

# SCATTERED ABOUT

*Students analyze and explain the correlation of data in different scatter plots.*

## TEACHER NOTES FOR DISCUSSION

Begin by having the students look at different graphs. Talk about the type information that can be given in the form of a graph.

## RELATED STANDARDS AND BENCHMARKS

National Council of Teachers of Mathematics. *Curriculum and Evaluation Standards for School Mathematics*. <[http://standards-e.nctm.org/1.0/normal/standards/intr\\_MAIN.html](http://standards-e.nctm.org/1.0/normal/standards/intr_MAIN.html)>, March 16, 2000.

**Standard 6: Problem Solving**

**Standard 8: Communication**

**Standard 7: Reasoning and Proof**

**Standard 2: Patterns, Functions, and Algebra**

## Objective

By the end of this activity, students will be able to use scatter plots to describe relationships between variables and to draw conclusions.

## Time Considerations

Instructor preparation:  
30 minutes

Student activity:  
one or two classes

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## UNDERSTAND YOUR MISSION

Study the scatter plots. By the end of this activity, you should be able describe any relationships you find between the x-axis and y-axis.

### LEARN THE LINGO

correlation	a relationship between two or more pieces of information that probably does not exist on chance alone
scatter plot	a graph that displays data and shows whether or not the data has strong, moderate, weak, or no correlation
variables	something that assumes a set of values (getting to school on time has many variables: alarm clock working, transportation, knowing where you're going...)
x-axis	a line on a graph that runs horizontally
y-axis	a line on a graph that runs vertically



### Gather Your Supplies

- paper
- pencil

### Go Beyond

Gather data on of the following topics or one of your own:

- a person's height and arm span
- number of people per household and number of phones per household
- number of blocks from school and amount of time it takes to get to school
- a person's head circumference and ankle circumference

Make a scatter plot from your data and describe the relationship you find.

## BACKGROUND

A scatter plot is used to show relationships between two variables. The points on a scatter plot look like a "cloud" of points. When there is a strong relationship between two variables, the points resemble a line. This makes the scatter plot linear. If the points appear as a straight line, there is a strong correlation between the two variables. If the points are close to a straight line, there is a moderate correlation. If the points are farther apart and still resemble a line, there is a weak correlation. If the points are scattered all over, there is usually not a correlation.

## CHART A COURSE FOR EXPLORATION

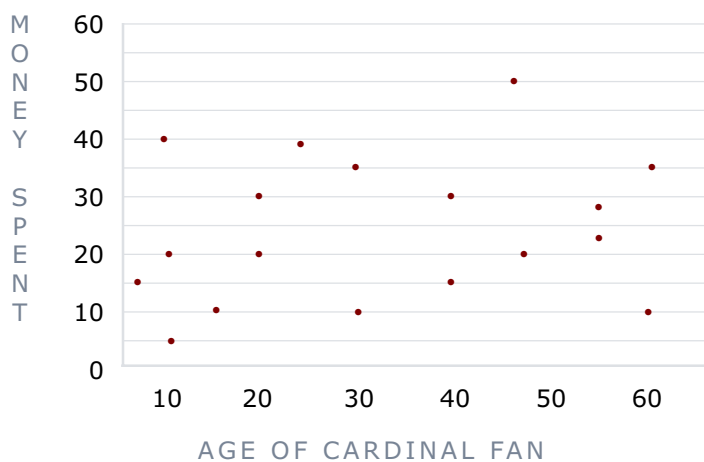
The following pages contain scatter plots depicting Mississippi River data. Use the information from the scatter plots to find relationships in the data.

1. Describe the relationship between the variables in each of the following scatter plots.
2. When the points on a scatter plot resemble a line, what does this tell you?
3. Explain how a scatter plot can help you find relationships in data.
4. Do any of these scatter plots show no correlation? Why?
5. Which of the scatter plots show a strong, moderate, or weak correlation? Explain.
6. What do you think is meant by the phrase "negative correlation?" Do any of these scatter plots show a negative correlation? Why?

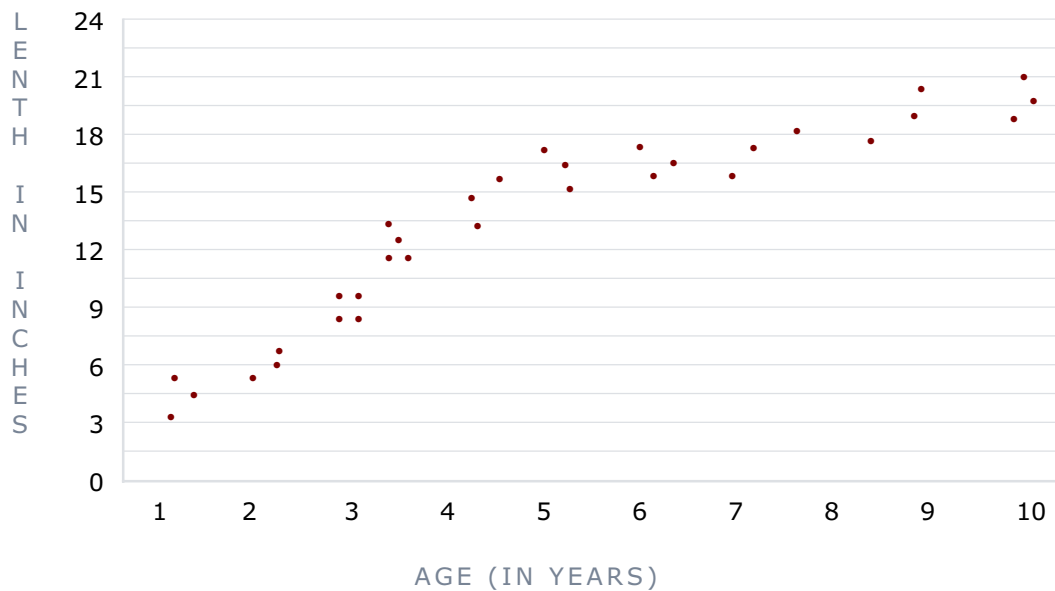


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MONEY SPENT AT CARDINALS GAME ON FOOD AND SOUVENIRS

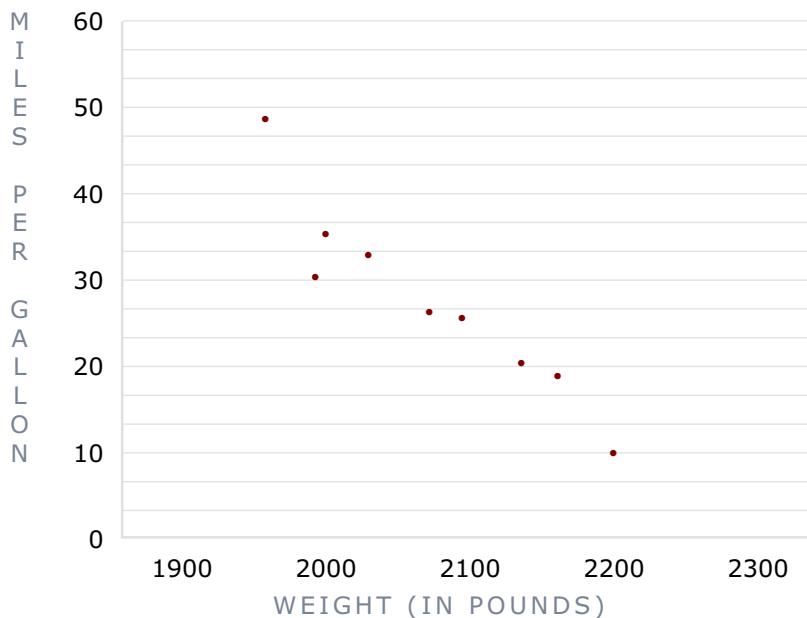


CHANNEL CATFISH IN THE MISSISSIPPI RIVER

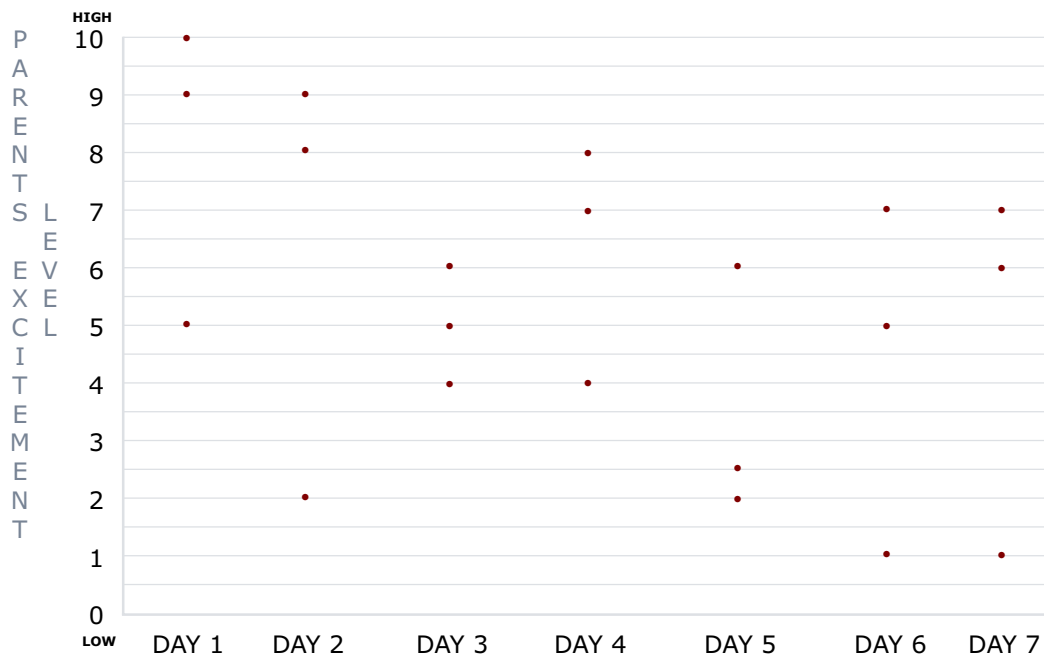


# SCATTERED ABOUT

VEHICLE FUEL ECONOMY



PARENTS' EXCITEMENT LEVEL DURING VACATION



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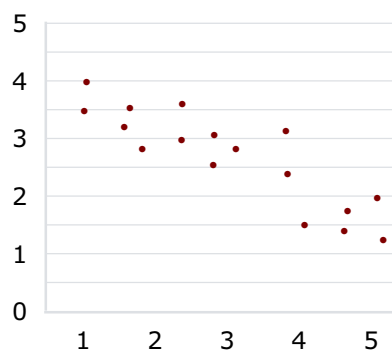
Study the scatter plots below. Decide if there is a correlation or not. If there is, indicate if it is strong, moderate, or weak.

What data could be represented by each scatter plot? Explain your reasoning.

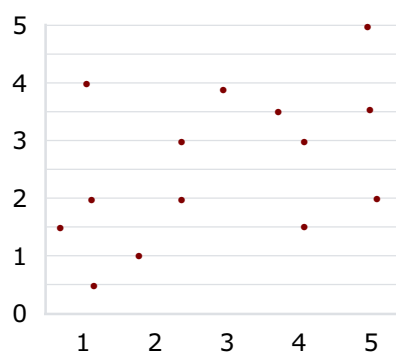
## REFERENCES

———. Mathematics in Context. Encyclopedia Britannica Educational Corporation, 1998.

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