

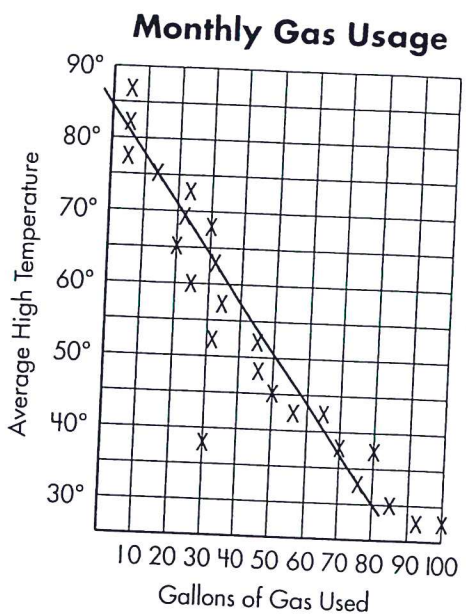
Lesson 6.5 Scattergrams

A **scattergram** is a graph that shows the relationship between two sets of data. To see the relationship clearly, a **line of best fit** can be drawn. This is drawn so that there are about the same number of data points above and below the line.

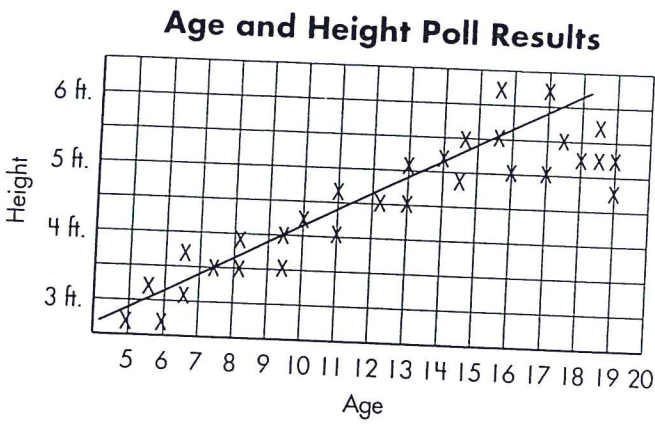
This scattergram shows the relationship between average high temperature and a family's gas use for heating fuel each month.

Is there a **positive** or **negative** relationship between gas use and temperature? As temperature increases, gas use decreases. So, the relationship is negative.

Look for the **outlier**, a data point that does not conform to the general trend. What is a reasonable explanation for this outlier? If gas use was low on one occasion even though temperature was low, perhaps the family was away for part of that month.

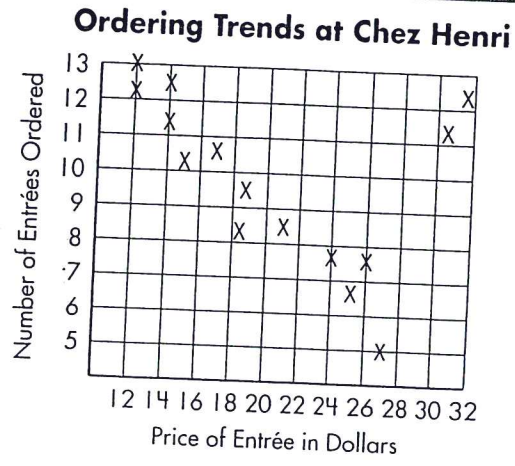


Answer the questions by interpreting data from the scattergrams.



- Which two sets of data are being compared by this scattergram? _____
- Is the correlation positive or negative? _____
- How many people were polled? _____
- How do you explain the data points at the end that do not follow the line of best fit? _____

- Which two pieces of data are being compared by this scattergram? _____
- Draw the line of best fit. Is the correlation positive or negative? _____
- There are a few outliers for this scattergram. What do they show? _____
- What is a possible explanation? _____



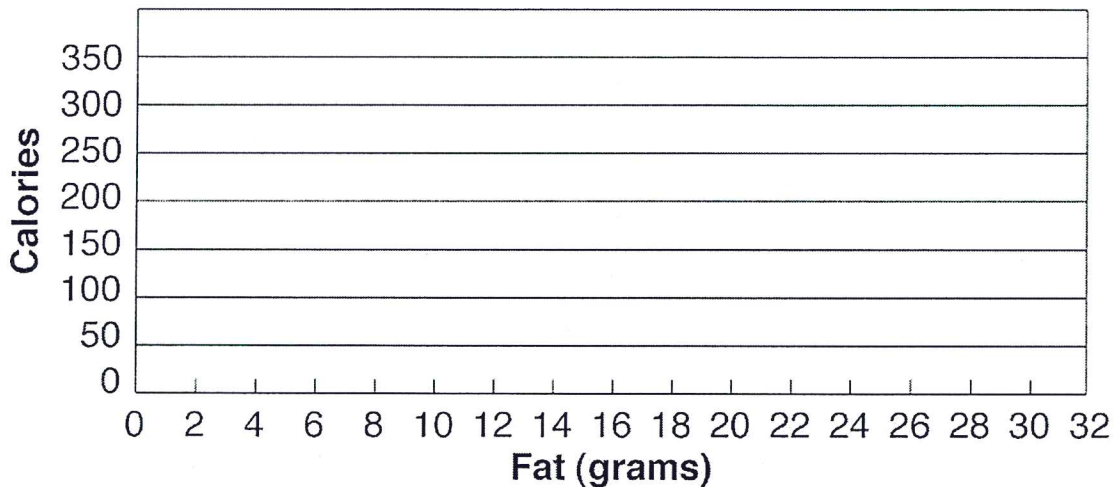
Scatter Plots

1. Use the given data to make a scatter plot.

Calories and Fat Per Portion of Meat & Fish

| | Fat (grams) | Calories |
|--------------------------------|-------------|----------|
| Fish sticks (breaded) | 3 | 50 |
| Shrimp (fried) | 9 | 190 |
| Tuna (canned in oil) | 7 | 170 |
| Ground beef (broiled) | 10 | 185 |
| Roast beef (relatively lean) | 7 | 165 |
| Ham (light cure, lean and fat) | 19 | 245 |

Calories and Fat Per Portion of Meat and Fish



Do the data sets have a positive, a negative, or no correlation?

2. The size of the bag of popcorn and the price of the popcorn
3. The increase in temperature and number of snowboards sold

4. Use the data to predict how much money Tyler would be paid for babysitting $7\frac{1}{2}$ hours.

Amount Tyler Earns Babysitting

| | | | | | | | | |
|---------------|-----|-----|------|------|------|------|------|------|
| Hours | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Amount | \$4 | \$8 | \$12 | \$16 | \$20 | \$24 | \$28 | \$32 |

According to the data, Tyler would get paid \$ ____ for babysitting $7\frac{1}{2}$ hours.

LESSON
10-2 **Review for Mastery**
Frequency and Histograms

A stem-and-leaf plot arranges data by dividing each data value into two parts: a leaf (the last digit), and a stem (the digit or digits other than the last digit).

The amount of money collected by each student for the drama club is shown below. Use the data to make a stem-and-leaf plot.

55, 82, 90, 113, 100, 90, 93, 68, 66,
108, 116, 56, 85, 89, 102, 103

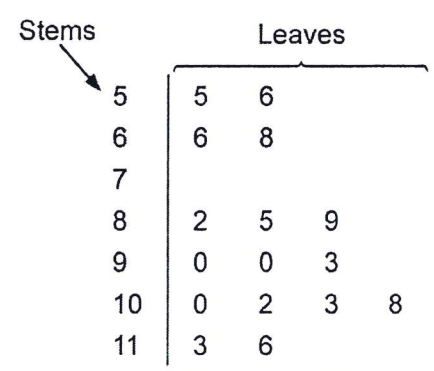
Step 1: List the stems.

The least value is 55, the greatest value is 116.
List stems from 5 to 11. Do not omit any stems.

Step 2: List the leaves.

For each stem, write the ones digit from least to greatest.

Step 3: Write a key explaining one value.



Key: 8|2 means 82

The test scores from two different math classes are shown below. Use the data to make a back-to-back stem-and-leaf plot.

Class A: 50, 68, 95, 80, 92, 100, 98, 85, 82, 81
Class B: 75, 81, 100, 63, 52, 94, 100, 100, 87, 99

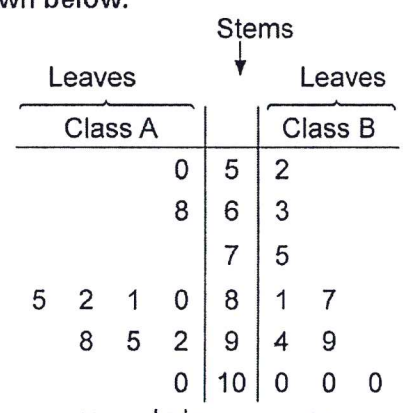
Step 1: List the stems.

The lowest value is 50, the highest value is 100. List stems from 5 to 10. Do not omit any stems.

Step 2: List the leaves.

For each stem, write the ones digit from least to greatest.

Step 3: Write a key explaining one value from each side.



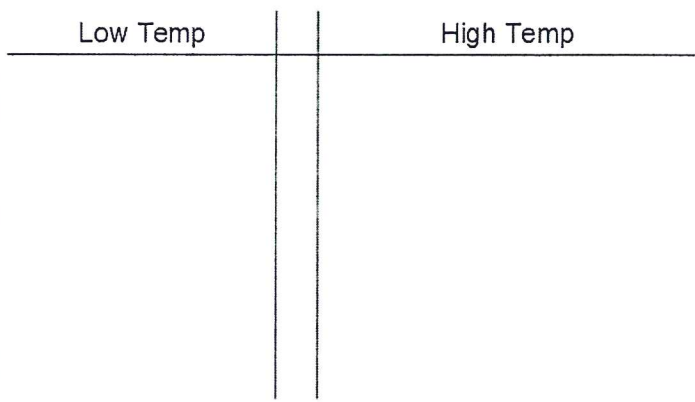
Key: |8|1 means 81

5|9| means 95

1. The daily low temperatures in degrees Fahrenheit in a town in the Northeast are given below. Use the data to make a back-to-back stem-and-leaf plot.

| Daily Low Temperatures (°F) | | | | | |
|-----------------------------|----|----|----|----|----|
| 40 | 56 | 50 | 60 | 62 | 63 |
| 49 | 48 | 49 | 40 | 36 | 59 |
| 57 | 52 | 53 | 42 | 44 | 39 |

| Daily High Temperatures (°F) | | | | | |
|------------------------------|----|----|----|----|----|
| 70 | 84 | 71 | 73 | 71 | 70 |
| 73 | 78 | 76 | 65 | 65 | 67 |
| 66 | 76 | 69 | 70 | 70 | 58 |



LESSON
13.7 **Practice**
*For use with pages 881–886***Give two possible keys for the stem-and-leaf plot.**

1.

| | |
|---|---------|
| 4 | 1 1 5 |
| 5 | 0 2 7 8 |
| 6 | 3 9 |
| 7 | 4 5 6 9 |
| 8 | 0 1 3 |

2.

| | |
|---|-----------|
| 0 | 0 2 3 8 9 |
| 1 | 0 2 5 5 8 |
| 2 | 4 6 8 |
| 3 | 3 3 4 5 |
| 4 | 6 7 |

Make a stem-and-leaf plot of the data.

3. 21, 10, 14, 26, 8, 30, 17, 15, 34, 27,
36, 20, 7, 19, 25, 33, 19, 32, 12, 25

4. 52, 66, 61, 82, 51, 60, 62, 54, 73, 70,
89, 85, 74, 53, 61, 75, 89, 85, 77, 55

5. 3, 5, 11, 34, 28, 19, 4, 6, 14, 17, 22, 30,
1, 1, 9, 10, 24, 27, 33, 20, 9, 4

6. 0.1, 3.6, 2.2, 1.0, 2.1, 1.1, 0.2, 3.5,
3.1, 2.4, 0.3, 1.5, 2.3, 0.5, 1.2