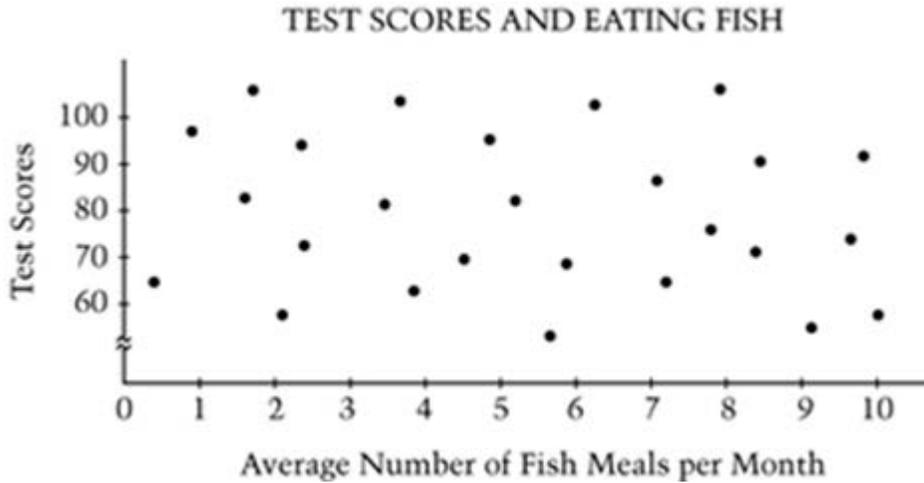


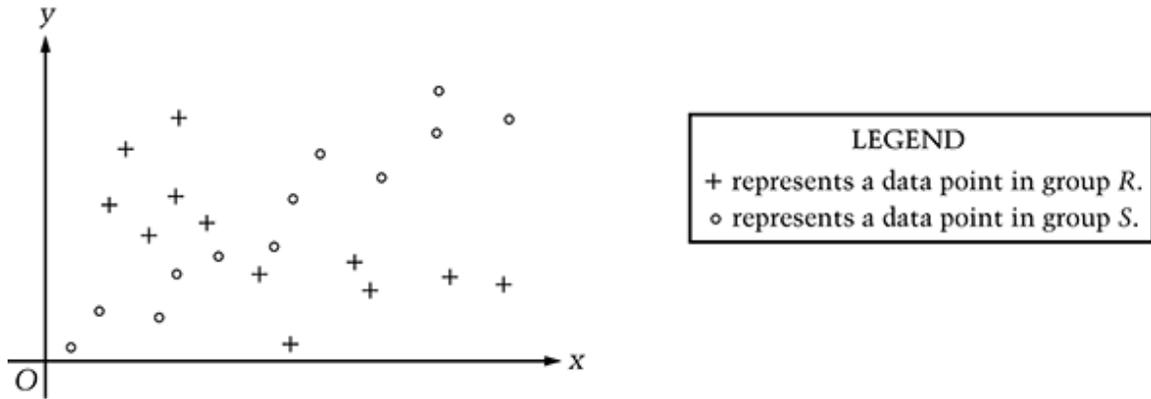
NAEP Released Items Aligned to the Iowa Core

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.



For a science project, Marsha made the scatterplot above that gives the test scores for the students in her math class and the corresponding average number of fish meals per month. According to the scatterplot, what is the relationship between test scores and the average number of fish meals per month?

- A. There appears to be no relationship.
- B. Students who eat fish more often score higher on tests.
- C. Students who eat fish more often score lower on tests.
- D. Students who eat fish 4-6 times per month score higher on tests than those who do not eat fish that often.
- E. Students who eat fish 7 times per month score lower on tests than those who do not eat fish that often.



The scatterplot above shows data for groups *R* and *S*. Which of the following statements is true about the correlation between the *x* and *y* values of group *R* and the correlation between the *x* and *y* values of group *S*?

- A. The *x* and *y* values appear to be negatively correlated in both *R* and *S*.
- B. The *x* and *y* values appear to be positively correlated in both *R* and *S*.
- C. The *x* and *y* values appear to be negatively correlated in *R*, but positively correlated in *S*.
- D. The *x* and *y* values appear to be positively correlated in *R*, but negatively correlated in *S*.
- E. The *x* and *y* values appear to be more highly correlated in *R* than in *S*.

2009-12-7-9

Source: National Assessment of Educational Progress, 2009, Grade 12 Mathematics Assessment.

8.SP.2 Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.

8.SP.3 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.



According to the graph above, how many times did the yearly increase of the price of a hamburger exceed 10 cents?

- F. None
- G. One
- H. Two
- I. Three
- J. Four

2003-8-7-8

Source: National Assessment of Educational Progress, 2003, Grade 8 Mathematics Assessment.

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8.SP.4 Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?