

## Alg Stats 2.2d

## Reaction Times

What is a reaction time? It is a measure of how long it takes you to do something, such as step on the brakes when you see a child run into the street.

- **Do different people have different reaction times?**
- **Can we collect reaction time data and use it to predict for an entire population?**
- **What is the normal distribution for reaction times?**

In this activity, you will collect data about your classmates' reaction times. Then you will predict reaction times for the general population. You will also examine a normal curve for data representing a general population.

Here's what to do:

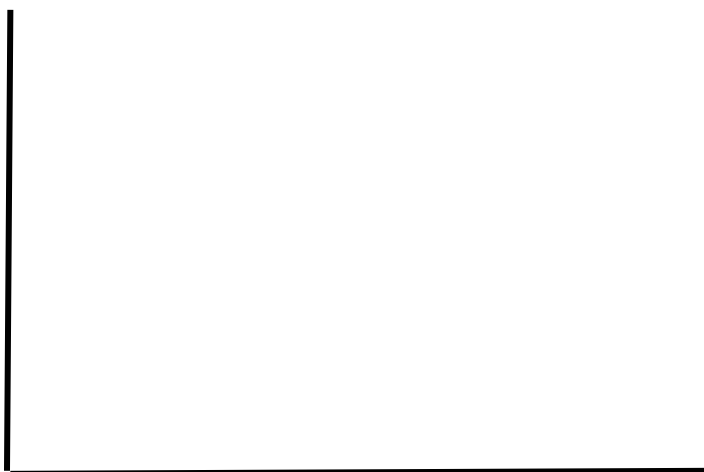
- You need meter sticks.
- The experiment involves pairs of students, one to hold a meter stick, one to catch the stick.
- Student B holds his hand out as if he/she is preparing to shake another person's hand. Student B's thumb and forefinger have about a 4 cm. spread. Student A holds the meter stick just above the hand of Student B.
- Student A drops the meter stick between the thumb and the forefinger of Student B. Student B catches the meter stick between the thumb and the forefinger.
- To find the reaction time (measured by centimeters), take the measurement at the catch position—the center of the thumb of student B.
- Each student gets three chances. Record all measurements.
- Exchange roles.
- Record the data.

Student	Trial 1	Trial 2	Trial 3
1			
2			
3			
4			

1) What is your mean\_\_\_\_\_?

2) What is your group mean\_\_\_\_\_, median\_\_\_\_\_, mode\_\_\_\_\_

3) Put your group's data into a list in the calculator. Create a histogram. Divide the reaction times into approximately 5 intervals. Draw the histogram below. Label.



4) Now add the times for the remainder of the class into the calculator into the same list. Create a histogram. Again, divide the reaction times into approximately 5 intervals. Draw the histogram below. Label. Pay attention to the scale for the numbers on the y axes.



5) Compare the histogram for your group with the histogram for the entire group.

6) What do you think the histogram for the general populations' reaction times would look like? Explain your answer. Use your comparison of the group histogram and the class histogram to help you.

7) Explain what you think is meant by the terms "normal curve" or "normal distribution." When would you expect to find a "normal curve"?