Math Grade 10 C

Grade Level Standard(s):

KY.HS.F.1

Required Assessment Materials:

- Math 10 C Ice Cream Function
- Math 10 C Attainment Task Questions for Student Use

Response Code:

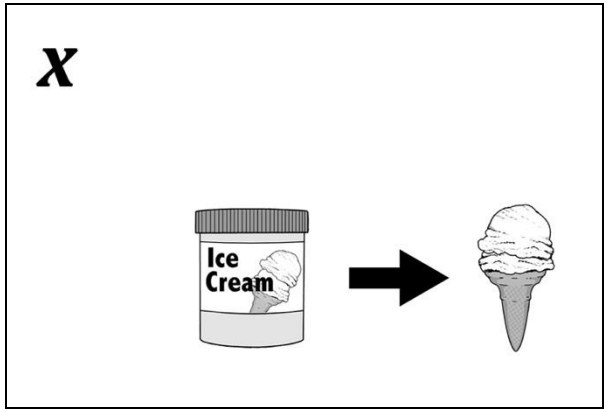
- Indicate the answer provided by the student.

Text Coding:

- "Quotation marks" indicate the script that the teacher should read to the student.
- *Italicized text* provides further direction for the test administrator.
- Words in parenthesis ( ) are optional; they may replace or be read in addition to the word(s) immediately preceding.

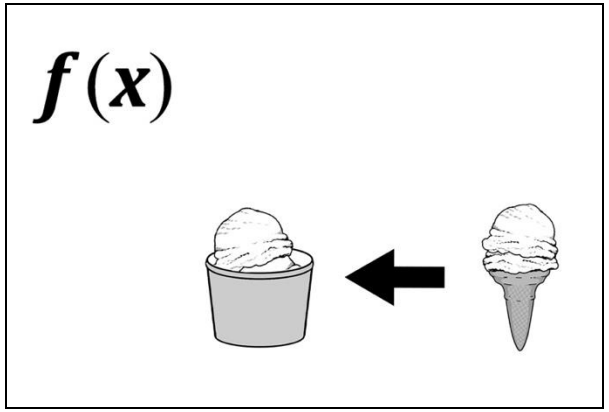
a.

x, the number of gallons of ice cream needed to make a given number of cones



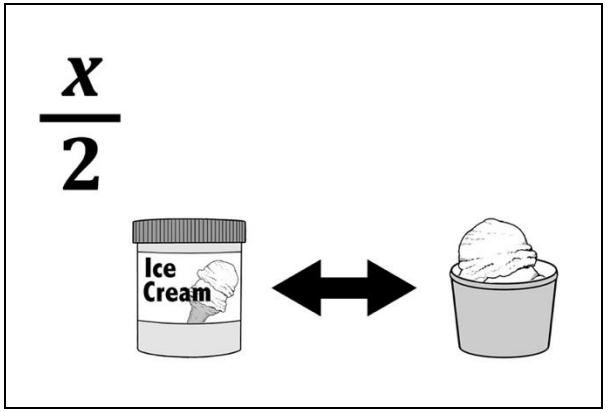
b.

$f(x)$, the set of possible numbers of cups that can be made from the amount of ice cream used to make a specific number of cones



c.

$\frac{x}{2}$, the relationship of the number of gallons to cups



Before beginning task administration, please ensure that all conditions specified in the administration protocol (starting on page 9 of the Administration Guide Overview and Attainment Task Administration) have been met. Inform the student that the task is about to start by saying, "We are about to start the task, and I am going to ask you some questions."

All questions from this task are available for presentation to the student in the material Math 10 C Attainment Task Questions for Student Use.

"Sam owns an ice cream shop and an ice cream truck. Sometimes Sam needs to make more ice cream. On Saturday Sam wants to make cups of ice cream. The number of cups of ice cream that can be made from a gallon is half of the number of cones that can be made from a gallon."

Present the student with Math 10 C Ice Cream Function.

"If the number of cups that can be made is one half of the number of cones that can be made from any amount of ice cream, the relationship can be represented using the function: $f(x) = \frac{x}{2}$."

4. "What is the range of the function?"

Response Option	***Response Rationale***
a. x, the number of gallons of ice cream needed to make a given number of cones	*The student selects the description of the variable x.*
b. $f(x)$, the set of possible numbers of cups that can be made from the amount of ice cream used to make a specific number of cones **(Correct)**	*The student correctly selects the range of the function.*
c. $\frac{x}{2}$, the relationship of the number of gallons to cups	*The student selects the function.*
Depth of Knowledge (DOK) 2	

Math 10 C Ice Cream Function

$$f(x) = \frac{x}{2}$$

Math 10 C Attainment Task Questions for Student Use

4. What is the range of the function?

Kentucky Academic Standard: KY.HS.F.1- Understand properties and key features of functions and the different ways functions can be represented.

a. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then f(x) denotes the output of f corresponding to the input x.

b. Using appropriate function notation, evaluate functions for inputs in their domains and interpret statements that use function notation in terms of a context.

c. For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities and sketch graphs showing key features given a verbal description of the relationship.

d. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.

e. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).). **MP.2, MP.4, MP.7**

Alternate Assessment Target: *Limit full standard to input and output numbers from negative 20 to 20.*

a. No further limitations

b. No further limitations

c. Limit to situations that do not include identification of symmetries, end behavior, or periodicity

d. No further limitations

e. Excluded from assessment.

Student Group	Number of Students*	Percent Correct #4
All Students	545	31.01%
Gender		
Female	198	32.83%
Male	347	29.97%
Ethnicity		
African American	79	26.58%
American Indian or Alaska Native	<10	Not Reported
Asian	<10	Not Reported
Hispanic of Latino	42	33.33%
Native Hawaiian of Pacific Islander	<10	Not Reported
White (Non-Hispanic)	387	30.49%
Two or More Races	28	42.86%
English Learner	32	37.50%
Economically Disadvantaged	405	30.37%

*Number of students that attempted the item