Task Model 1

Response Types: Drag and Drop, Hot Spot, Multiple Choice, single correct response

DOK Level 2

6.SP.B.4
Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

Evidence Required:
1. The student displays numerical data on line plots, dot plots, histograms, and box plots.

Tools: Calculator

Accessibility Note: Hot Spot items are not currently able to be Brailled. Minimize the number of items developed to this TM.

Prompt Features: The student is prompted to generate line plots, dot plots, histograms, or box plots that represent a set of numerical data.

Stimulus Guidelines:

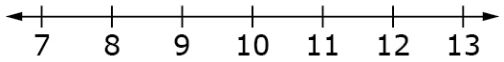
- If used, context should be familiar to students 11 to 13 years old.
- Numbers in the data set should be whole numbers.
- Vertical axis for histograms should be in one-unit increments.
- Item difficulty can be adjusted via these example methods:
  - Students create line plot/dot plot/histogram that corresponds to a given data set.
  - Students select/create box plot that corresponds to given data set.

TM1a
Stimulus: Students create a dot plot given a data set.

Example Stem: The ages of 9 students in a summer camp are shown.

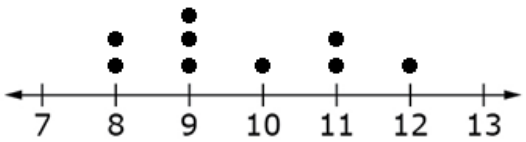
10	11	12
9	8	9
11	9	8

Click above the number line to create a dot plot for the data set.



Interaction: The student is given a labeled number line. Student uses the Hot Spot tool to click spaces above the number line to create a dot plot.

Rubric: (1 point) Student correctly creates a dot plot to represent the data (see below).



Response Type: Hot Spot

Task Model 1

Response Types: Drag and Drop, Hot Spot, Multiple Choice, single correct response

DOK Level 2

6.SP.B.4
Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

Evidence Required:
1. The student displays numerical data on line plots, dot plots, histograms, and box plots.

Tools: Calculator

Accessibility Note: Hot Spot items are not currently able to be Brailled. Minimize the number of items developed to this TM.

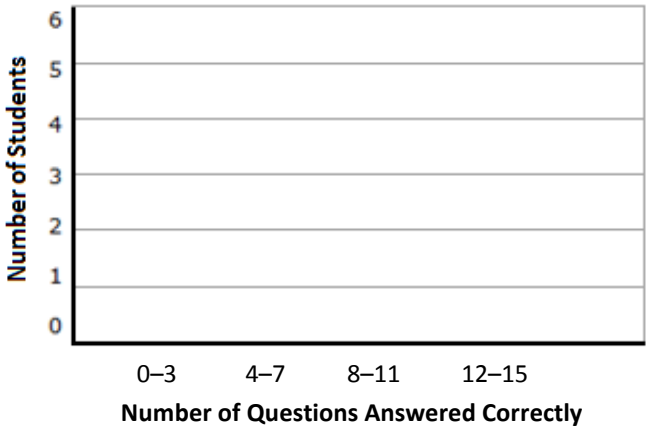
TM1b
Stimulus: Students create a histogram given a data set.

Example Stem: The numbers of test questions answered correctly by 9 students are shown.

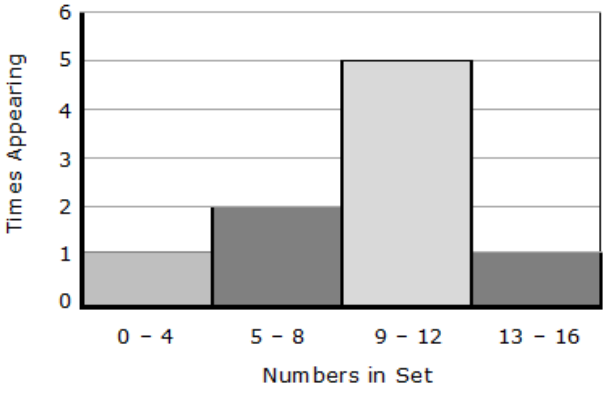
10	11	2
9	15	9
7	4	8

Click within the graph area to create a histogram for the data set.

Interaction: The student is given a graph with both axes labeled. Hot Spot tool is used to click unit squares on the graph to shade in and create a histogram.



Rubric: (1 point) Student correctly creates a histogram to represent the data (see below)



Response Type: Hot Spot

Task Model 1

Response Types: Drag and Drop, Hot Spot, Multiple Choice, single correct response

DOK Level 2

6.SP.B.4
Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

Evidence Required:
1. The student displays numerical data on line plots, dot plots, histograms, and box plots.

Tools: Calculator

Accessibility Note: Drag and Drop items are not currently able to be Brailled. Minimize the number of items developed to this TM.

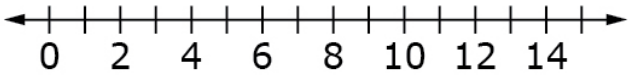
TM1c
Stimulus: Students create a box plot given a data set.

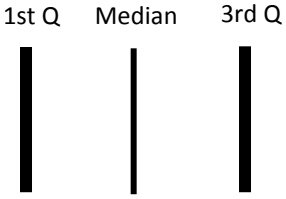
Example Stem: The numbers of test questions answered correctly by 9 students are shown.

10	11	12
9	15	9
7	4	8

The vertical line segments represent the 1st quartile (1st Q), median, and the 3rd quartile (3rd Q) of the data set.

Drag each line segment to the correct location on the number line.





Interaction: The student is given a number line and a palette at the bottom of the screen. The palette contains three images of line segments labeled "1st Q," "Median," and "3rd Q." Students use the drag-and-drop tool to place the line segents in the appropriate place on the number line. Snap-to feature should be used at each tick mark on the number line.

Rubric: (1 point) Student places the three line segments in the correct locations on the number line.

Response Type: Drag and Drop

Task Model 1

Response Types: Drag and Drop, Hot Spot, Multiple Choice, single correct response

DOK Level 2

6.SP.B.4
Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

Evidence Required:
1. The student displays numerical data on line plots, dot plots, histograms, and box plots.

Tools: Calculator

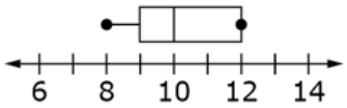
TM1d
Stimulus: Students identify the box plot that represents a given data set.

Example Stem: The ages of 9 students in a summer camp are shown in this frequency table.

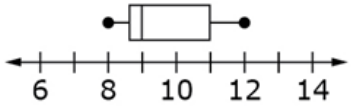
Age	Frequency
8	2
9	3
10	1
11	2
12	1

Which box plot correctly displays the data shown in the table?

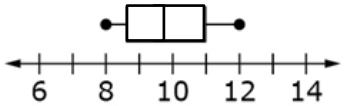
A.



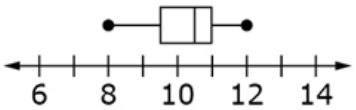
B.



C.



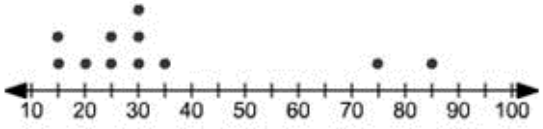
D.



Answer Choices: Answer choices will be box plots. Distractors will include incorrectly calculating the median, upper and lower quartile, and/or misrepresenting the data on a box plot.

Rubric: (1 point) The student selects the correct box plot (e.g., B).

Response Type: Multiple Choice, single correct response

Task Model 2
 	
Response Type: Equation/Numeric
 	
DOK Level 1
 	
6.SP.B.5a, 6.SP.B.5b
Summarize numerical data sets in relation to their context, such as by:
a. Reporting the number of observations.
b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.
 	
Evidence Required:
2. The student summarizes numerical data sets by describing the nature of the attribute under investigation including how it was measured, its units of measurement, and number of observations.
 	
Tools: Calculator
	Prompt Features: The student is prompted to summarize numerical data sets by writing how it was measured, its units of measurement, or number of observations.
	
	Stimulus Guidelines:
	• Context should be familiar to students 11 to 13 years old.
	• Data set may be presented as a:
	  ○ table
	  ○ line/dot plot
	  ○ histogram
	• Item difficulty can be adjusted via these example methods:
	  ○ Students give the number of observations that corresponds to a given data set.
	  ○ Students describe how the attribute of a given data set is measured and the unit of measurement used.
	
	TM2
	Stimulus: The student is presented with a set of numerical data.
	
	Example Stem: Ted surveyed his neighbors to see how much money they spent on gasoline each week. The results are in the dot plot shown.
	 
	
	Amount of money (dollars)
	
	Enter the total number of people Ted surveyed.
	
	Rubric: (1 point) Student enters correct value (e.g., 11).
	
	Response Type: Equation/Numeric

Task Model 3

Response Type: Equation/Numeric

DOK Level 2

6.SP.B.5c
Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.

Evidence Required:
3. The student summarizes numerical data sets by determining quantitative measures of center (median and/or mean) and variability (interquartile range, range, and/or mean absolute deviation).

Tools: Calculator

Prompt Features: The student is prompted to write quantitative values for the measures of center (median or mean) or variability (interquartile range) for a given numerical data set.

Stimulus Guidelines:

- Context should be familiar to students 11 to 13 years old.
- Data set may be presented as a:
  - list
  - table
  - line/dot plot
  - box plot
- Item difficulty can be adjusted via these example methods:
  - Students find the range/median for a data set (odd number data set for median).
  - Students find the mean/median for a data set (even number data set for median).

TM3a
Stimulus: The student is presented with a set of numerical data.

Example Stem 1: Sophia surveyed her friends to see how many minutes they studied for their math test last evening. The results are in this list.

10, 15, 20, 15, 35, 25, 20, 30, 25

Enter the **mean** of the data.

Rubric: (1 point) Student gives the correct mean of the data. Students' answers should be within an acceptable range (e.g., 21.6–22).

Response Type: Equation/Numeric

Example Stem 2: Avery surveyed her friends to see how many minutes they studied for their math test last evening. The results are shown in the frequency table.

Minutes	Frequency
10	||
15	|||
20	||
25	||
30	||
35	|

Enter the **median** of the data.

Rubric: (1 point) Student gives the correct median of the data (e.g., 20).

Response Type: Equation/Numeric

Task Model 3

Response Type: Equation/Numeric

DOK Level 2

6.SP.B.5c
Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.

Evidence Required:
3. The student summarizes numerical data sets by determining quantitative measures of center (median and/or mean) and variability (interquartile range, range, and/or mean absolute deviation).

Tools: Calculator

Version 3 Update:
Removed example stem 2 from TM3b and retired TM3c, TM4, and TM5.

Prompt Features: The student is prompted to write quantitative values for the measures of variability (interquartile range) for a given numerical data set.

Stimulus Guidelines:

- Context should be familiar to students 11 to 13 years old.
- Data set may be presented as a:
  - list
  - table
  - line/dot plot
  - box plot
- Item difficulty can be adjusted via these example methods:
  - The data set has an odd amount of numbers.
  - The data set has an even amount of numbers.
  - Student finds the interquartile range.

TM3b
Stimulus: The student is presented with a set of numerical data.

Example Stem: Avery surveyed her friends to see how many minutes they studied for their math test last evening. The results are shown in the frequency table.

Minutes	Frequency
10	|
15	||
20	||
25	||
30	||
35	|

Enter the **interquartile range** of the data set.

Rubric: (1 point) Student enters the correct interquartile range of the data (e.g., 15).

Response Type: Equation/Numeric