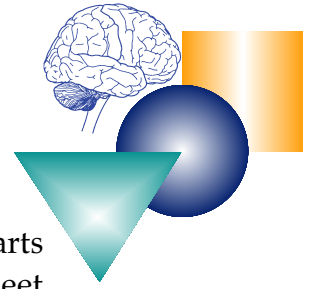


# Diagram For Homunculus or the “Little Man” Role Play

Student Information Page 1F



## Activity Introduction:

In this activity, you will role play how messages are passed from different parts of the body to and from the sensory and motor areas of the brain. Use the sheet titled “**The Little Man Role Play**” in conjunction with this activity. After you participate in this activity, complete the “*Student Data Page*”. This will allow you to see if you understand the paths that neurons take to and from the brain.

## Activity Background:

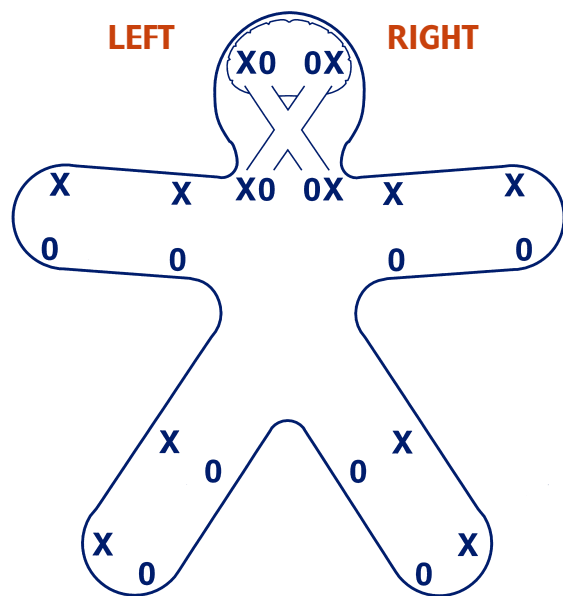
The following activity “**Homunculus or the ‘Little Man’ Role Play**” is designed to illustrate how messages are transmitted from the body to the brain and then followed by appropriate actions. The activity involves the whole class and, after some practice, is characterized by its speed and interactions.

The homunculus or “**little man**” represents the sensory area of the cerebral cortex that interprets pain, touch, temperature, pressure and the motor area of the cerebral cortex which acts on the sensory inputs. Each hemisphere of the cerebrum controls the sensory and motor functions of the opposite side of the body. Sensory neurons carry messages toward the brain and/or spinal cord. Sensory neurons are found in the skin and other sense organs besides the brain and spinal cord. Motor neurons carry messages away from the brain. Motor neurons may be found in muscles as well as the brain and spinal cord.

Messages from one side of the body must cross over to the opposite side of the brain.

When messages leave the sensory or motor areas of the brain, they also cross over to the opposite side of the body. Messages involving motor neurons cross over at the brain stem

above the spinal cord. Messages involving sensory neurons cross over in the spinal cord. Messages from sensory neurons from the upper part of the body cross at the upper part of the spinal cord. Messages from sensory neurons from the lower part of the body (legs and feet) cross over at the lower part of the spinal cord. These cross over sites are designated on the diagram provided for the teacher. Even though there are several cross over sites in the spinal cord for sensory pathways, only one cross over site will be used for sensory pathways in the spinal cord to simplify this concept.



X=Sensory Neuron O=Motor Neuron

Figure 1 Homunculus Man

**Dorsal (back) view** – imagine looking at the person from the back, as if they were laying face down on the ground.



LESSON 1  
ACTIVITY 1F

# Homunculus or the “Little Man” Role Play

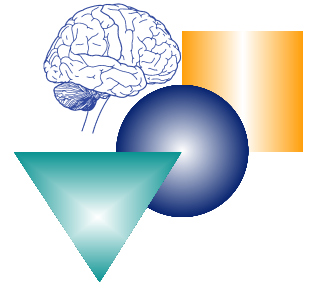
## Student Data Page 1F

Trace the neuronal pathways involved in the two sample actions that follow. Show arrows to indicate the direction of the pathways. Use a red line for Action Pathway #1. Use a blue line for Action Pathway #2.

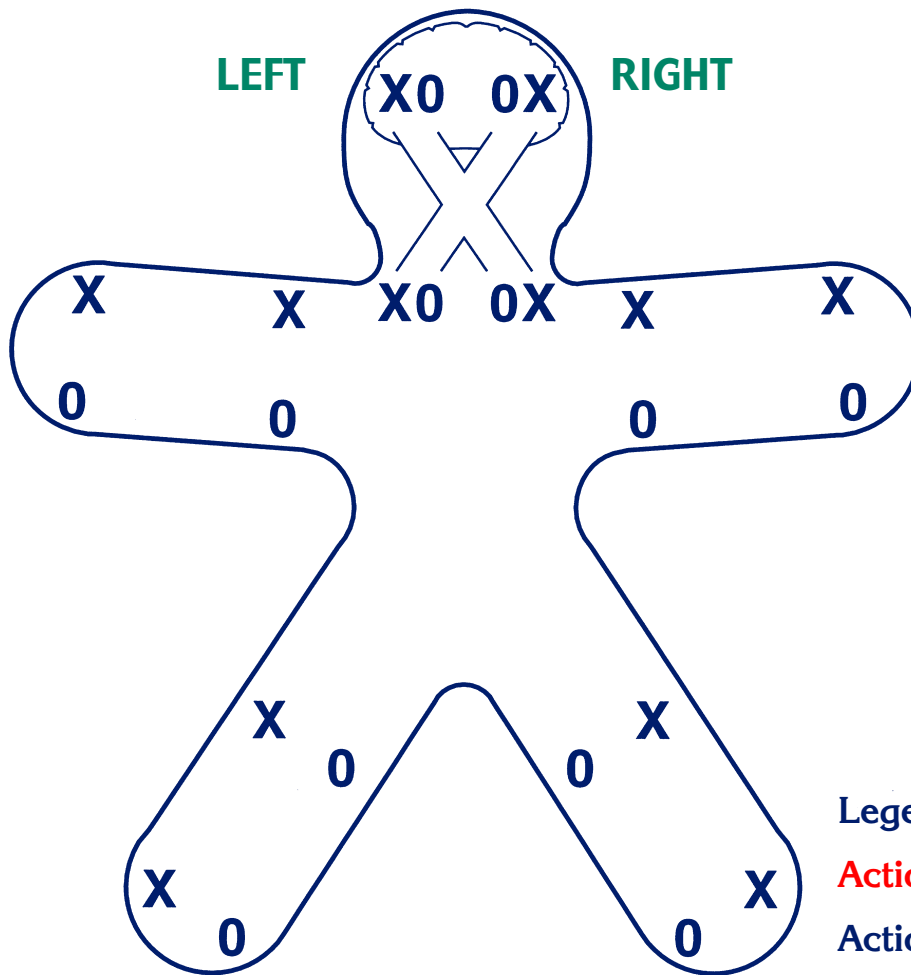
**Action Pathway #1** — Pick up a pencil with your right hand.



**Action Pathway #2** — A soccer ball hit your left leg. You kicked the ball away from you with your left foot.



Dorsal (back) View



Legend:

Action Pathway #1

Action Pathway #2

Describe each Action Pathway below:

**Action Pathway #1** — \_\_\_\_\_

**Action Pathway #2** — \_\_\_\_\_



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