

Grade 8 · Scatter Plots and Association · Quiz

Common Core 8.SP.A.1 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

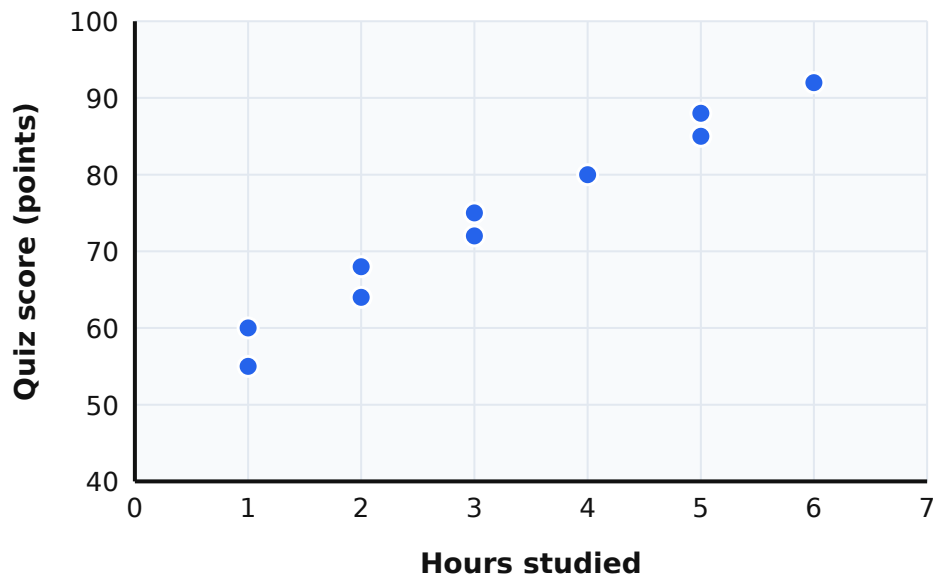
This 10-question quiz checks standard 8.SP.A.1: reading scatter plots, naming positive, negative, linear and nonlinear patterns, and spotting clusters and outliers. Wrong answers match common mistakes, so read each explanation to see why the right answer works.

Grade 8 Common Core: 8.SP.A.1

Questions

Question 1

What association does the scatter plot show?

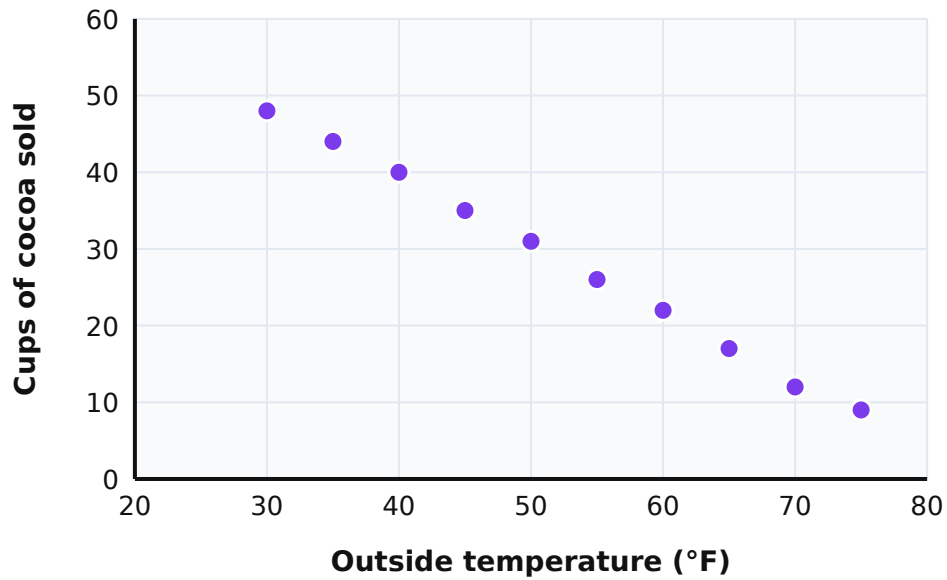


Hours studied and quiz score.

- A. Negative linear association
- B. No association
- C. Nonlinear association
- D. Positive linear association

Question 2

What association does the scatter plot show?

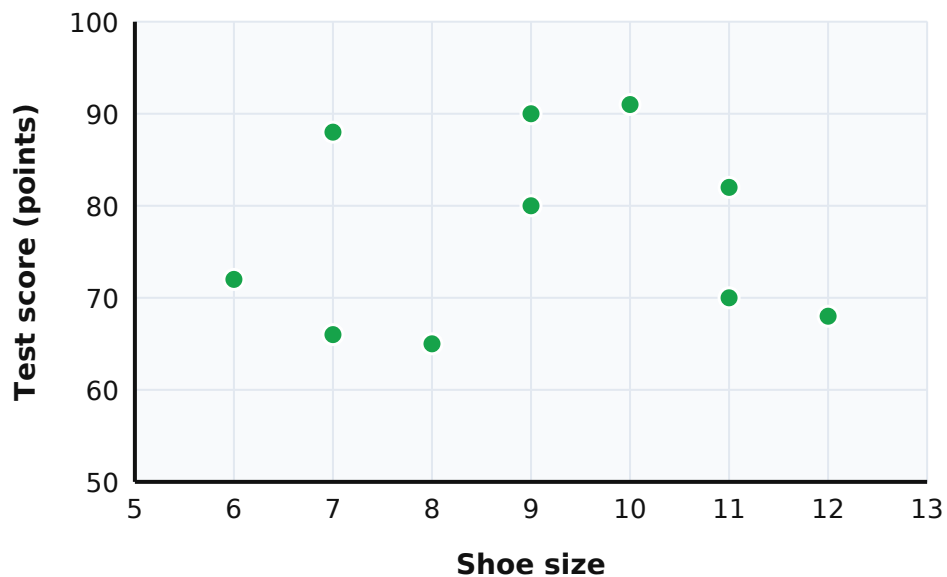


Temperature and cups of cocoa sold.

- A. Negative linear association
- B. Positive linear association
- C. No association
- D. Nonlinear association

Question 3

What association does the scatter plot show?



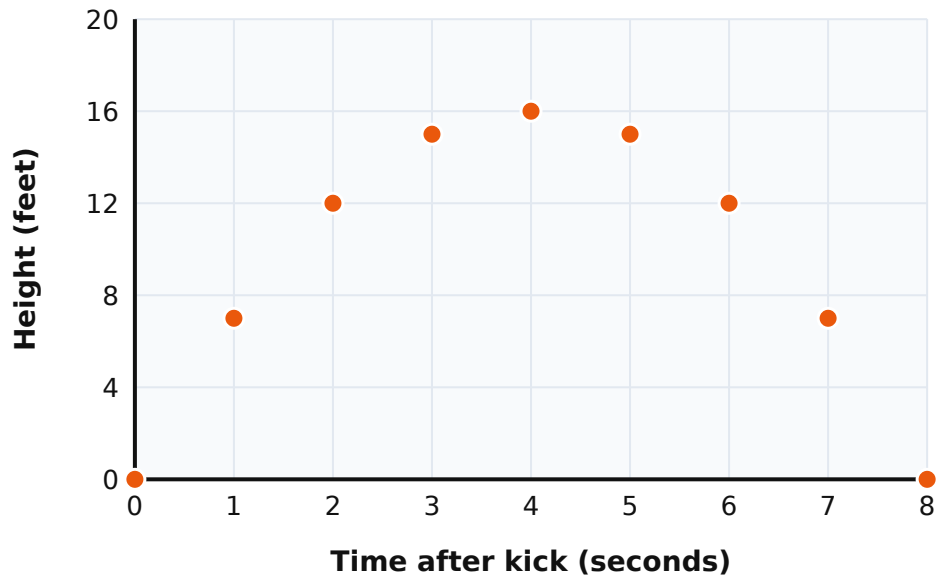
Shoe size and test score.

- A. Positive linear association
- B. No association
- C. Negative linear association

D. Nonlinear association

Question 4

What association does the scatter plot of a kicked ball show?

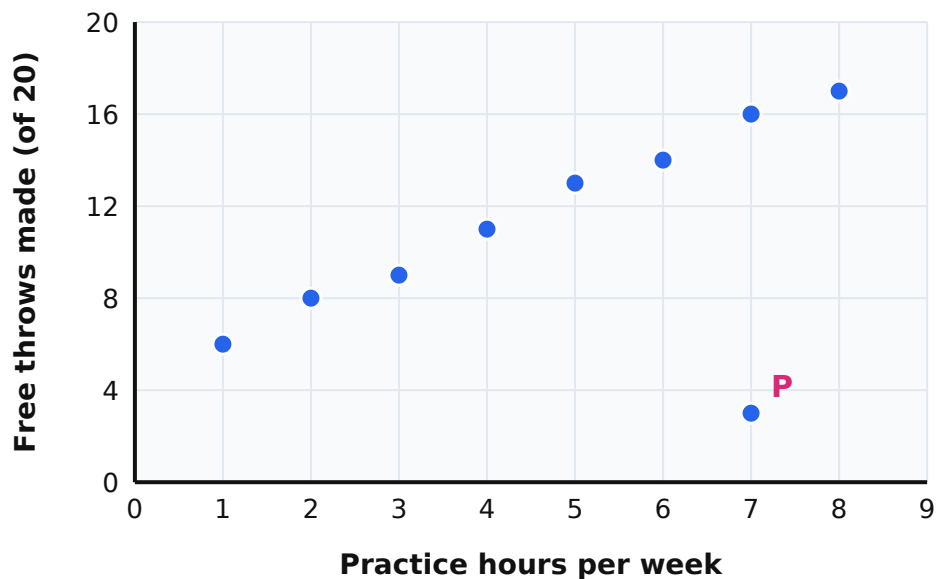


Height of a kicked ball.

- A. Positive linear association
- B. Negative linear association
- C. No association
- D. Nonlinear association

Question 5

Which point is the outlier?



Practice and free throws.

- A. (1, 6)
- B. (8, 17)
- C. (4, 11)
- D. (7, 3)

Question 6

Which pair of variables would most likely show a negative association?

- A. Height and arm span of students
- B. Age and weight of a growing puppy
- C. Miles driven and gas left in the tank
- D. Hours of practice and free throws made

Question 7

A scatter plot has two separate groups of points with a gap between them. What are the groups called?

- A. Outliers
- B. Clusters
- C. Linear patterns
- D. Negative associations

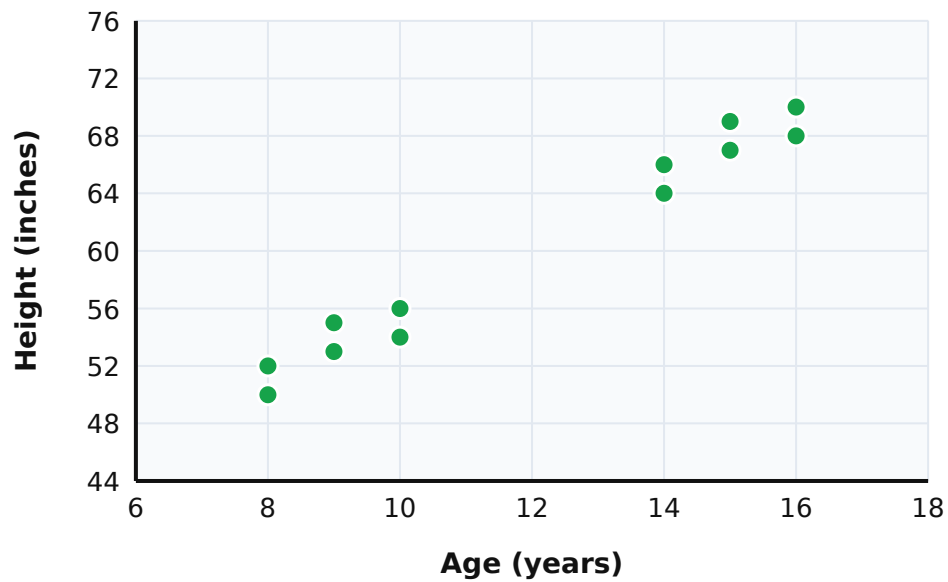
Question 8

What does a positive association between two variables mean?

- A. As one variable increases, the other tends to decrease
- B. As one variable increases, the other tends to increase
- C. One variable causes the other to increase
- D. The points form a perfect straight line

Question 9

How many clusters does the scatter plot show?



Ages and heights of campers.

- A. 1 cluster
- B. 3 clusters
- C. 2 clusters
- D. 12 clusters

Question 10

Which pair of variables would most likely show no association?

- A. A student's shoe size and the day of the month she was born
- B. A car's age and its trade-in value
- C. The temperature and cups of hot cocoa sold
- D. A tree's age and its height

Answer key

1. **D** – The points rise from left to right and stay near a straight line. Reading the plot from right to left gives the opposite, wrong direction.
2. **A** – The points fall from left to right along a line, so as temperature rises, sales drop. That is a negative linear association.
3. **B** – The points are spread out with no direction and no curve, so there is no association.
4. **D** – The points follow a curve that rises and then falls. There is a clear pattern, but it is not a straight line.
5. **D** – The point (7, 3) is far from the rising pattern formed by the other points. (8, 17) is at the end of the pattern, not away from it.
6. **C** – As miles driven increase, the gas left decreases. The other pairs usually increase together, which is positive association.
7. **B** – A group of points close together is a cluster. An outlier is a single point far from the pattern.
8. **B** – Positive association describes a tendency to rise together. It does not prove cause and does not require a perfect line.
9. **C** – One group has ages 8 to 10 and the other has ages 14 to 16. A gap separates them, so there are two clusters.
10. **A** – A birth date has no connection to shoe size, so the points would form a shapeless cloud. The other pairs are related.

Remember:

- Standard 8.SP.A.1: construct and interpret scatter plots for bivariate measurement data.
- Positive association: as x increases, y tends to increase. Negative association: y tends to decrease.
- A linear association stays near a straight line; a nonlinear association follows a curve.
- A cluster is a group of nearby points; an outlier is a point far from the pattern.
- Association does not prove that one variable causes the other.