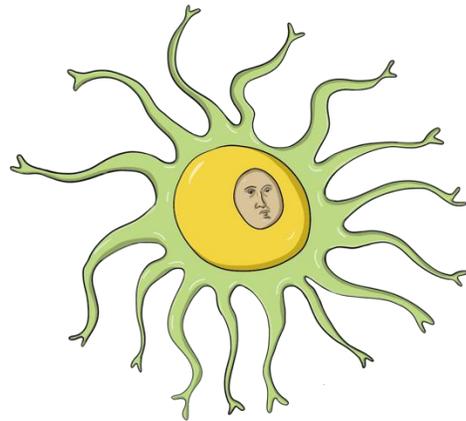


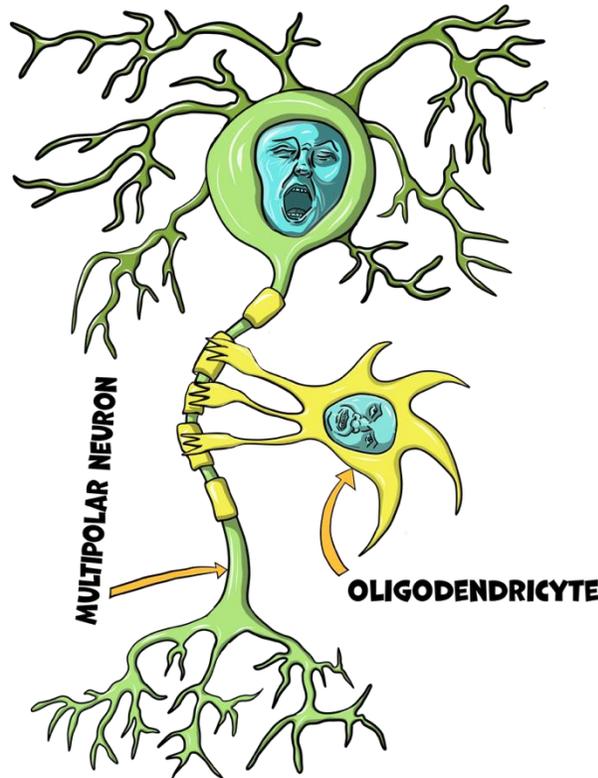
Glial cells are not neurons but they:

- Support and feed neurons (astrocytes)
- Clean up waste (microglia)

Protect and insulate axons (oligodendrocytes)



ASTROCYTE



MULTIPOLAR NEURON

OLIGODENDRICYTE

Astrocyte #showusyourbraincell

"Star" "Cell"

Astrocytes wrap membrane around synaptic connections and around capillaries.

They help maintain the blood brain barrier, & couple the detection of increased synaptic activity to dilation of capillaries, bringing in more blood for support.

Under the influence of astrocytes, the cells forming capillary walls in the central nervous system adhere tightly to each other, with few gaps, forming an essential "barrier" between blood & brain.

Astrocytes support neuron development, release nutrition & energy, & contribute to neurotransmission, plasticity, synaptogenesis & repair.

Nicholas Oshiro @PortlandStateUniversity #showusyourbraincell

"The objects I have chosen represents a neuron."

"The uncapped sharpie pens reminded me of dendrites. Since dendrites receive chemical messages, I correlated this to them being able to receive caps to make them complete."

Dendrite Soma

"I related the soma to the cores of the sharpies are, where the ink and color is stored. I view the ink as a representation of energy for the neuron and its genetic information."

Node of Ranvier

"The Nodes of Ranvier reminded me of erasers. As erasers can leave gaps in our writing, similar to how the Nodes of Ranvier are gaps in the myelinated axons."

Myelin

"The lead capsules reminded me of the myelin sheath as they are a protective structure that prevents the lead inside from spilling out or breaking. Though it still allows things to flow in and out of it as it pleases."

Axon Terminal

"I thought the caps of the sharpie pens were an appropriate choice to use as the axon terminal as it makes perfect sense. The sharpie pen caps will connect to the dendrites (uncapped sharpies) of another neuron."

Microglia #showusyourbraincell

Immune cells in the brain and spinal cord that change from 'resting' to 'activated' state to kill pathogens & absorb dying cells.

Resting Microglia

Activated Microglia

Microglia are mobile, spider-like, and "check" synapses for integrity.

GLIA #showusyourbraincell

Myelin sheath (oligodendrocyte membrane wrapped around axon)

Passing axon

Process

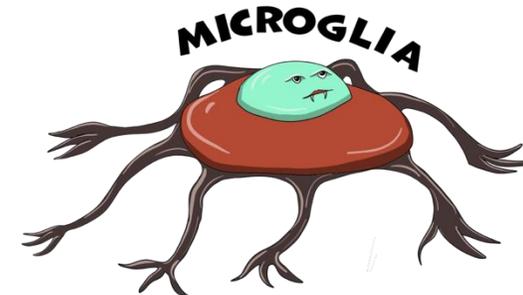
Soma

"Myelinating" macroglia found in the central nervous system (CNS). Schwann cells provide myelin in the PNS.

"Each oligodendrocyte contributes myelin to several axons."

Bare, un-myelinated Node of Ranvier

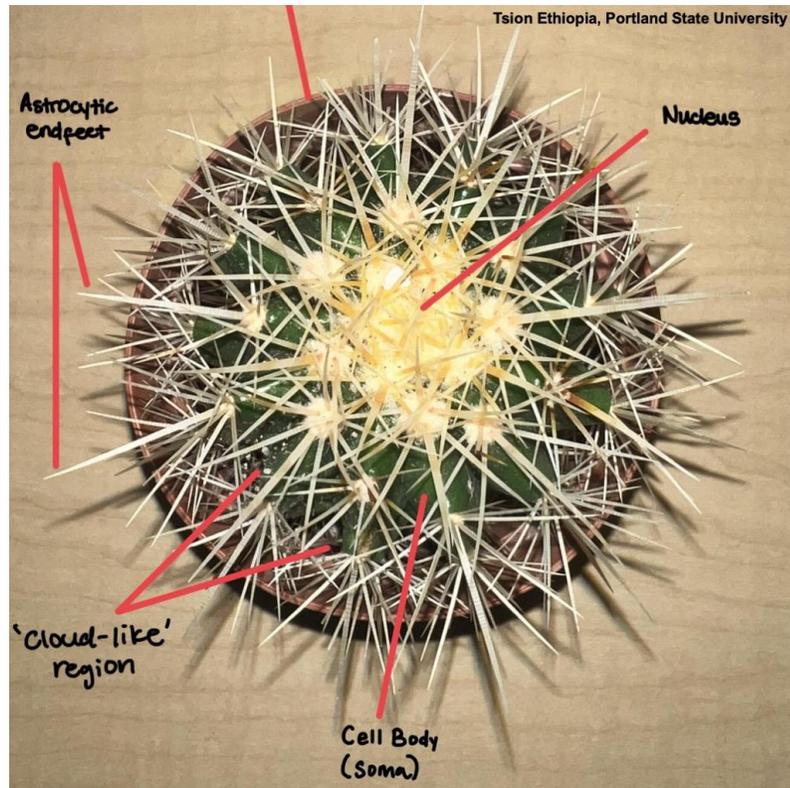
Oligodendrocyte nwnoggin.org



MICROGLIA

- What in nature looks like this?

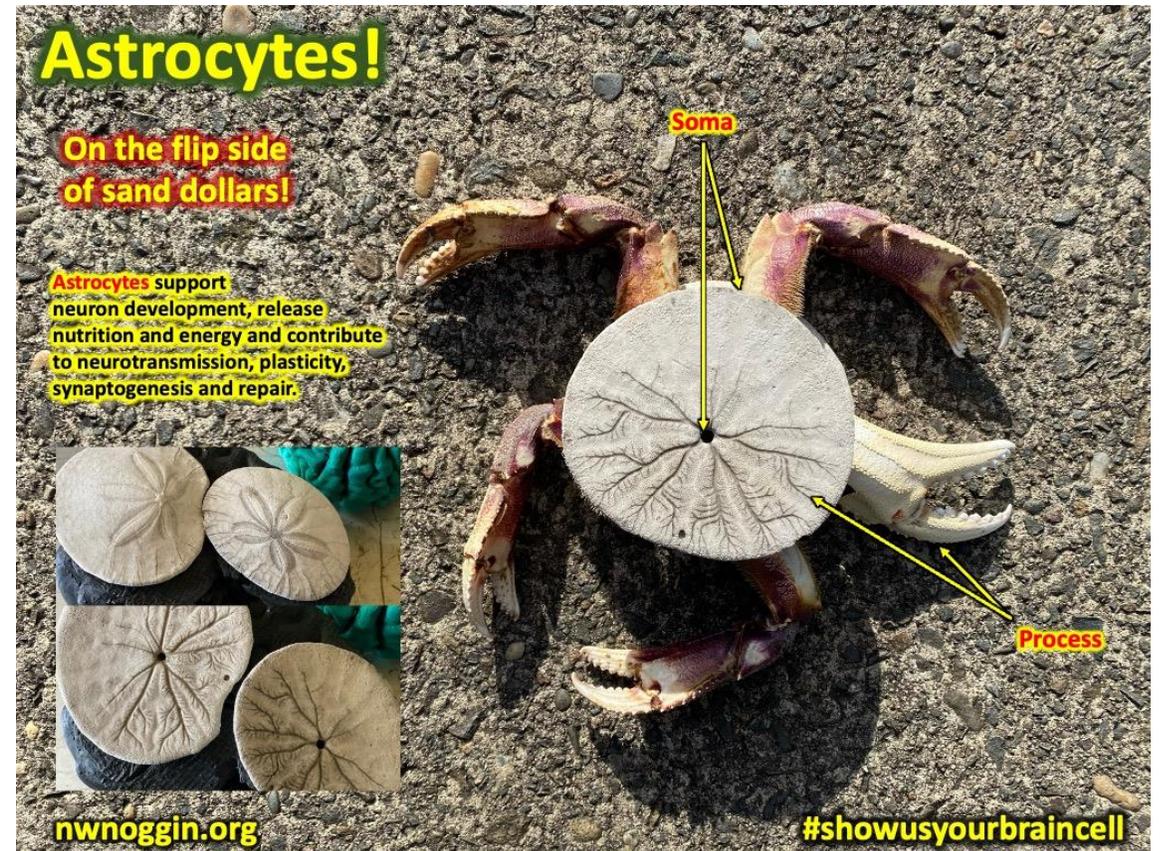
How do things like roots, moss, flowers, or vines connect and support life the way glia support the brain?



Use **what's available around you** — found, natural, or recycled materials.

Some ideas:

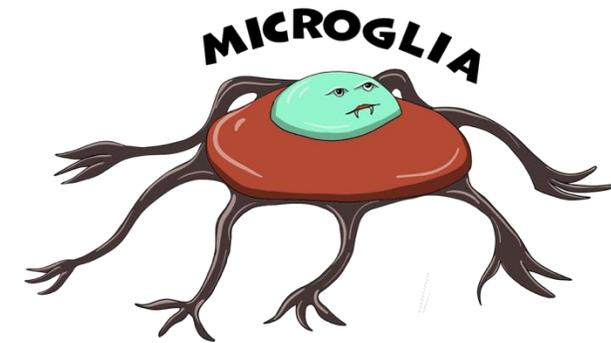
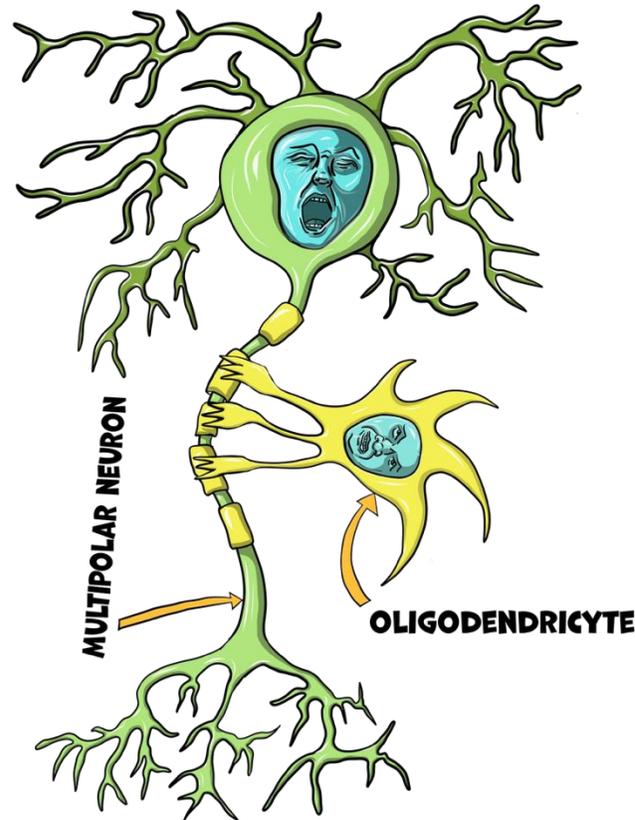
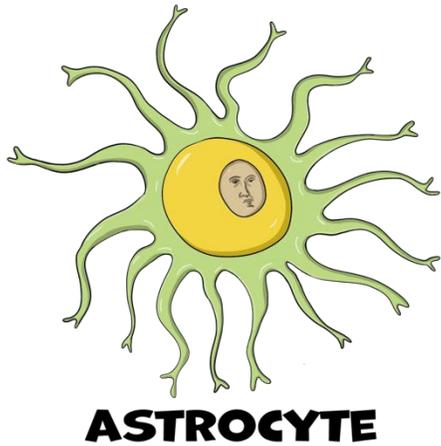
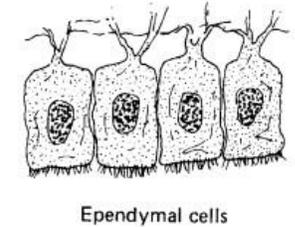
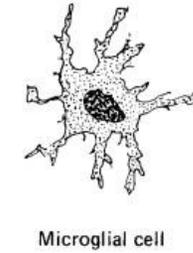
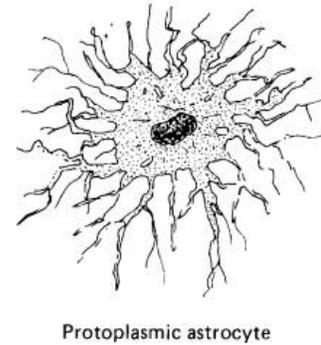
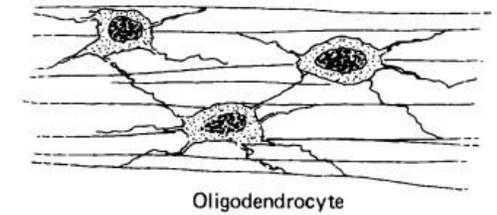
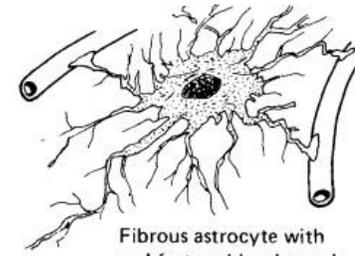
- Leaves, flowers, grass, roots, small branches
- String, thread, yarn, wire, or plastic wrap
- Bottle caps, paper scraps, cardboard, or fabric
- Clay or mud



1. Observe & Imagine

Look at a few reference images of glial cells (astrocyte, microglia, oligodendrocyte).

Choose one that inspires you.



2. Gather Materials

Collect objects that feel like they could represent **connections, branches, or supporting structures.**

(For example: grass for filaments, bottle caps for cell bodies, string for connections.)



3. Build the Cell Body

Use a small round object (rock, flower, cap, paper ball) as the center — this is the **cell body**.



4. Add Branches and Connections

Attach twigs, leaves, or string radiating outward to represent the **processes** that connect to neurons.

Think about how your glia will **reach out**, **wrap around**, or **link up** with others.

5. Photograph or Share

Take a photo of your glia sculpture and give it a name.

