

Scatter Story

Plot paired data and read the pattern.

HIGH SCHOOL • HSS-ID.B.6

CCSS.Math.Content.HSS-ID.B.6 "Represent data on two quantitative variables on a scatter plot, and describe how the variables are related."

NAME _____

DATE _____

READ THE PATTERN

A scatter plot places each pair of values as one point, with the input variable on the x-axis and the output variable on the y-axis. Look from left to right: an upward pattern shows a positive association, a downward pattern shows a negative association, and a scattered pattern shows little or no association.

WORKED EXAMPLE

The points are (21,31), (23,35), and (25,39). Describe their relationship.

1. Plot (21,31), (23,35), and (25,39).
2. Read the points from left to right: x increases, and y also increases.
3. The points make a straight upward pattern.

Answer: The data show a positive linear association.

PRACTICE 6 problems

- 1** Plot (0,3), (3,6), (6,9), and (9,12). Describe the relationship.

ANSWER _____

- 2** Plot (1,22), (6,17), (12,7), and (18,0). Is the association positive, negative, or neither?

ANSWER _____

- 3** Plot (1,9), (3,17), (6,7), (9,18), and (12,7). Describe the relationship.

ANSWER _____

- 4** The points (1,1), (3,3), (6,6), (9,9), and (12,20) are on a scatter plot. Which point is an outlier?

ANSWER _____

- 5** Set A has points (1,3), (3,9), (6,18), and (9,27). Set B has points (1,18), (3,7), (6,20), and (9,12). Which set has the stronger positive association?

ANSWER _____

- 6** A student records practice hours and quiz scores: (0,61), (1,68), (3,75), and (6,82). Name the variables and describe the relationship.

ANSWER _____

APPLY IT Show your work

- 1** A student tracks gaming hours and remaining phone battery percentage: (0,100), (1,90), (3,70), and (6,40). Make a scatter plot and describe the relationship.

WORK SPACE

ANSWER _____

- 2** A student on the music team tracks weekly rehearsal hours and performance-rating points: (0,30), (3,45), (6,60), and (9,75). Make a scatter plot, describe the relationship, and predict the rating for 12 rehearsal hours if the pattern continues.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A scatter plot has points (1,55), (3,65), (6,80), (9,95), and (12,50). A student says there is no relationship because the points are not all on the same line. Identify the outlier and explain whether the student is correct.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Plot (0,3), (3,6), (6,9), and (9,12). Describe the relationship.	positive linear association
2	Plot (1,22), (6,17), (12,7), and (18,0). Is the association positive, negative, or neither?	negative association
3	Plot (1,9), (3,17), (6,7), (9,18), and (12,7). Describe the relationship.	little or no association
4	The points (1,1), (3,3), (6,6), (9,9), and (12,20) are on a scatter plot. Which point is an outlier?	(12,20)
5	Set A has points (1,3), (3,9), (6,18), and (9,27). Set B has points (1,18), (3,7), (6,20), and (9,12). Which set has the stronger positive association?	Set A
6	A student records practice hours and quiz scores: (0,61), (1,68), (3,75), and (6,82). Name the variables and describe the relationship.	The variables are practice hours and quiz score. The data show a positive association: as practice hours increase, quiz scores tend to increase.

PART 2 • APPLY IT

- negative linear association; as gaming hours increase, remaining battery percentage decreases** The points make a downward straight-line pattern from left to right. This shows a negative linear association.
- positive linear association; 90 points** The rating rises by 15 points for every 3 additional rehearsal hours. From 9 to 12 hours, add 15 to 75 to get 90.

CHALLENGE

The outlier is (12,50). Ignoring that point, the data show a positive linear association. The student is not correct because four points form an upward line, and one outlier does not erase the overall trend.

Accept equivalent descriptions such as upward trend or positive correlation, and downward trend or negative correlation. For the prediction, accept 90 or 90 points.