

MAKING A MODEL OF A REFLEX ARC

You will build a simple model to show how a reflex arc works. A reflex arc is the pathway that sends a message very quickly from a receptor to a response.

Name: _____

Date: _____

Today's Goal: _____

BACKGROUND

When something touches your skin that could be harmful (like something hot or sharp), your body reacts before your brain has time to think about it. This fast response is called a reflex.

The reflex arc is the pathway the message takes:

1. **Receptor** – detects the stimulus
2. **Sensory Neuron** – carries the message to the spinal cord
3. **Integration Center (Spinal Cord)** – processes the message
4. **Motor Neuron** – carries the message to the effector
5. **Effector** – carries out the response



MATERIALS

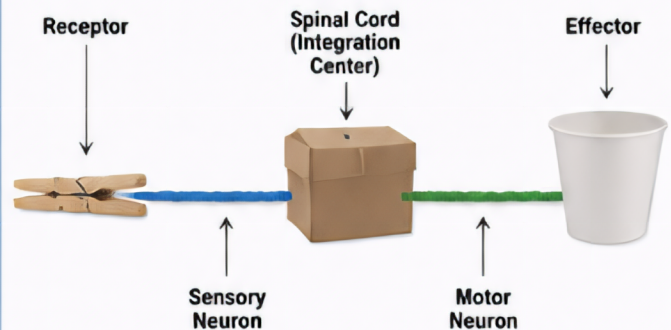
- 1 clothespin (receptor)
- 1 piece of string or yarn (sensory neuron)
- 1 small box or cardboard "hub" (spinal cord / integration center)
- 1 second piece of string or yarn (motor neuron)
- 1 paper cup (effector)
- Tape
- Scissors
- Labels or sticky notes
- Worksheet and pencil (for recording)



PROCEDURE

1. **Build the Model**
 - Label each part using the names in the pathway (Receptor, Sensory Neuron, Spinal Cord, Motor Neuron, Effector).
 - Connect the parts in order: clothespin → string → box → string → cup.
 - Use tape to attach the string ends securely.
2. **Test the Reflex Arc**
 - Squeeze the clothespin (the receptor).
 - Watch what happens at the other end (the cup/effector).
 - Record your observations.
3. **Try It Again**
 - Try changing how hard you squeeze the clothespin. Does it change the response?
 - Try making the strings longer or shorter. What changes?

YOUR MODEL



OBSERVATIONS

What happened when you squeezed the clothespin?

Which part represents the fastest message pathway?

What is the final response in your model?

Draw your model in the box to the right.

DRAW YOUR MODEL



CONCLUSION

A reflex arc helps the body respond _____ without having to _____ first.

This keeps us _____ and helps prevent _____.

One example of a reflex is _____.



SAFETY FIRST: Be careful when using sharp objects and when handling hot items. Always ask an adult for help.