (1) Foundations for functions. The student understands that a function represents a dependence of one quantity on another and can be described in a variety of ways. The student is expected to</p> <ul style="list-style-type: none"> (A) describe independent and dependent quantities in functional relationships; Supporting Standard (B) gather and record data and use data sets to determine functional relationships between quantities; Supporting Standard (C) describe functional relationships for given problem situations and write equations or inequalities to answer questions arising from the situations; Supporting Standard (D) represent relationships among quantities using [concrete] models, tables, graphs, diagrams, verbal descriptions, equations, and inequalities; Readiness Standard (E) interpret and make decisions, predictions, and critical judgments from functional relationships. Readiness Standard 	<p>Essence Statement A: Shows a basic understanding of functions.</p>

Level 3

Prerequisite skill: use patterns and relationships to develop strategies to remember basic multiplication and division facts (such as the patterns in related multiplication and division number sentences (fact families) such as $9 \times 9 = 81$ and $81 \div 9 = 9$)

The student will be presented a completed table showing the relationship between the number of items sold and the total amount of money. One column will display the number of items sold in increments of one and the second column will display the total amount of money made after each purchase. A change in the price of the item will be presented. The student will generate a table to display the number of products sold at the new price and the total amount of money that would be made after each purchase. The student will compare the data in each table. The student will generate a conclusion about how the change in price will affect the amount of money made.

Predetermined Criteria

1. The student will generate a table to display the number of products sold at the new price and the total amount of money that would be made after each purchase.
2. The student will compare the data in each table.
3. The student will generate a conclusion about how the change in price will affect the amount of money made.

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

Level 2

Prerequisite skill: identify and extend whole-number and geometric patterns to make predictions and solve problems

The student will be presented a real-life problem in which products are sold for \$3.00 each. A three-column table will be presented with the columns labeled "Number of Products," "Cost of One Product," and "Total Earned." The first three rows of the table will be completed. The student will identify the pattern. The student will choose the operation that was used between the first and second column to arrive at the totals. The student will complete another row to extend the table.

Predetermined Criteria

1. The student will identify the pattern.
2. The student will choose the operation that was used between the first and second column to arrive at the totals.
3. The student will complete another row to extend the table.

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

Algebra I; Reporting Category 1 Alg (1); Essence Statement: A

Level 1

Prerequisite skill: use patterns to skip count by twos, fives, and tens

The student will be presented objects each of which can be separated into two parts. The student will be presented a number sentence ($1 + 1 = 2$) with objects representing each number. As the equation is presented, the student will experience the objects for each number in the equation. The student will participate in separating the objects into two parts. The student will participate in placing the separated objects into a new number sentence ($2 + 2 = 4$). While the teacher counts by twos to present the new equation, the student will experience the objects representing the new equation.

Predetermined Criteria

1. The student will experience the objects for each number in the original equation.
2. The student will participate in separating the objects into two parts.
3. The student will experience the objects representing the new equation.

STAAR Reporting Category 2 – Properties and Attributes of Functions: The student will demonstrate an understanding of the properties and attributes of functions.	
TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations	Essence of TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations
<p>Algebra (4) Foundations for functions. The student understands the importance of the skills required to manipulate symbols in order to solve problems and uses the necessary algebraic skills required to simplify algebraic expressions and solve equations and inequalities in problem situations. The student is expected to</p> <ul style="list-style-type: none"> (A) find specific function values, simplify polynomial expressions, transform and solve equations, and factor as necessary in problem situations; Readiness Standard (B) use the commutative, associative, and distributive properties to simplify algebraic expressions; Supporting Standard (C) connect equation notation with function notation, such as $y = x + 1$ and $f(x) = x + 1$. Supporting Standard 	<p>Essence Statement B: Uses mathematical skills to simplify expressions and solve problems.</p>

Level 3

Prerequisite skill: represent multiplication and division situations in picture, word, and number form

The student will be presented a simple recipe that, excluding fractions, makes six servings. The recipe will need to be adjusted to make 12 servings. The student will generate an equation for adjusting one ingredient for 12 servings. The original recipe of six servings will then need to be adjusted to make three servings. The student will generate a second equation for adjusting one ingredient for three servings. The student will solve both equations.

Predetermined Criteria

1. The student will generate an equation for adjusting one ingredient for 12 servings.
2. The student will generate a second equation for adjusting one ingredient for three servings.
3. The student will solve both equations.

Process skill: solve problems that incorporate understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness

Transition

Level 2

Prerequisite skill: solve and record multiplication problems (up to two digits times one digit)

The student will be presented a specified number of servings that total a two-digit number. The servings will be placed into equal rows. The student will identify a multiplication equation that represents the arrangement. The student will construct a new arrangement of the servings into equal rows. The student will identify a multiplication equation that represents the new arrangement.

Predetermined Criteria

1. The student will identify a multiplication equation that represents the arrangement.
2. The student will construct a new arrangement of the servings into equal rows.
3. The student will identify a multiplication equation that represents the new arrangement.

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

Level 1

Prerequisite skill: model, create, and describe multiplication situations in which equivalent sets of concrete objects are joined

The student will be presented three objects in a row. The student will participate in counting the objects. The student will participate in creating another row when presented three additional objects. Both sets will be counted as a combined total. The student will respond to the combined set of objects that form the total.

Predetermined Criteria

1. The student will participate in counting the objects.
2. The student will participate in creating another row when presented three additional objects.
3. The student will respond to the combined set of objects that form the total.

**Definitions/Examples for STAAR Reporting Category 3 (A.5)
Essence Statement C**

The following definitions clarify terms used in the Algebra I 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 11

two-column table – a table with two columns of data.

- See the example below for a two-column table appropriate for this Level 2 task:

Number of Days Riding Bus	Cost of Riding Bus
1	\$2.00
2	\$4.00
3	\$6.00
4	\$8.00
5	

STAAR Reporting Category 3 – Linear Functions: The student will demonstrate an understanding of linear functions.	
TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations	Essence of TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations
<p>Algebra (5) Linear functions. The student understands that linear functions can be represented in different ways and translates among their various representations. The student is expected to</p> <ul style="list-style-type: none"> (A) determine whether or not given situations can be represented by linear functions; Supporting Standard (B) determine the domain and range for linear functions in given situations; Supporting Standard (C) use, translate, and make connections among algebraic, tabular, graphical, or verbal descriptions of linear functions. Readiness Standard 	<p>Essence Statement C: Understands different representations of linear functions.</p>

Level 3

Prerequisite skill: formulate equations from problem situations described by linear relationships

The student will be presented a real-life problem in which he or she works at a job, earns a specific amount an hour, and works a specific number of hours each day. The student will determine how much he or she earns each day. The student will generate a graph or a table to show the total earned each day for a five-day period. The student will generate an equation to show the total earned for the five-day period.

Predetermined Criteria

1. The student will determine how much he or she earns each day.
2. The student will generate a graph or a table to show the total earned each day for a five-day period.
3. The student will generate an equation to show the total earned for the five-day period.

Process skill: identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics

Transition

Algebra I; Reporting Category 3 Alg (5); Essence Statement: C

Level 2

Prerequisite skill: describe the relationship between two sets of related data such as ordered pairs in a table

The student will be presented a real-life problem that requires the student to find the cost of riding the bus for five days. The student will be presented a two-column table with five rows. The table will have one column for number of days and one column for cost. The first four rows of the table will be completed. The fifth row will only have the number of days recorded. The student will identify the cost of riding the bus for one day. The student will identify the cost of riding the bus for three days. The student will complete the table supplying the cost of riding the bus for five days.

Predetermined Criteria

1. The student will identify the cost of riding the bus for one day.
2. The student will identify the cost of riding the bus for three days.
3. The student will complete the table supplying the cost of riding the bus for five days.

Process skill: identify mathematics in everyday situations

Transition

Level 1

Prerequisite skill: identify patterns in related addition and subtraction sentences (fact families for sums to 18) such as $2 + 3 = 5$, $3 + 2 = 5$, $5 - 2 = 3$, and $5 - 3 = 2$

The student will participate in a task that earns him or her a dollar that can be exchanged for a preferred activity. The student will acknowledge the dollar. The student will participate in pairing the dollar with the equation $0 + 1 = 1$. The student will participate in exchanging the dollar to engage in a preferred activity. The student will acknowledge the equation $1 - 1 = 0$ that represents the exchange.

Predetermined Criteria

1. The student will participate in a task that earns him or her a dollar.
2. The student will participate in pairing the dollar with the equation $0 + 1 = 1$.
3. The student will acknowledge the equation $1 - 1 = 0$ that represents the exchange.

Transition

Definitions/Examples for STAAR Reporting Category 5 (A.10) Essence Statement D

The following definitions clarify terms used in the Algebra I 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.

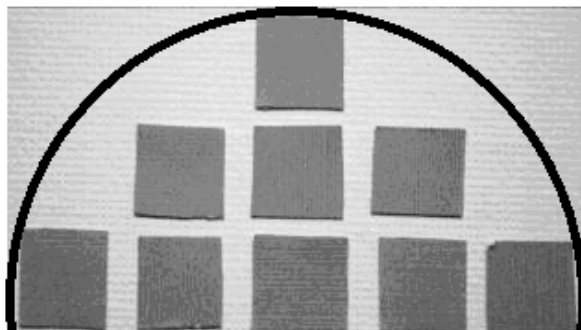
Level 3, Level 2, and Level 1: pages 13 and 14

quadratic function – a function that can be graphed with a curve called a parabola. The arced path of a ball being thrown in the air and falling to the ground is a real-life example of a parabola.

- In the Level 3 task, a student must plot data points and graph a curve on his or her own based on data displayed in a table.
- In the Level 2 task, a student must complete a partially completed graph and construct a curve based on data in a table.
- See the example below of a table of a quadratic function appropriate for the Level 3 task and Level 2 task:

Day	Product Sales
1	100
2	200
3	300
4	200
5	100

- See the example below that is appropriate for the Level 1 task:



STAAR Reporting Category 5 – Quadratic and Other Nonlinear Functions: The student will demonstrate an understanding of quadratic and other nonlinear functions.	
TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations	Essence of TEKS Knowledge & Skills Statement / STAAR-Tested Student Expectations
<p>Algebra (10) Quadratic and other nonlinear functions. The student understands there is more than one way to solve a quadratic equation and solves them using appropriate methods. The student is expected to</p> <p>(A) solve quadratic equations using [concrete] models, tables, graphs, and algebraic methods; Readiness Standard</p> <p>(B) make connections among the solutions (roots) of quadratic equations, the zeros of their related functions, and the horizontal intercepts (x-intercepts) of the graph of the function. Supporting Standard</p>	<p>Essence Statement D: Solves quadratic equations in a variety of ways.</p>

Level 3

Prerequisite skill: use tables and symbols to represent and describe proportional and other relationships such as those involving conversions, arithmetic sequences (with a constant rate of change), perimeter and area

The student will be presented a table that contains data showing a gradual change in product sales for the same item over a five-day period. The data for the first day and second day will show a gradual increase in sales. The sales will peak on the third day. The sales for the fourth and fifth day will show a gradual decrease. The student will generate a graph and plot the data points. The student will generate a curve connecting the data points. The student will evaluate the sales data.

Predetermined Criteria

1. The student will generate a graph and plot the data points.
2. The student will generate a curve connecting the data points.
3. The student will evaluate the sales data.

Algebra I; Reporting Category 5 Alg (10); Essence Statement: D

Level 2

Prerequisite skill: use patterns to multiply by 10 and 100

The student will be presented a table that contains product sales that change in increments of 100 over a five-day period. The data for the first day and second day will show a gradual increase in sales. The sales will peak on the third day. The sales for the fourth and fifth day will show a gradual decrease. The student will be presented a partially completed graph representing a portion of the data from the table. The student will complete plotting the remaining data from the table on the graph. The student will construct a curve connecting the data points. The student will identify a true statement about the sales results represented in the graph.

Predetermined Criteria

1. The student will complete plotting the remaining data from the table on the graph.
2. The student will construct a curve connecting the data points.
3. The student will identify a true statement about the sales results represented in the graph.

Level 1

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

The student will be presented nine identical squares to be placed in a series of columns. The student will participate in placing one square in the first column, two squares in the second column, and three squares in the third column to represent a gradual increase. The student will participate in placing two squares in the fourth column and one square in the fifth column to represent a gradual decrease. The teacher will emphasize the curve created by the data. The student will experience the curve.

Predetermined Criteria

1. The student will participate in placing one square in the first column, two squares in the second column, and three squares in the third column to represent a gradual increase.
2. The student will participate in placing two squares in the fourth column and one square in the fifth column to represent a gradual decrease.
3. The student will experience the curve.