

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

## Reaction Time Lab

### Introduction:

The first step in stopping a car occurs before you even move your foot. Your senses (eyes or ears) will signal your brain that you will need to move your foot to the brake. The time it takes for you to first think about moving your foot until your foot hits the brake is the reaction time of the driver. The time between when you THINK until the time the task is STARTED is reaction time. This lab will first measure reaction time 2 ways, then ask you to test factors that affect reaction time.

### Method A: Using a stopwatch

1. Get two stopwatches. Have one student start both stopwatches at the same time.
2. When the first student stops his/her stopwatch, their partner should also stop his/hers.
3. The difference between the 2 times is the partner's reaction time.
4. Have each person complete 3 rounds of reaction times and record these times in the data table. Calculate your average reaction time.

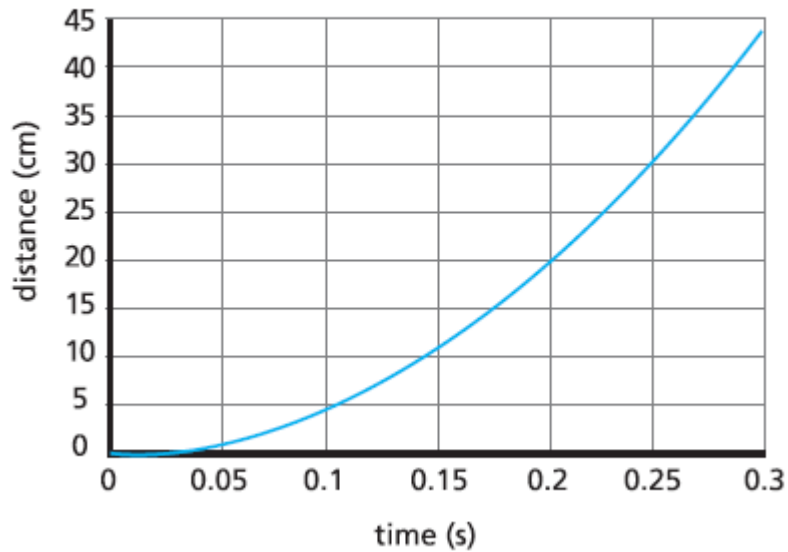
Trial	Time (sec)
1	
2	
3	

Average Time \_\_\_\_\_

### Method B: Using a metric ruler and a graph

1. Have your partner place their thumb and fingers around the 0 end of the ruler without actually touching the ruler as you hold the ruler by the top end
2. Have your partner watch the ruler, and when you release the ruler, they should stop the ruler from falling by squeezing their thumb and fingers together.
3. Measure the distance the ruler falls in centimeters.
4. Use the graph to determine your reaction time
5. Have each person complete 3 rounds of reaction times and record these distances the ruler falls and their times in the data table. Calculate your average reaction time.

### Reaction Time



Trial	Distance ruler fell (cm)	Reaction Time (sec)
1		
2		
3		

Average Reaction Time: \_\_\_\_\_

Reaction Time While Making a Decision based on something your partner does.  
Describe your Decision:

Trial	Distance ruler fell (cm)	Reaction Time (sec)
1		
2		
3		

Average Reaction Time: \_\_\_\_\_

Reaction Time While Being Distracted  
Repeat Reaction time steps while trying to send a text message:

Trial	Distance ruler fell (cm)	Reaction Time (sec)
1		
2		
3		

Average Reaction Time: \_\_\_\_\_

Conclusion Questions:

1. Describe how knowing your reaction time would help you as a driver.
2. What factors affected your reaction time?
3. What evidence do you have that your reaction time was affected?
4. List 3-4 other factors that we did not test that may affect the reaction time of someone driving a car.