

CCSS
8.SP.1**Children's Vocabulary**

The tables show the age x (in years) of several children and number of words y in their vocabulary.

Age, x	2	1	4	3	1.5	3	2
Number of vocabulary words, y	200	5	1400	700	15	875	180

Age, x	5	2	4	2.5	3.5	5	1.5
Number of vocabulary words, y	2000	225	1250	350	1000	1800	20

1. Make a scatter plot of the data.
2. Tell whether the data show a *positive*, a *negative*, or *no* relationship. Explain your reasoning.
3. Does the data show a *linear* or *nonlinear* relationship? Explain your reasoning.
4. A $2\frac{1}{2}$ -year old has a vocabulary that consists of 1800 words. Add this information to the scatter plot in Exercise 1. What do you notice?

Common Core State Standard

8.SP.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.

Grading Rubric

Answers	Score
1. Student presents a scatter plot with appropriate points plotted from the table.	1
2. positive; As age increases, the number of vocabulary words increases.	2
3. linear; A line can be drawn on the scatter plot that is close to most of the data points.	2
4. Student presents the scatter plot from Exercise 1 that includes the new data point. It appears to be an outlier.	2
Precision	
1. Student scales the axes appropriately.	1
2. Student interprets the scatter plot and can describe the relationship between the two sets of data.	2
3. Student uses the plotted points to determine if the data show a linear or nonlinear relationship.	1
4. Student adds the new ordered pair to the scatter plot in Exercise 1 and compares it to the other ordered pairs.	2
Total Points	13