10.2 Modeling Linear Association Day 1

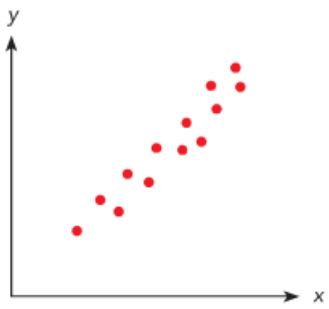
TSW
- Understand line of best fit.
- Write a linear equation for a line of best fit.
- Use and equation for a line of best fit

Vocabulary

Line of best fit-

Understand a Line of Best Fit.

Consider a scatter plot with a strong linear association shown in a set of bivariate data. In order to describe the association quantitatively, you can estimate a line of best fit for the scatter plot. A line of best fit closely follows the linear pattern of the data points.



Caution

The line of best fit is **not** the line that connects the most or all points. Also, it does not have to cut through the first and last points of the given data.

STEP 1 Plot the points.

STEP 2 Use a ruler to divide the points equally into two sets, ignoring the outliers. About half of the data points should be above the line and about half of the data points should be below the line. It is possible to have some points lying on the ruler line.

STEP 3 Select two points that your line of best fit goes through, and use them to draw a line through the data points.

Example 4 **Graph a line of best fit given bivariate data with a linear association.**

Data from a study of the association between the amount of rainfall, x inches, and the number of car accidents, y, along a particular stretch of highway are shown below.

Rainfall (in.)	2	3	4	6	6	5	4	7	8
Accidents	3	8	9	12	11	9	7	14	16

Rainfall (in.)	6	7	2	8	5	3	4	8	7
Accidents	1	15	6	17	10	6	8	14	13

a) Construct the scatter plot and draw a line of best fit to represent the data. Use 1 centimeter on the horizontal axis to represent 1 inch. Use 1 centimeter on the vertical axis to represent 2 car accidents.

Use Decimal Grid Paper

Teacher Resource Tools

TRT10 Decimal Grid Paper