5.6 Fit a Line to Data

TEKS A.1.E, A.2.B, A.2.D, A.5.A

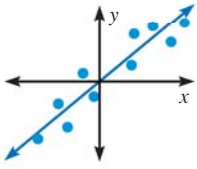
Before You modeled situations involving a constant rate of change.

Now You will make scatter plots and write equations to model data.

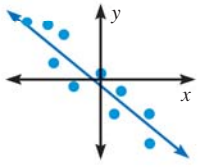
Why? So you can model scientific data, as in Ex. 19.

Key Vocabulary
- **scatter plot**
- **correlation**
- **line of fit**

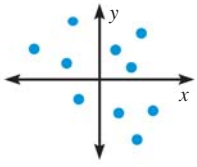
A **scatter plot** is a graph used to determine whether there is a relationship between paired data. Scatter plots can show trends in the data.



If y tends to increase as x increases, the paired data are said to have a **positive correlation**.



If y tends to decrease as x increases, the paired data are said to have a **negative correlation**.

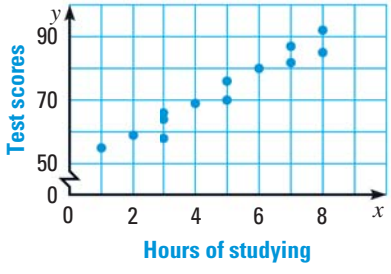


If x and y have no apparent relationship, the paired data are said to have **relatively no correlation**.

EXAMPLE 1 Describe the correlation of data

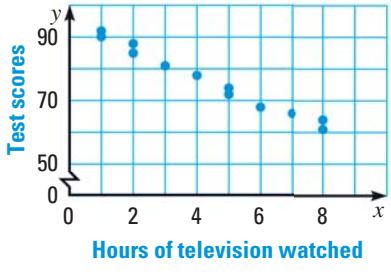
Describe **the correlation of the data graphed in the scatter plot.**

a.



a. The scatter plot shows a positive correlation between hours of studying and test scores. This means that as the hours of studying increased, the test scores tended to increase.

b.



b. The scatter plot shows a negative correlation between hours of television watched and test scores. This means that as the hours of television watched increased, the test scores tended to decrease.

✓ GUIDED PRACTICE for Example 1

1. Using the scatter plots in Example 1, predict a reasonable test score for 4.5 hours of studying and 4.5 hours of television watched.