Name: _____ Date: _____
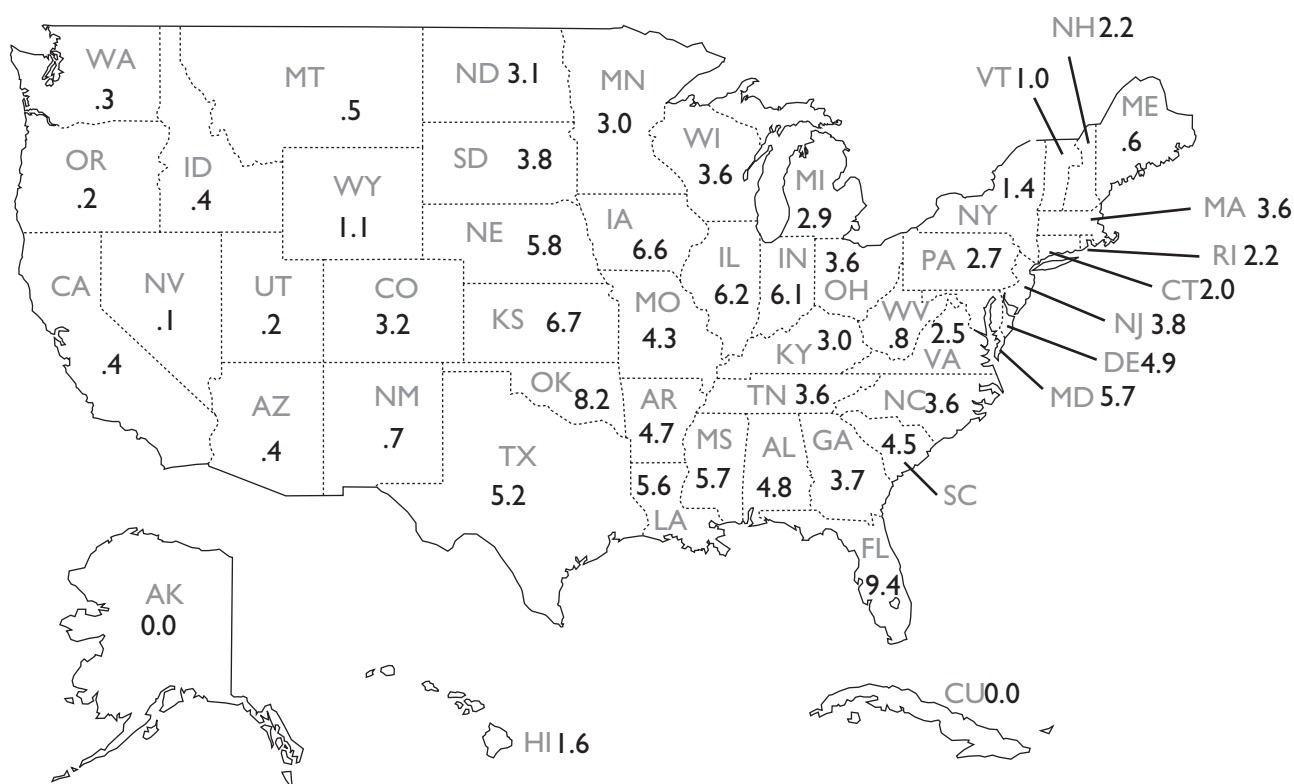
Tornado Data Set 4

The map below shows the average number of tornadoes that occurred within a 10,000 square mile (sq mi) (or 25,900 square kilometer [km²]) area during one year in each state. The averages are based on data for the years 1953 through 2004.

**Annual Average Number of Tornadoes per
10,000 Square Miles by State, 1953–2004**

NOAA/National Climatic Data Center.

Making Sense of the Data

Do you remember how to figure out the area of a square from math class? For a square or rectangle, length × width = area. For example, if you have a rectangle that is 5 inches (in.) on one side and 20 in. on the other side, then the area would be 5 × 20 = 100 square in. (sq in.). On a larger scale, think about a rectangle that is 50 miles (mi) wide and 200 mi long. The area of that rectangle would be 10,000 sq mi.

You probably also know that the states within the United States are different sizes (and different shapes). For example, the state of Alaska is the largest in area at 663,267 sq mi. South Carolina is much smaller in area, at 32,020 sq mi (but it is not the smallest state in size).

How many 10,000 sq mi "boxes" would fit in each state? Consider Alaska:

$$663,267 \div 10,000 = 66.3 \text{ boxes (at 10,000 sq mi each).}$$

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You could fit just over 66 of these boxes in Alaska. (Obviously, it is not quite that easy because Alaska's shape is not square, but the mathematicians have done the calculations!)

Now consider South Carolina. How many 10,000 sq mi boxes would fit in South Carolina's 32,020 sq mi?

32,020 ÷ 10,000 = 3.2 boxes (at 10,000 sq mi each).

For this activity, you do not need to do these calculations for each state. It is important, however, to understand that the numbers on the map are the average number of tornadoes in a 10,000 sq mi area of that state in one year.

With a colored pencil or marker, make a mark on the map by using the information in the following table.

Color for highlight	Description
Blue	A state that had an average of 1 or fewer tornadoes each year per 10,000 sq mi area
Green	A state that had an average between 1.1 and 3 tornadoes each year per 10,000 sq mi area
Yellow	A state that had an average between 3.1 and 4 tornadoes each year per 10,000 sq mi area
Red	A state that had an average of 4.1 or more tornadoes each year per 10,000 sq mi area

Hint: You do not need to color each state completely. You can simply make a mark over the state's name in the appropriate color.

Work with your teammates to answer the following questions:

1. On average, the five states with the most tornadoes per 10,000 sq mi area each year are

_____ _____ _____ _____ _____.

2. On average, five of the states that have the fewest tornadoes per 10,000 sq mi area each year are

_____ _____ _____ _____ _____.

3. Do you see any patterns about where tornadoes occur? If so, describe the patterns.

4. *Tornado Data Set 1* gave you information about the average number of tornadoes in each state for one year. *Tornado Data Set 4* gave you information about the average number of tornadoes in a 10,000 sq mi area in each state for one year.

   a. How were your conclusions alike or different for the two sets of data?

   b. Are there advantages to seeing both sets of data?

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