



**Mathematics
Grade 6
Scoring Guide for
Released Item #56
Bean Seeds Needed
Fall 2006**



- 56 One ounce of bean seeds is enough to plant a 10-foot row of bean plants. The table below shows how many ounces of seeds are needed for different length rows.

Bean Seeds Needed

Ounces of Seed	Length of Row (feet)
1	10
2	20
3	30
4	40
5	50
6	60
7	70
8	80

Make a line graph of this information. Be sure to title the graph, label the axes, and choose an appropriate scale.

ANSWER THIS ITEM IN YOUR ANSWER DOCUMENT.

SHOW ALL YOUR WORK IN YOUR ANSWER DOCUMENT.

Scoring Rubric

- The student provides an appropriate line graph based on the student's scale. **(1 point)**
- The student plots all data correctly. **(1 point)**
- The student provides appropriate title and labels. The student may omit a unit of measurement on one axis. **(1 point)**
- The student provides appropriate scales and spacing. **(1 point)**

Note: Graphs with a negative slope and graphs other than line graphs score a maximum of **2 points**.

4-point response earns all four of the above points

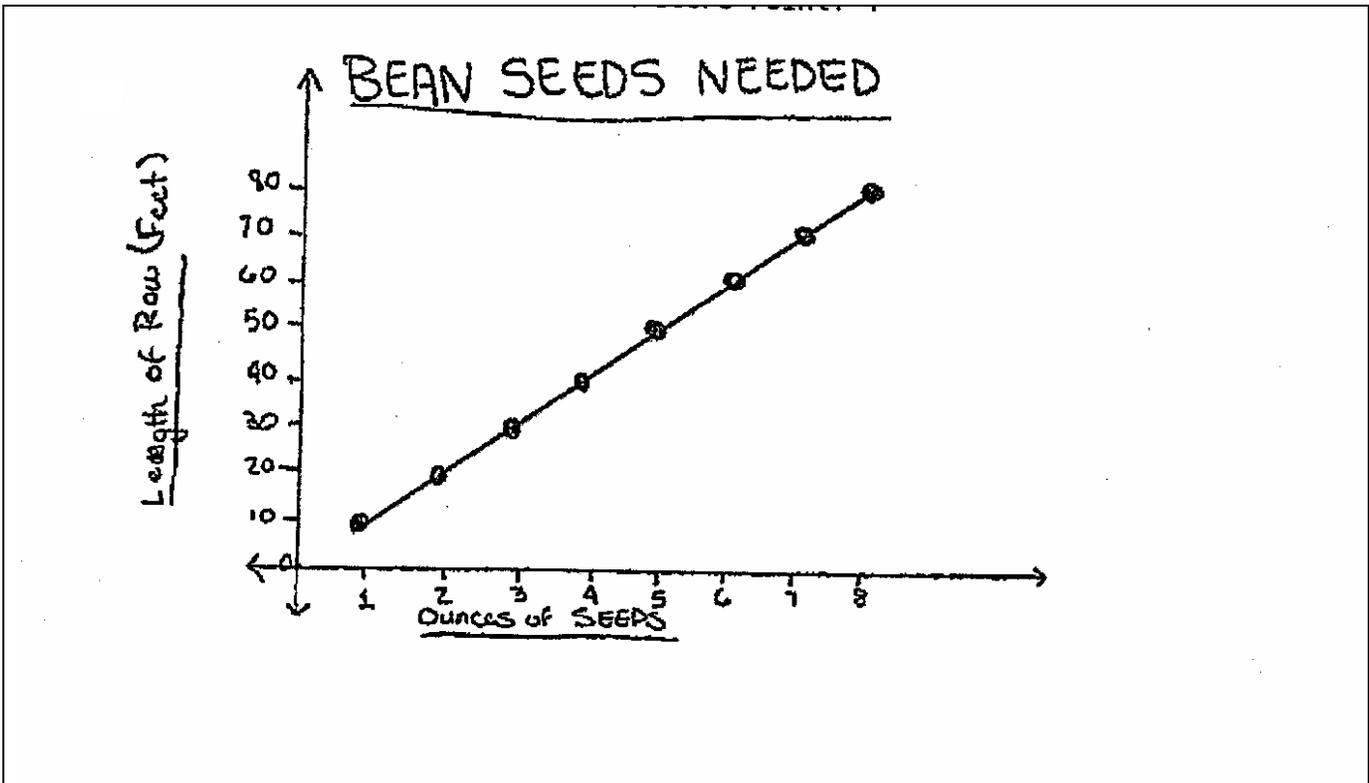
3-point response earns three of the four points

2-point response earns two of the four points

1-point response earns one of the four points

0-point response shows little or no understanding of the item.

Anchor Paper 1 – Score Point 4



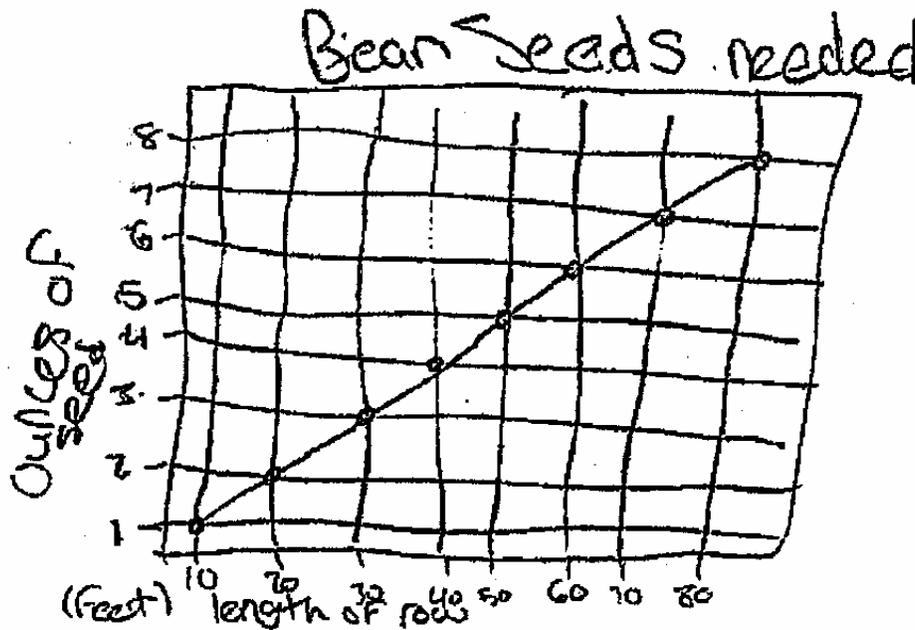
Anchor Paper 1 Score Point 4

The response demonstrates complete understanding of the task of creating a line graph using given data and completing all of the graphing requirements.

- The student provides a correctly constructed line graph based on the student's scale. **(1 point)**
- The student plots all data correctly. **(1 point)**
- The student provides an appropriate title, *Bean Seeds Needed*, and axes' labels, *Length of Row (Feet)* and *Ounces of Seeds*, which include labels and units of measurement. **(1 point)**
- The student provides appropriate scales that increase in even increments and begin at zero. **(1 point)**

The response earns **4 points**.

Anchor Paper 2 – Score Point 4



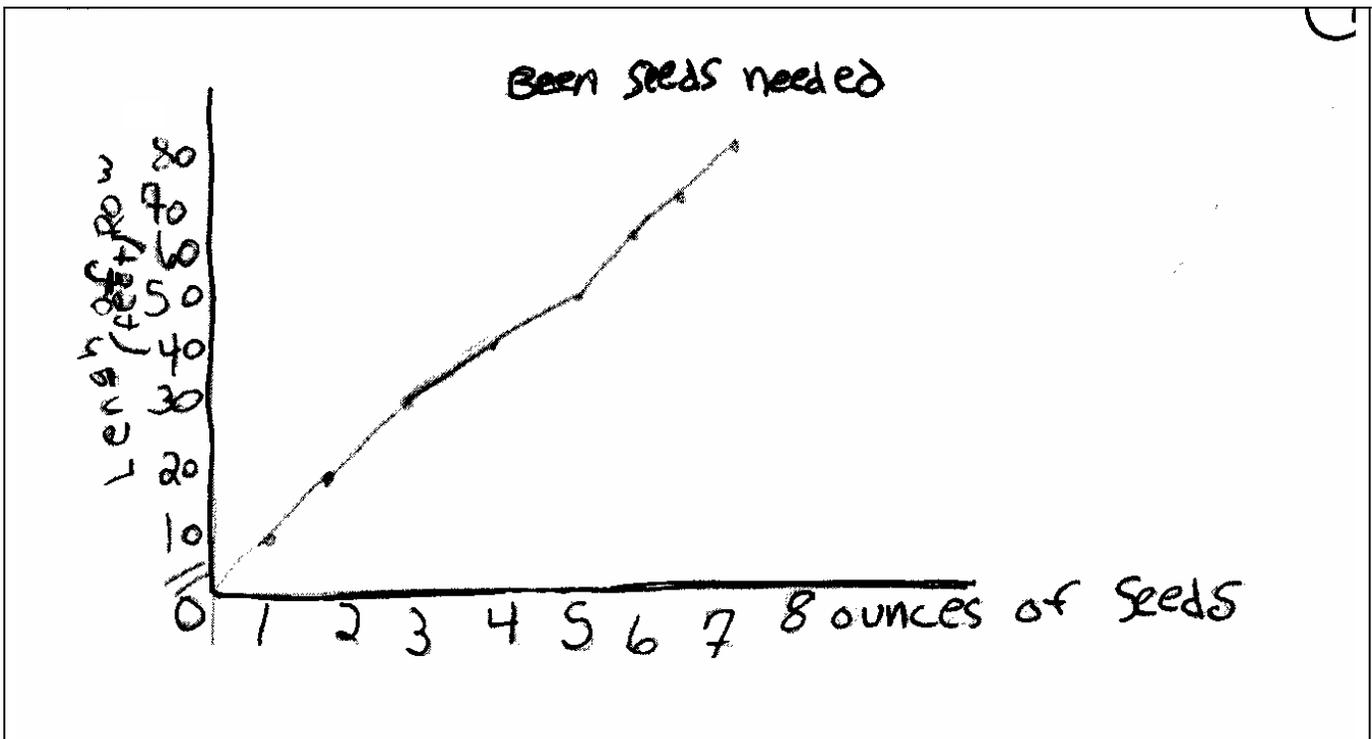
Anchor Paper 2
Score Point 4

The response demonstrates complete understanding of the task of creating a line graph using given data and completing all of the graphing requirements.

- The student provides a correctly constructed line graph based on the student's scale. **(1 point)**
- The student plots all data correctly. **(1 point)**
- The student provides an appropriate title, *Bean Seeds needed*, and axes' labels, *length of row (Feet)* and *Ounces of seed*, which include labels and units of measurement. Reversing the axes is acceptable for this graph. **(1 point)**
- The student provides appropriate scales that increase in even increments and do not begin with zero; however, a space is left for the inclusion of an understood zero. **(1 point)**

The response earns **4 points**.

Anchor Paper 3 – Score Point 4



Anchor Paper 3

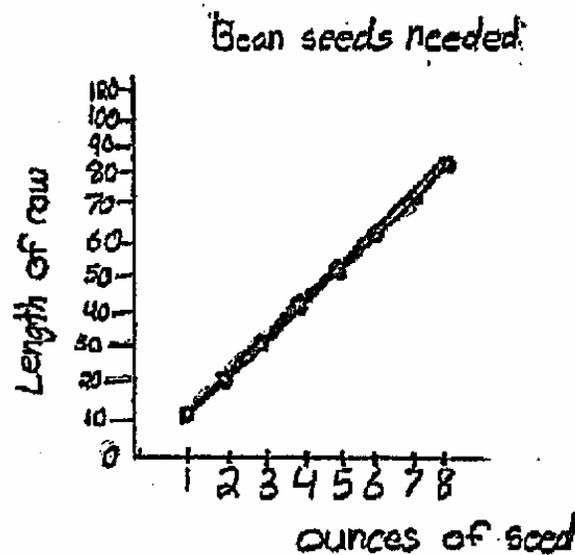
Score Point 4

The response demonstrates complete understanding of the task of creating a line graph using given data and completing all of the graphing requirements.

- The student provides a correctly constructed line graph based on the student's scale. **(1 point)**
- The student plots all data correctly. Graph paper is not provided and the student did not draw grid lines; therefore, the plots are accepted. If the line created is positive and the plotted points are within an area of tolerance which extends to the next number on the given scale, the plots are considered correct (example: ounces 6, 7 and 8 on this graph). Unacceptable plots would line up with the consecutive number, in either direction, on the given scale. **(1 point)**
- The student provides an appropriate title, *Bean Seeds needed*, and axes' labels, *Length of Row (feet)* and *ounces of Seeds*, which include labels and units of measurement. **(1 point)**
- The student provides appropriate scales that increase in even increments and begin at zero. **(1 point)**

The response earns **4 points**.

Anchor Paper 4 – Score Point 3



Anchor Paper 4

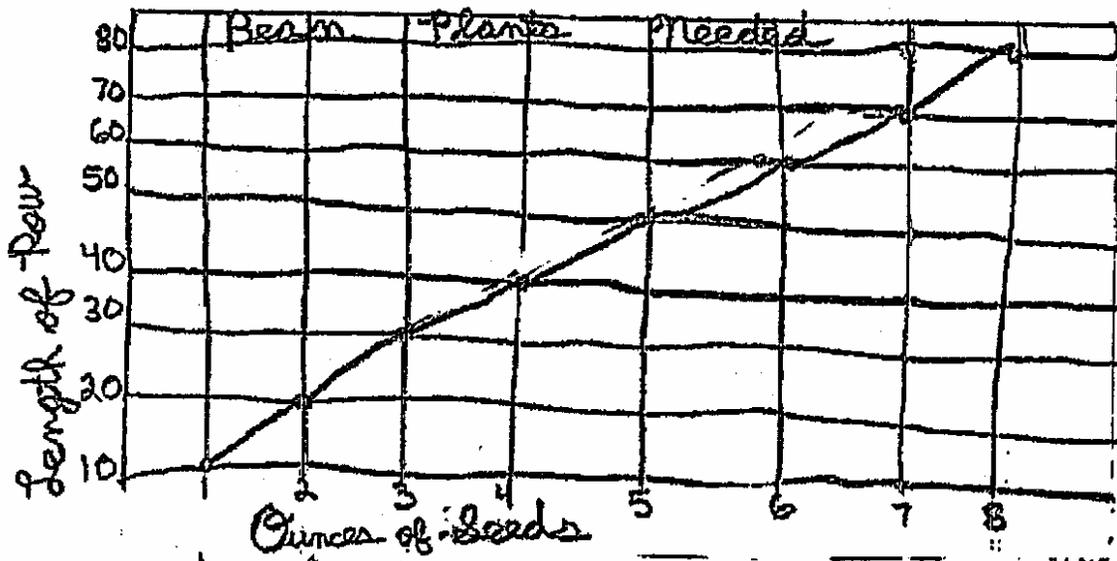
Score Point 3

The response demonstrates understanding of the task of creating a line graph using given data and completing the following graphing requirements.

- The student provides a correctly constructed line graph based on the student's scale. **(1 point)**
- The student plots all data correctly. **(1 point)**
- The student provides an appropriate title, *Bean seeds needed*, and axes' labels, *length of row* and *ounces of seed*. One unit of measurement, feet, is not included on the vertical axis which does not affect earning the point. Reversing the axes is acceptable for this graph. **(1 point)**
- The student provides appropriate scales that increase in even increments beginning with zero; however, on the vertical axis, the scale skips from 100 to 120. **(0 points)**

The response earns **3 points**.

Anchor Paper 5 – Score Point 3



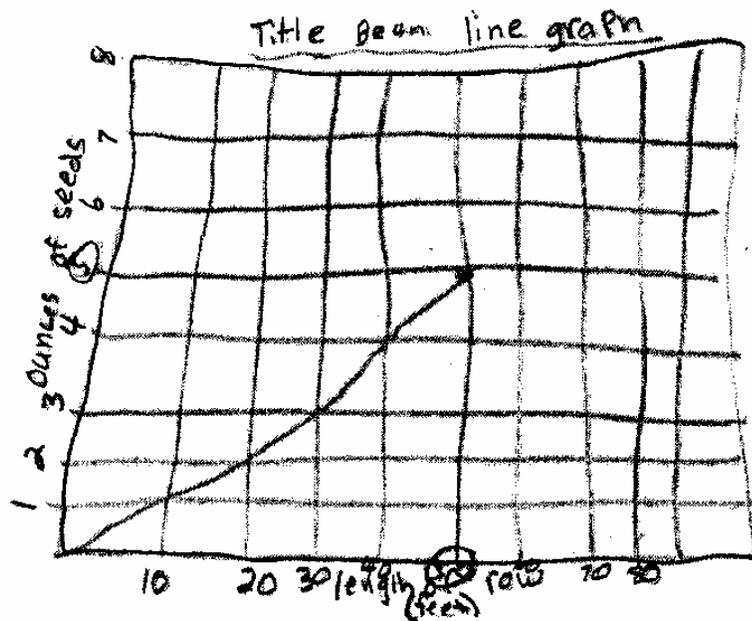
Anchor Paper 5 Score Point 3

The response demonstrates understanding of the task of creating a line graph using given data and completing the following graphing requirements.

- The student provides a correctly constructed line graph based on the student's scale. **(1 point)**
- The student plots all data correctly. **(1 point)**
- The student provides an appropriate title, *Bean Plants Needed*, and axes' labels, *Length of Row* and *Ounces of Seeds*. One unit of measurement, feet, is not included on the vertical axis which does not affect earning the point. **(1 point)**
- The student provides appropriate scales that increase in even increments that begin with an assumed zero on the horizontal axis but do not begin with zero on the vertical axis and leave no room for it's placement. **(0 points)**

The response earns **3 points**.

Anchor Paper 6 – Score Point 3



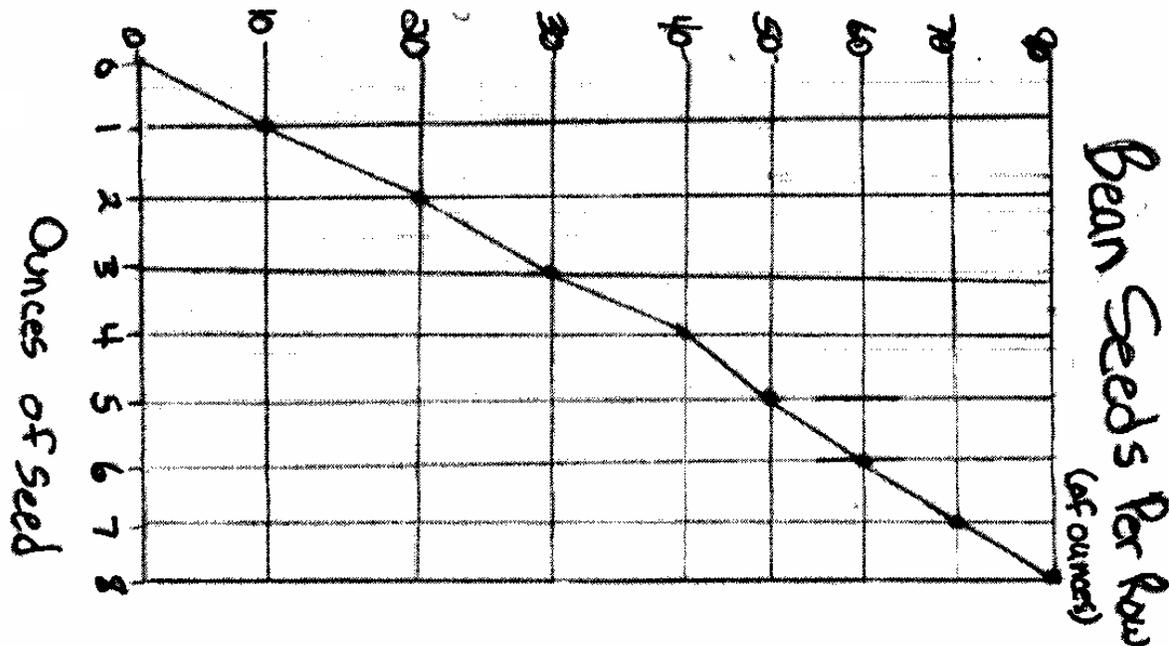
Anchor Paper 6 Score Point 3

The response demonstrates understanding of the task of creating a line graph using given data and completing the following graphing requirements.

- The student provides a correctly constructed line graph based on the student's scale. **(1 point)**
- The student plots data up to (5, 50) correctly but does not plot the last three data points. **(0 points)**
- The student provides an appropriate title, *Bean line graph*, and axes' labels, *length of row (Feet)* and *Ounces of seed*, which include labels and units of measurement. Reversing the axes is acceptable for this graph. **(1 point)**
- The student provides appropriate scales that increase in even increments and do not begin with zero; however, a space is left for the inclusion of an understood zero on both axes. **(1 point)**

The response earns **3 points**.

Anchor Paper 7 – Score Point 3



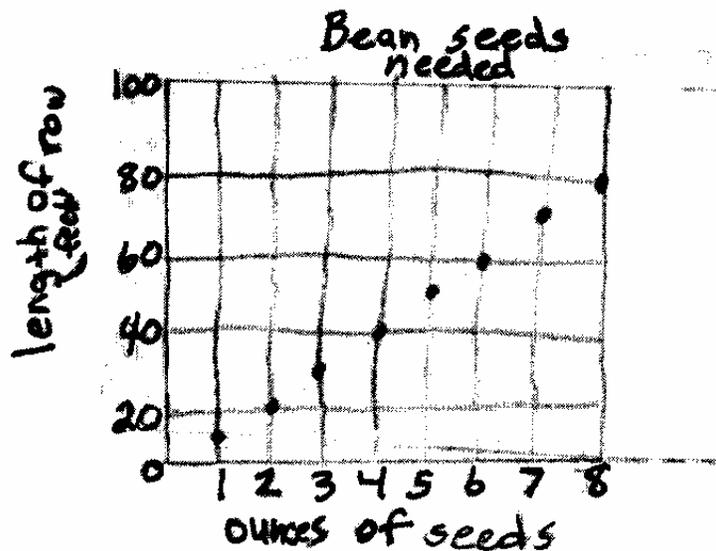
Anchor Paper 7 Score Point 3

The response demonstrates understanding of the task of creating a line graph using given data and completing the following graphing requirements.

- The student provides a correctly constructed line graph based on the student's scale. **(1 point)**
- The student plots all data correctly. **(1 point)**
- The student provides an appropriate title, *Bean Seeds Per Row*, and one axis' label, *Ounces of seed*, on the horizontal axis. The graph has been turned in the answer space making the top of the graph is on the right of the page with the vertical axis label missing. **(0 points)**
- The student provides appropriate scales that increase in even increments and begin with zero. **(1 point)**

The response earns **3 points**.

Anchor Paper 8 – Score Point 2



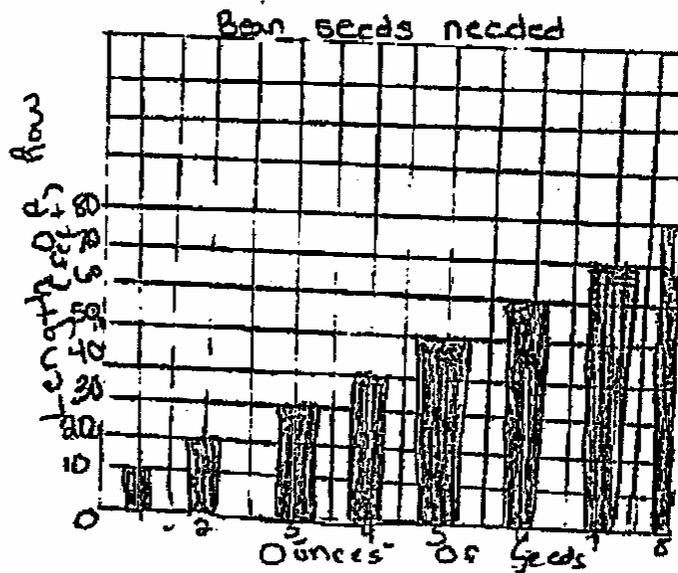
Anchor Paper 8 Score Point 2

The response demonstrates partial understanding of the task of creating a line graph using given data and completing the following graphing requirements.

- The student does not provide a line graph. The points graphed are not connected. **(0 points)**
- The student does not accurately represent the data without a line graph because the data given is actually continuous not discrete. **(0 points)**
- The student provides an appropriate title, *Bean seeds needed*, and axes' labels, *ounces of seeds* and *length of row (Feet)*, which include labels and units of measurement. **(1 point)**
- The student provides appropriate scales that increase in even increments and begin with zero. **(1 point)**

The note in the rubric states that graphs other than line graphs score a maximum of 2 points. The response earns **2 points**.

Anchor Paper 9 – Score Point 2



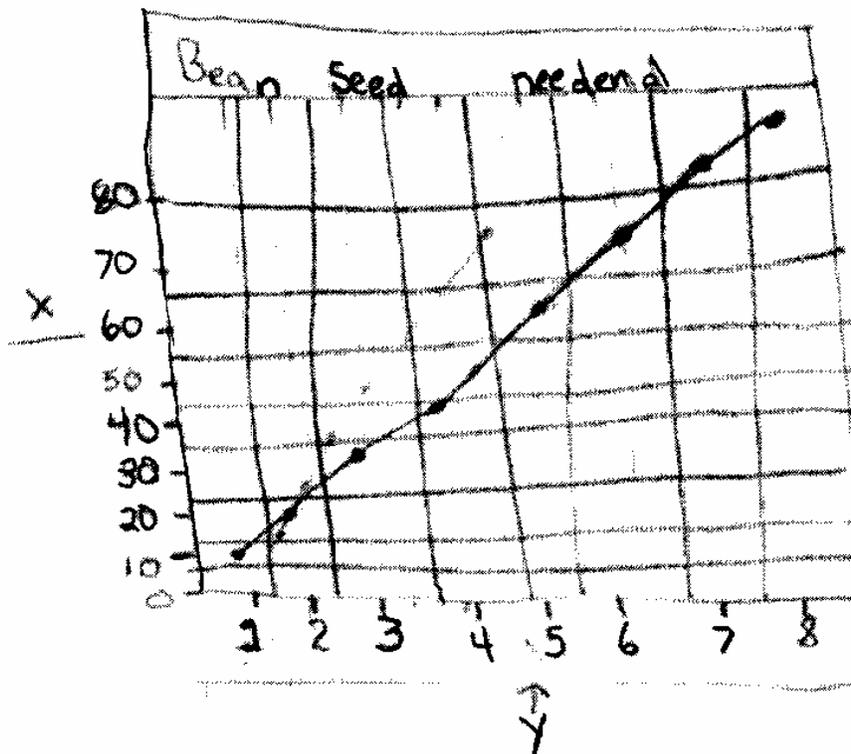
Anchor Paper 9 Score Point 2

The response demonstrates partial understanding of the task of creating a line graph using given data and completing the following graphing requirements.

- The student does not provide a line graph. The points graphed are in a bar graph. **(0 points)**
- The student cannot plot data correctly if a line graph is not used because the data to be plotted is continuous not discrete. **(0 points)**
- The student provides an appropriate title, *Bean seeds needed*, and axes' labels, *ounces of seeds* and *Length of Row (Feet)*, which include labels and units of measurement. **(1 point)**
- The student provides appropriate scales that increase in even increments and begin with zero on both axes. **(1 point)**

The note in the rubric states that graphs other than line graphs score a maximum of 2 points. The response earns **2 points**.

Anchor Paper 10 – Score Point 2



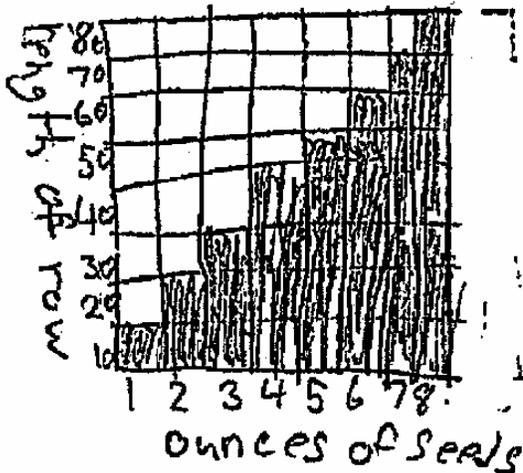
Anchor Paper 10 Score Point 2

The response demonstrates partial understanding of the task of creating a line graph using given data and completing the following graphing requirements.

- The student provides a correctly constructed line graph based on the student's scale. **(1 point)**
- The student plots data up to (4, 40) correctly but 5 ounces through 8 are incorrectly plotted. When grid lines are drawn, the plotting must coincide with the drawn lines to be considered correct. **(0 points)**
- The student provides an appropriate title, *Bean Seed needend*, but does not give correct labels for the axes. **(0 points)**
- The student provides appropriate scales that increase in even increments and begin with zero. **(1 point)**

The response earns **2 points**.

Anchor Paper 11 – Score Point 1



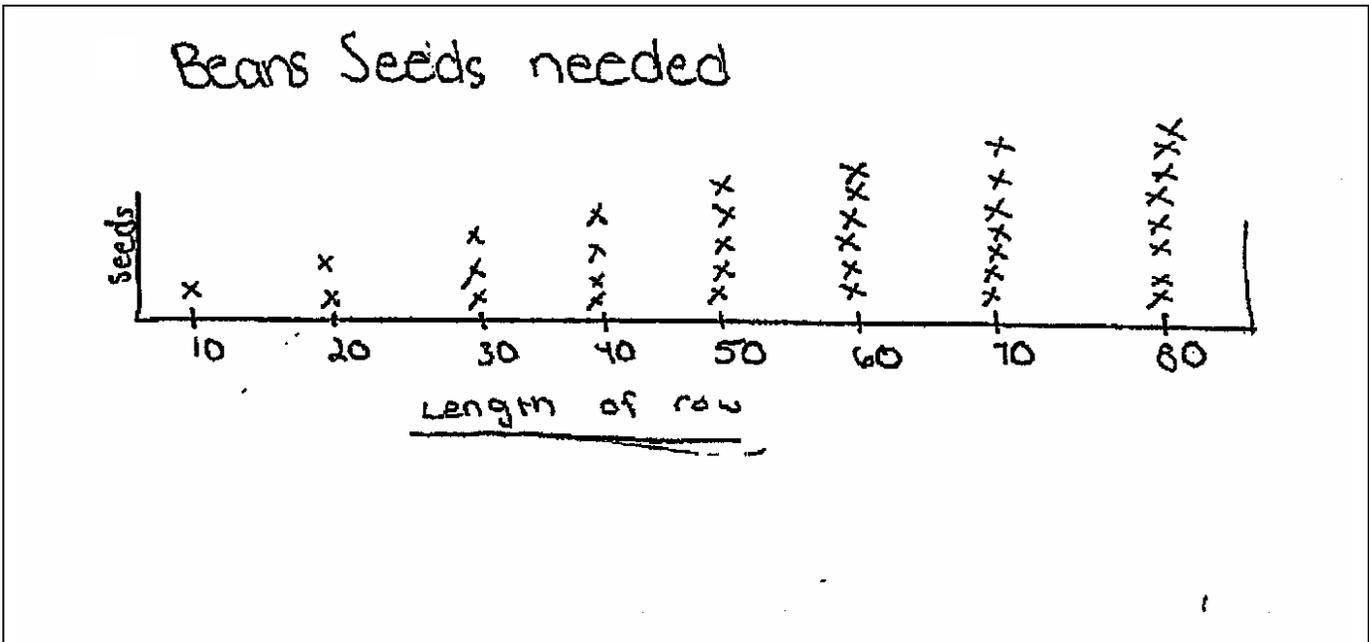
Anchor Paper 11 Score Point 1

The response demonstrates some understanding of the task of creating a line graph using given data and completing the following graphing requirements.

- The student does not provide a line graph. The points are graphed in a bar graph. **(0 points)**
- The student cannot plot data correctly if a line graph is not used because the data to be plotted is continuous not discrete. **(0 points)**
- The student provides no title but does provide acceptable axes' labels, *ounces of seeds* and *Length of row*. The unit of measurement on the vertical axis is missing. **(0 points)**
- The student provides appropriate scales that increase in even increments and begin with a space for a zero, although none is written. The number on the scale represents the top of the grid box on the vertical axis. The scale on the horizontal axis represents the entire box which is acceptable for a bar graph. **(1 point)**

The response earns **1 point**.

Anchor Paper 12 – Score Point 1



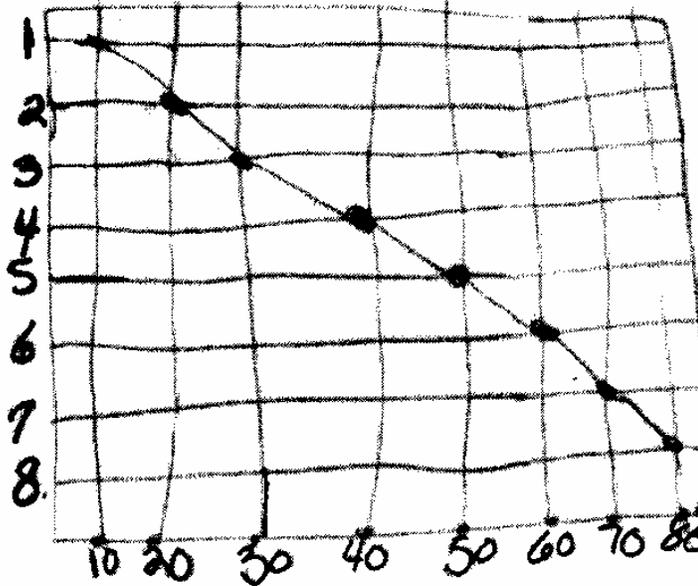
Anchor Paper 12 Score Point 1

The response demonstrates some understanding of the task of creating a line graph using given data and completing the following graphing requirements.

- The student does not provide a line graph. The points are graphed on a line plot. **(0 points)**
- The student cannot plot data correctly if a line graph is not used because the data to be plotted is continuous not discrete. **(0 points)**
- The student provides an appropriate title, *Bean Seeds needed*, but the labels are both missing units of measurement. One unit of measurement can be missing from the labels: if both are missing, credit is not awarded. **(0 points)**
- The student provides appropriate scales that increase in even increments. The default scale on a line plot is to let the x's represent one unit of measurement. This line plot correctly reflects that default. **(1 point)**

The note in the rubric states that graphs other than line graphs score a maximum of 2 points. The response earns **1 point**.

Anchor Paper 13 – Score Point 1



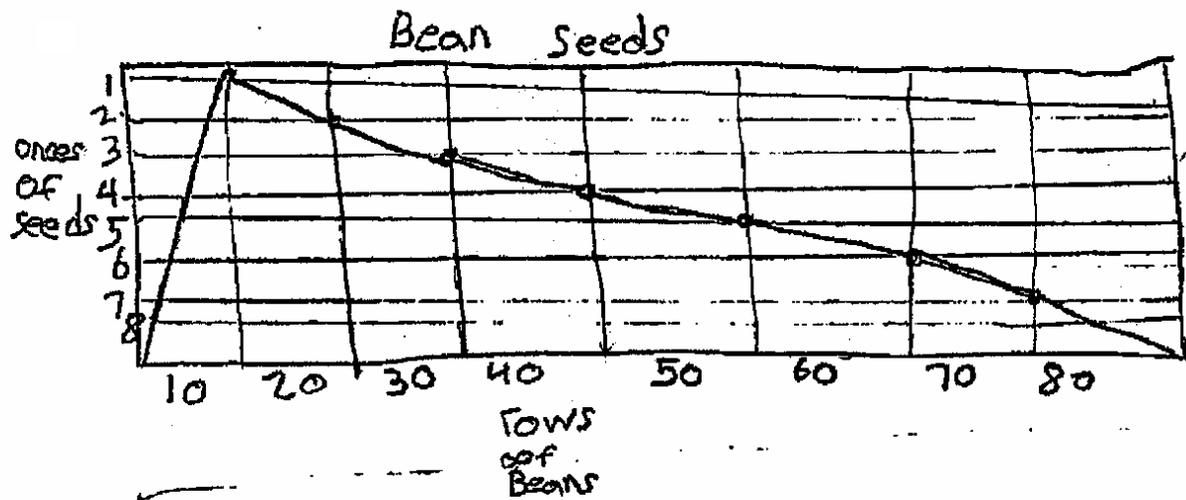
Anchor Paper 13 Score Point 1

The response demonstrates some understanding of the task of creating a line graph using given data and completing the following graphing requirements.

- The student provides a line graph with a negative slope. **(0 points)**
- The student plots all data correctly using their scale, matching the ounces to the length of the row, even though the axes are not labeled. The scales used suffice to indicate what is being plotted. **(1 point)**
- The student provides no title or axes' labels. **(0 points)**
- The student does not provide an appropriate scale on the vertical axis which begins at 8 and goes up to 0. **(0 points)**

The response earns **1 point**.

Anchor Paper 14 – Score Point 0



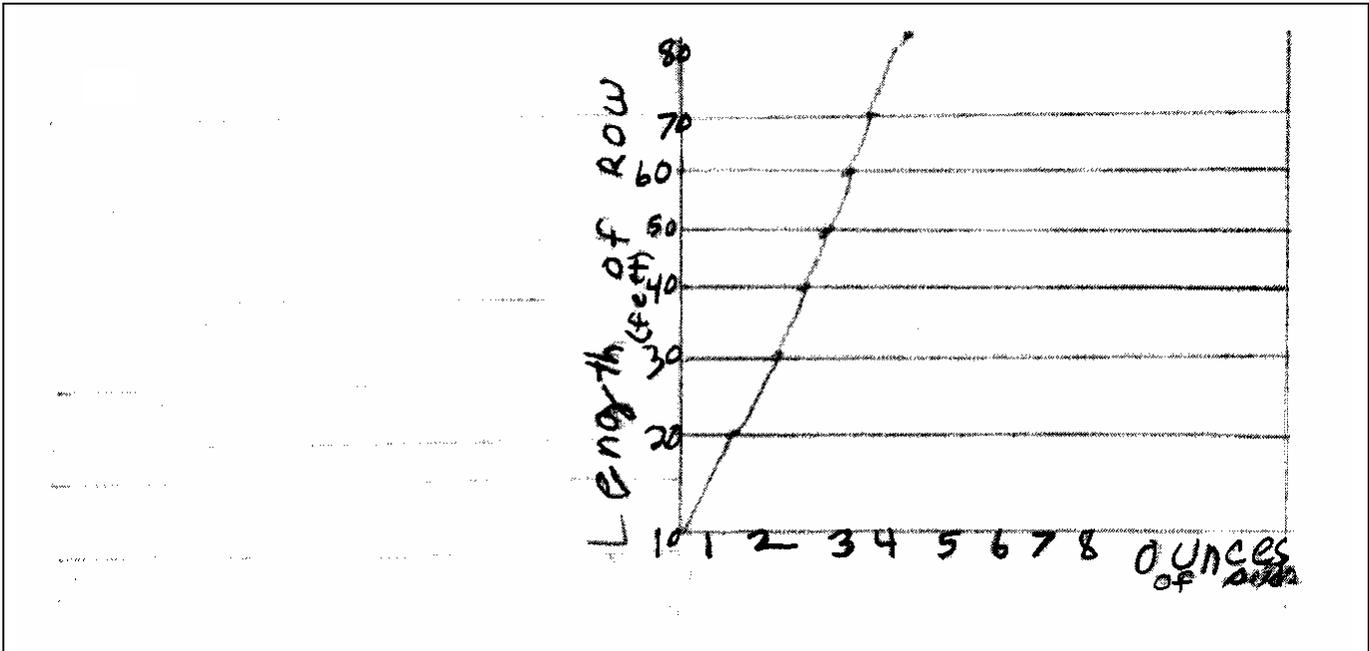
Anchor Paper 14 Score Point 0

The response demonstrates little understanding of the task of creating a line graph using given data.

- The student provides a line graph with a negative slope and a line drawn from the first data point to the point of origin. The line to the point of origin, alone, would have negated the appropriate line graph credit. **(0 points)**
- The student plots data incorrectly. The last point would be at (9, 80) if the line after the space represents the number in the horizontal space. The initial line segment, drawn from the point of origin, incorrectly reflects the data. **(0 points)**
- The student provides a correct title, but the horizontal axis, *rows of Beans*, lacks the recognition of length and measurement. **(0 points)**
- The student does not provide appropriate scales. The scale on the vertical axis begins at 8 and goes up to 0. **(0 points)**

The response earns **0 points**.

Anchor Paper 15 – Score Point 0



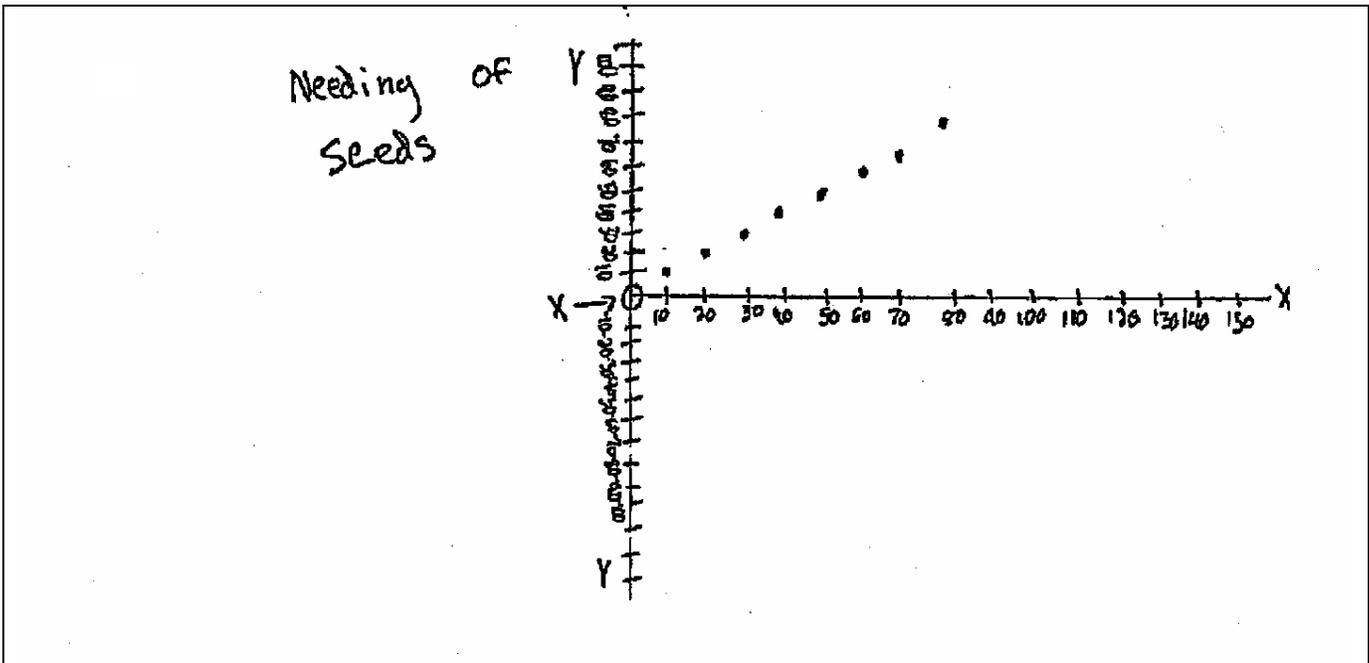
Anchor Paper 15 Score Point 0

The response demonstrates little understanding of the task of creating a line graph using given data.

- The student provides a line graph with a line that does not correspond with the student's scale. **(0 points)**
- The student plots all data incorrectly. **(0 points)**
- The student does not provide a title, but the axes' labels, *Length of row (feet)* and *ounces of seeds* are correct. **(0 points)**
- The student does not provide appropriate scales. The scale on the vertical axis begins at 10 at the point of origin. **(0 points)**

The response earns **0 points**.

Anchor Paper 16 – Score Point 0



Anchor Paper 16
Score Point 0

The response demonstrates little understanding of the task of creating a line graph using given data.

- The student provides a graph with no line. **(0 points)**
- The student cannot earn the plotting credit without drawing a line. **(0 points)**
- The student provides a title, *Needing of Seeds*, but no axes' labels. **(0 points)**
- The student does not provide appropriate scales. The scales on both axes go up in increments of 10 which is inappropriate for the given data. **(0 points)**

The response earns **0 points**.