

## Opposable Thumb Lab Activity

**INTRODUCTION:** Humans (as well as other primates like monkeys and gorillas) have hands with opposable thumbs. An opposable thumb is placed opposite the other digits (fingers). In this activity, you will learn how the evolution of the opposable thumb has benefitted humans.

**QUESTION:** How is the opposable thumb an advantage to humans?

**HYPOTHESIS:** I think it helps humans by \_\_\_\_\_

because \_\_\_\_\_

### MATERIALS

- String
- Several pieces of paper
- Paper clip
- Scissors
- Pen or pencil
- Baggie
- Coin
- Shoe
- Stopwatch (iPads are fine)
- Graph paper

### INSTRUCTIONS - ROUND 1

1. You and your partner will each do a series of simple tasks, while the other person times how long it takes (in seconds) to complete each task. Record the results in the data table below.

2. After one partner has done the activities, switch and have the other partner do it, while the first partner times and records the results.

### DATA TABLE

Task	Time (in seconds) using thumbs		Time (in seconds) without using thumbs	
	Partner 1	Partner 2	Partner 1	Partner 2
Tie a knot in a piece of string				
Clip 5 pieces of paper together using a paper clip				
Cut a circle in a piece of paper				
Write "science is awesome!" on a piece of paper				
Open a baggie, put a coin inside, and then seal the baggie closed				
Untie, remove, replace, and then re-tie one shoe				

## **INSTRUCTIONS – ROUND 2**

1. You and your partner will repeat the tasks. But, first you will use masking tape to tape your thumb to the side of your hand.
2. Do the tasks again (one partner at a time) and time how long it takes. Record the data on the data table. If you cannot complete the task within 2 minutes, record your data as “unsuccessful”.
3. Switch and repeat with the other partner.

## **GRAPH YOUR RESULTS**

Use a sheet of grid paper to graph your results using a double bar graph.

- Use reasonable intervals (do not count by single seconds)
- Remember to give your graph a descriptive title, and to label the x and y axis.
- Use 2 different colors for your bars. Make a color key.

## **OBSERVATIONS & INFERENCES**

Observe: What do you observe about the role your thumb plays in doing ordinary tasks?

Infer: Based on your observations, what can you infer about usefulness of your thumbs?

## **ANALYSIS**

Which task was the easiest? Why?

Which task was the most difficult? Why?

## **CONCLUSION**

How does the opposable thumb help humans?