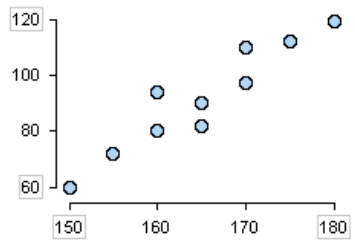
Learning Goal: Use a scatterplot to display the relationship between two quantitative variables. Describe the overall pattern and striking deviations from the pattern.

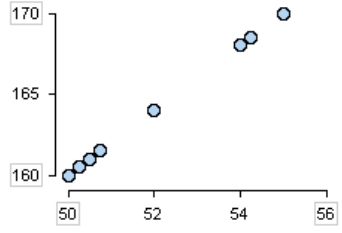
Learning Objective: Use r to describe strength and direction for a linear relationship.

Our goal in this activity is to look for patterns to try to figure out what the correlation r measures. *Label each scatterplot with its correlation coefficient given below. The correlation coefficient is also called the r-value. Look at how the r-value relates to the trends in the scatterplots to answer the questions on the next page.*

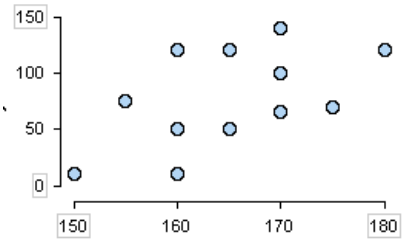
Scatterplot 1



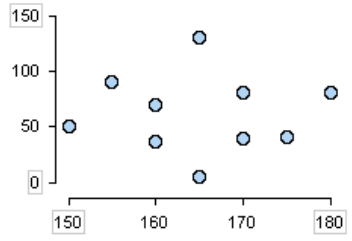
Scatterplot 2



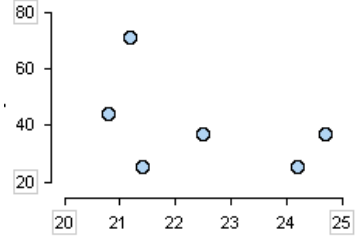
Scatterplot 3



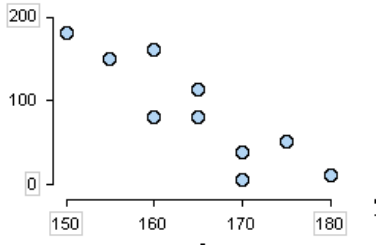
Scatterplot 4



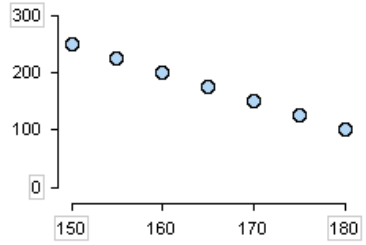
Scatterplot 5



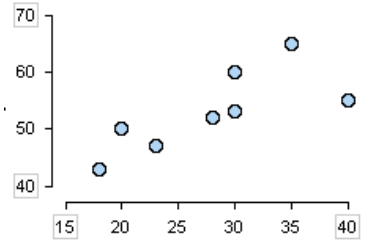
Scatterplot 6



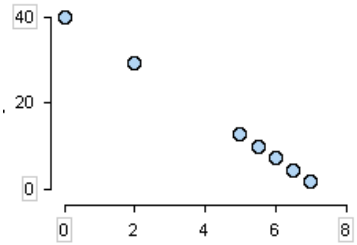
Scatterplot 7



Scatterplot 8



Scatterplot 9



Scatterplot	1	2	3	4	5	6	7	8	9
Correlation coefficient (r-value)	0.94	1	0.55	0.01	-0.44	-0.88	-1	0.75	-1

1) Which of the nine scatterplots show a positive association between x and y?

   A negative association? No association?

2) Look for patterns by comparing scatterplots and r-values. How does the value of r seem to be related to the patterns you see in the scatterplots? Be specific.

3) Prepare for the class discussion by answering the following questions.
   a) What does the correlation coefficient r tell us about the scatterplot?

   b) Is there a largest possible value for r or can it have larger and larger values without limit? What makes you think so?

   c) Is there a smallest possible value for r or can it have smaller and smaller values without limit? What makes you think so?