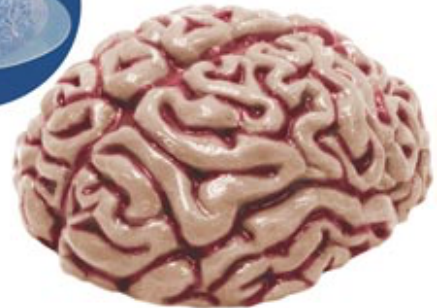


Brain Mold

MOLD-100

Objectives:

1. To identify the purpose of the brain.
2. To demonstrate what the brain is like using a brain gelatin mold.



Materials:

1. Diagram of the brain showing each section and what each section controls.
2. Brain gelatin mold and recipe.

This lesson is best preceded by a quick reminder of how the skull protects the brain. Points to make include:


- The brain is floating in the skull.
- What happens to the brain in a crash?
- What injuries may happen to the brain in a crash?

This lesson is best followed by a review of how a helmet protects the brain. Points to make include:

- Why the helmet is shaped as it is.
- The “sameness” of all shapes no matter what they look like (so choose the one you like).
- How a helmet works.

Content:

1. The brain controls everything we do. What are some activities the brain controls? (Movement, five senses, thinking, hunger, etc. Different parts of the brain control the things we do.)
2. For older students: Show a diagram of the brain and its parts.
 - **Cerebrum:** the largest part of the brain, controls the way we think, sense things, move, speak, and our memory.

- 
- **Cerebellum:** helps us control our balance and our coordination.
 - **Brain stem:** controls our breathing, heart rate, and all the cranial nerves.
 - **Other areas:** control our temperature, our appetite and thirst, our sleep, and whether or not we feel pain.


3. Show the brain gelatin mold. Shake it somewhat so it “wiggles.”
 - Students will ask, “Can I touch/feel it?” Tell them, “Yes, but after the presentation.”
 - Discuss that this is a gelatin mold, made from watermelon gelatin and other ingredients. But it is about the size of a brain, the color of a brain and it “wiggles” like the brain.
 - Ask what would happen if someone poked a finger in the mold. What would happen? Could you fix it? Would a Band Aid hold it together? No. If it dropped, could you put it back together? Why not?
 - Show the Brain Mold. Place a helmet over it and note how well it protects the brain.

Method:

1. Lecture and discussion. Question and answer.
2. Ask the students what they think the brain does.
3. Ask them what they did to get ready for school. Write the activities on the board and discuss how the brain allowed them to do all those things.
4. Using a model or picture of a brain show the students the parts of the brain and talk about how each part controls different activities.
5. At the end of the lesson, allow the students to touch the “brain” as they leave the class.

Preparation Instructions:

Before using the mold, wash the mold with warm soapy water. Rinse it very well, and dry thoroughly. When you are ready to make a mold, coat the inside with a non-stick surface such as PAM® cooking spray or vegetable oil. While any brand of gelatin dessert mix will work, Jell-O® brand seems to have the best selection of colors and flavors to choose from, and so the directions are based on using them.



For the Brain, you will need 3 small boxes (3 oz. each). We recommend watermelon flavor due to the color. To that you may want to add about 12 oz. of evaporated 99.5% skim milk (DO NOT use any other type – the gelatin will not harden properly!) in order to make the brain opaque and give it that grey “brain” coloration.

Follow the directions on the package to mix the gelatin. You may wish to add food coloring during the mixing process at this point for other effects. If you are using the milk, be sure to reduce the amount of water that you add by the same amount of milk that you are putting in.

You will want to wrap the mold in a towel, and place in a large bowl, pan or baking dish so that it has a solid base to stand in without rolling around. Pour the mixture into the mold and place the mold in the refrigerator and allow to set up overnight.

In order to remove the brain from the mold, shake the mold lightly to loosen the gelatin from the sides of the mold. Place a large plate upside down over the open end of the mold, and turn over. The brain should slide out on to the plate. If it sticks, you can try dipping the mold briefly into warm water and then try inverting it again.

The mold can also be used for ice cream or ice.

For ice cream: Prepare the mold as above. Then allow the ice cream to soften and spoon into the mold and re-freeze (overnight), then remove using the hot water method as above.

For ice: Prepare the mold as above. Simply add the liquid of your choice to the mold (don’t fill completely as most liquids expand when frozen). Place in the freezer until completely frozen (overnight), and then remove using the hot water method as above.

Take Your Lesson Further

As science teachers ourselves, we know how much effort goes into preparing lessons. For us, “*Teachers Serving Teachers*” isn’t just a slogan—it’s our promise to you!

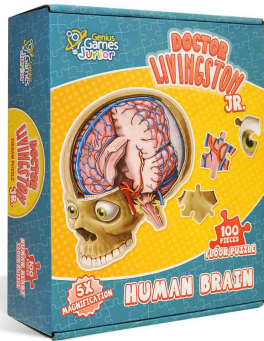
Please visit our website
for more lesson ideas:

[TeacherSource.com/lessons](http://www.TeacherSource.com/lessons)

Check our blog for classroom-tested
teaching plans on dozens of topics:

<http://blog.TeacherSource.com>

To extend your lesson, consider these Educational Innovations products:



Doctor Livingston Jr. Human Brain Puzzle for Kids (PUZ-250)

Piece together this cross-cut of our noggin from corpus callosum to spinal cord. Pick up the cerebellum that coordinates our body's movements. Find our brain stem that tells the heart to beat. Snap together our cortex that enables us to make sense of our surroundings and remember our experiences. See how the brain and its blood vessels relate to our facial bones, eyes, and upper jaw. When finished, kids can lean back and appreciate their hidden anatomy, at a larger than life scale.

Backyard Brains Human-to-Human Interface (BIO-510)

Have you ever dreamt of controlling the people around you? Family, friends, co-workers, even total strangers? Well now that power is yours thanks to the cutting edge of neuroscience and biotechnology, the Backyard Brains Human-Human Interface. With our electrophysiology setup, you will learn exciting neuroscience concepts first-hand as your brain sends an electrical impulse to your arm's muscles, telling them to move, and when your muscles move, this generates an even larger electrical signal. You'll take that electricity, then further amplify it and inject it into the nerves controlling another person's arm.



Lung/Diaphragm Demo (DIA-100)

Without a pump, how do some animals inflate their lungs? Pull down on the rubber diaphragm and the balloon lungs inflate; release and they deflate. Large enough for small groups to see, small enough to remain as an interesting item on your desk during the year! Approx. 8.8 cm (3.5") tall. Colors may vary.