Bead Neuron Model   **Student Name:** _____
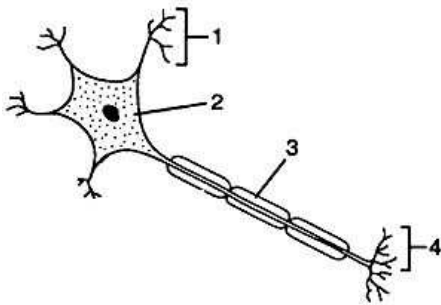
Parts of a Neuron

1. Dendrites
2. Cell Body with Nucleus
3. Axon
4. Synaptic Terminal

Bead Neuron – Gather the correct number of beads needed to make the neuron (see below). Be sure to gather different color beads for the six parts. Record the **color** of the bead for each part.

Dendrites = **20** _____ beads   Axon = **7** _____ beads

Cell Body = **6** _____ beads   Synaptic Terminal = **2** _____ beads

Nucleus = **1** _____ bead   Tip of the Dendrite = **5** _____ beads

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Directions: To make a bead neuron, string the beads using the pattern in the diagrams below. The string can be yarn, rope, or flexible wire. Starting with a different colored bead at the tip of the dendrite indicates the postsynaptic part of the dendrite, closest to the presynaptic nerve terminal. This is where the dendrite senses (tastes) the neurotransmitter released (spit out) by the nerve terminal from the previous neuron.
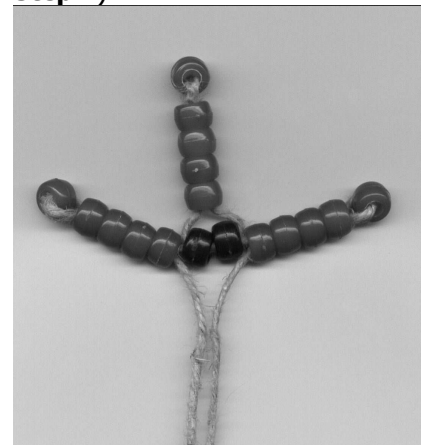
Step 1: Start with one of the Tip of the Dendrite beads and 4 Dendrite beads. Make the first dendrite using these beads.

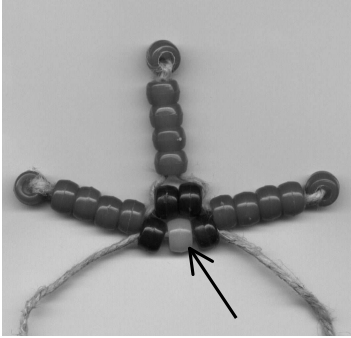**Step 2:** Add two cell body beads.
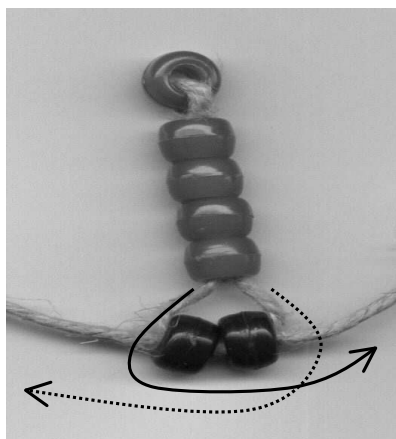
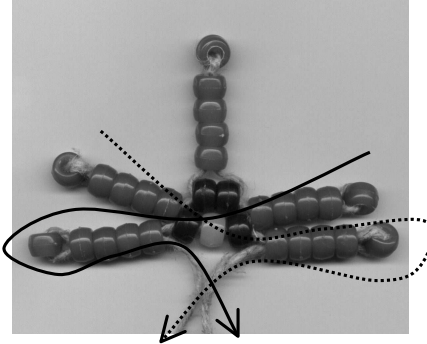**Step 3:** Add two more dendrites (5 beads each - **see Step 1**).
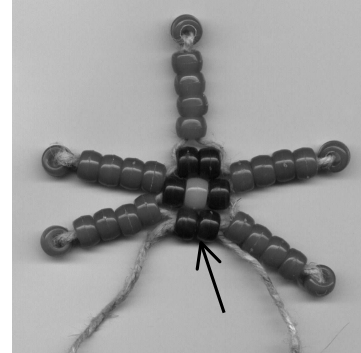
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Step 4: Add two cell body beads and the nucleus between the cell body beads.
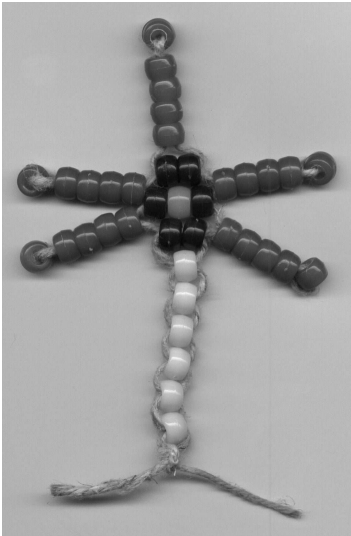

Step 5: Add two more dendrites (five beads each).
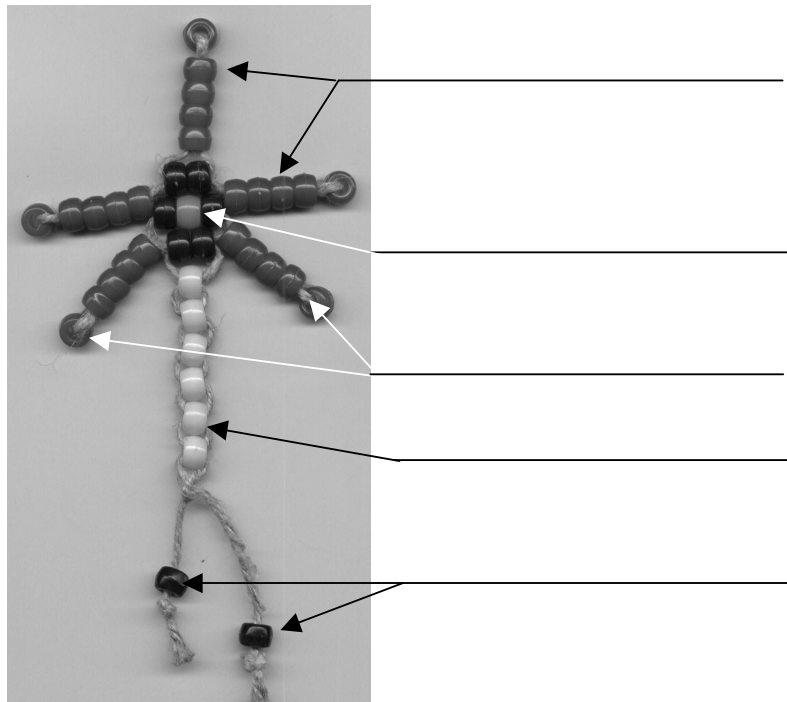

Step 6: Finish the cell body using two beads.

Step 7: Construct the axon using seven beads. Tie a knot after the 7th bead.

Step 8: Add the synaptic terminal beads to the end of each string. Tie a knot below each bead. Label the neuron parts.

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LET'S MAKE A MODEL CIRCUIT

1. Divide the class into two or three groups.

1. Instruct each group to make a model circuit.

2. Ask each student to explain how her/his neuron should connect with that of the person beside them.

What happens in a neuron?

Dendrites bring messages to the _____, where the message is processed.

The message then travels down the _____ as an _____

message. Once the message reaches the _____, it is converted into a

_____ message, which moves across the synapse.