

Brain In-A-Box

The Brain In-A-Box features five stations plus multiple supplemental activities on the brain. At each station, students answer questions on their station notes, which can be collected for assessment or simply used to keep students on task. Supplies listed for stations are all included in the Box.

Brain station activities:

1. **Brain exploration** – First students examine three different brains - two models and one animal brain. Then students learn hand signals that correspond to four key areas of their own brains, cerebral cortex, the cerebellum, the brainstem and the spinal cord, in order to remember those parts of the brain.
2. **Brain discoveries** – Students read two true stories, one of Phineas Gage and one of H.M., to understand two accounts of how we have learned more about the brain and how medical advancement changes our understanding.
3. **Brain connections** – Students construct a colorful "neuron" using pipe cleaners and then, as a group, they demonstrate neurotransmitters sending messages with the "pool float" simulation.
4. **Brain business** – Students learn that different parts of the brain control memory, language, emotion, and attention by working in pairs to test their responses with games and photos.
5. **Brain Growth** – Students learn about dendrite growth from enriched environments by examining rat cage pictures and graphs of dendrite growth in the different environments.

Extensions to the brain stations include:

- **Bill Nye Brain** – DVD and curriculum
- **Country Doctors video** – An hour-long DVD created by Oregon Public Broadcasting about the need for health professionals in rural Oregon. This is more suited to a parent night or for older students.
- **NIH Curriculum Brain: *Our Sense of Self***– Station four activities have been taken from this. There are five lessons with resources for further instruction and research. Oregon Content Standards are included.
- **Your Brain and Nerves Poster**
- **It's Mindboggling!** – Publication by the Dana Alliance. Student-centered material with information and games. These are yours to keep.
- **Cross Section Brain Model** – Shows the students the areas of the brain. The main areas we concentrate on are the cerebral cortex, the cerebellum, the brainstem and the spinal cord.
- **Sheep Brain** – These brains must be kept in the sealed bag and not opened by students.
- **Diseased Brain Model** – This brain shows a healthy half and a diseased half with pathologies: tumors, a hematoma (from injury), alcoholism, Alzheimer's, an aneurism, migraine, multiple sclerosis, Parkinson's disease and stroke
- **Pool Float Model**

- **Jell-O brain mold** – Makes a realistic brain you can eat – great attention-grabber. Follow the Jell-O directions using the evaporated milk. Ingredients not provided.
- **Books:**
 - *Aha! Hmm?*
 - *Brain* (ages 9-12)
 - *Brain Facts* (ages 12+)