



Neuron “Staining”

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Authors: Katie Leaderbrand, Eanna Ryan, Mike Scheid, Shoai Hattori

Objectives:

- Describe parts of a neuron and how scientists can visualize neurons with immunohistochemistry and biological staining

Materials and Supplies Needed:

Item	Quantity	Notes (Vendor, price, purpose, etc.)
Washable paint	6 bottles	Varying colors, make sure it is washable ~\$15/set from arts/crafts stores like Michaels
Foam brushes	6	\$1/each at Michaels
Paint palettes	6	Contain paint – or can use cups
Tarp	1	Keep tables clean
Elmer’s Glue	2	~\$3/ea
Glitter	2	~\$4/ea Loose glitter
Trays	2	~\$7/ea For containing loose glitter
Neuron photocopies	400	Outlines of neurons for kids to “stain”
Foam sheets (Neuron stencils)	6	To make stencils for kids to “stain” ~\$2/ea for 12x18’ sheet

Background Information / Activity Explanation:

Neurons are cells in our brain that communicate with each other to help our brains function. They have different parts. The soma, or cell body, is where the major “organs” (called organelles) are located that help the cell stay alive and function. The dendrites are long, thin extensions that collect information from other neurons. The axon is like a cable the neuron uses to send out signals to other neurons.

Neurons are very small and very hard to see, so scientists use special tools to look at neurons. We can use special dye to “stain” the neurons so that we can see them under a microscope. We can also use tools to make the neurons or parts of the neurons sticky (primary antibody = glue) so that our “stain” will stick to the cells we want to see (secondary antibody = glitter).

Procedures:

Have children apply glue to a picture of a neuron and then apply glitter. Do this in a plastic tray to limit mess. Explain this as an analogy to immunohistochemistry.

Place a neuron stencil over a blank sheet of paper and ask children to paint over the stencil using the foam brushes. The blank paper is similar to brain tissue, and the paint is like a biological stain (i.e., cresyl violet or coomassie blue) to help us see neurons.

Make plenty of copies of neuron outlines and have blank paper on hand for the stencils. Use a poster with examples of real IHC or staining as a reference.