

Name: _____

Catch It!

What Variables Affect a Human's Reaction Time?

Part 1: Beginning Thoughts on the Phenomenon

1. Discuss in your table group: What happens when you react to an object being thrown at you? What senses are you using? What is happening in your brain? The rest of your body? Jot down your ideas.

2. Make an initial model to explain your thinking about what happens in your brain and your body when you react to an object that is thrown at you. Then explain your thinking below.

Part 2: Planning the Investigation

QUESTION

If we change the _____, what will happen to the _____
_____?

EXPERIMENTAL SET-UP

Changing Variable:
(Check One)

- Sight (no blindfold)
- Hearing (blindfold)
- Touch (blindfold)

Controls:

Object type: _____

Ruler length (cm): _____

Starting position: _____

Ruler starting placement _____

Number of drops: _____

Note: The catcher can't move until they *see* the ruler drop or *hear* the word "drop."

PROCEDURE

1.

2.

3.

4.

5.

6.

Predictions:

I predict that using the sense of _____ will cause a quicker reaction than the senses of _____ and _____ because _____.

I predict that different people will have _____ times when testing the same sense because _____.

Part 3: Carrying Out the Investigation

RESULTS
Table

Changing Variable: _____

| | <i>Measurements on Ruler (cm)</i> | | |
|------------------------------|-----------------------------------|------------------|------------------|
| <i>Drop #</i> | <i>Student 1</i> | <i>Student 2</i> | <i>Student 3</i> |
| <i>1</i> | | | |
| <i>2</i> | | | |
| <i>3</i> | | | |
| <i>Put lengths in order:</i> | | | |
| <i>Median:</i> | | | |
| <i>Put medians in order:</i> | | | |

4. Revise your model as needed to show your thinking, using a different colored pencil.
5. Were the measurements the same for all of your trials when you were the catcher? Yes No If no, what things might have happened that affected your measurements?

| Cause: | Effect on Response (circle one): |
|--------|----------------------------------|
| 1. | longer / shorter |
| 2. | longer / shorter |

RESULTS
Summary

Our class experiment shows _____

6. Think about how we react when an object is thrown at us. Which sense do you think we rely on the most to respond? Why?

Part 5: Application

7. Other animals may rely more on other senses in order to survive in their environment. After each part of the two-part video *Amazing Animals*, tell which sense is most important for each animal's survival and explain why.

Video: *Amazing Animals: Animal Senses Part 1 and 2*

- Part 1: <https://www.youtube.com/watch?v=kB-7lsuZ8lc>
- Part 2: <https://www.youtube.com/watch?v=rGd5oKqzp1Y>

| Animal | Sense | What about their environment caused them to use this sense? |
|-----------------------|-------|---|
| Part 1: lion | | |
| coati | | |
| raccoon | | |
| Part 2: salamander | | |
| Boto dolphin | | |