

Honors Physiology
The Nervous System
Hemisphere Hats

Name: _____

Period: _____ Date: _____

*use pages 434 - 440 in your text

Label the following areas on your "hemisphere hat" (please label both sides of the hat). Write large to fill the space, and use color-coding to help distinguish one area of the brain from another. Answer all questions on a separate sheet of paper, to be kept in your binder.

- Frontal lobe
- Parietal lobe
- Occipital lobe
- Temporal lobe
- Motor cortex (shown in red on page 437)
- Sensory cortex (shown in dark blue on page 437)

Using the pages given, answer the questions below and label your hat accordingly.

1. What is the cerebral hemisphere?
2. How do gyri differ from sulci?
3. Describe the cerebral cortex.
4. Using the picture on page 438 as a guide, draw small pictures on your motor cortex showing what functions it controls.
5. Using the picture on page 438, draw small pictures on your sensory cortex showing what functions it controls.
6. What does the premotor cortex control? Label the premotor cortex on your hemisphere hat, and draw a small picture on your brain representing the functions of the premotor cortex.
7. What is Broca's Area? Label Broca's Area on your brain, and write a small phrase to help you remember what it controls.
8. What is Wernicke's Area? Label Wernicke's Area on your brain, and write a small phrase to help you remember what it controls.
9. Draw a small picture of an eye and write the word "vision" at the location of the primary visual cortex.
10. Draw a small picture of an ear and write the word "hearing" at the location of the primary auditory cortex.
11. Draw a small picture of a nose and write the word "smell" on the olfactory cortex.
12. Draw a small picture of a tongue and write the word "taste" on the gustatory cortex.
13. The frontal lobe is involved in determining the consequences of your actions, recognizing social norms, logical thinking, and sequential tasks. It also helps retain long-term memories that are associated with emotion. Draw a few small pictures/phrases to help you remember the functions of the frontal lobe.
14. The parietal lobe helps you with spatial relationships/the sense of touch. Draw a small picture/phrase to help you remember the functions of the parietal lobe.

To assemble your hat when finished:

First cut out both hemispheres, around the outside edge. Then snip in on the dashed lines. Don't cut the triangle out, just snip the dashed lines. Pull each (now snipped) dashed line over until it touches the other line, and secure with tape or glue. It should then take on a half-round shape. To put these two halves together, simply choose one side to overlap just slightly onto the other ($1/8^{\text{th}}$ an inch or less is enough, unless you need to make the hat smaller). Secure with tape.

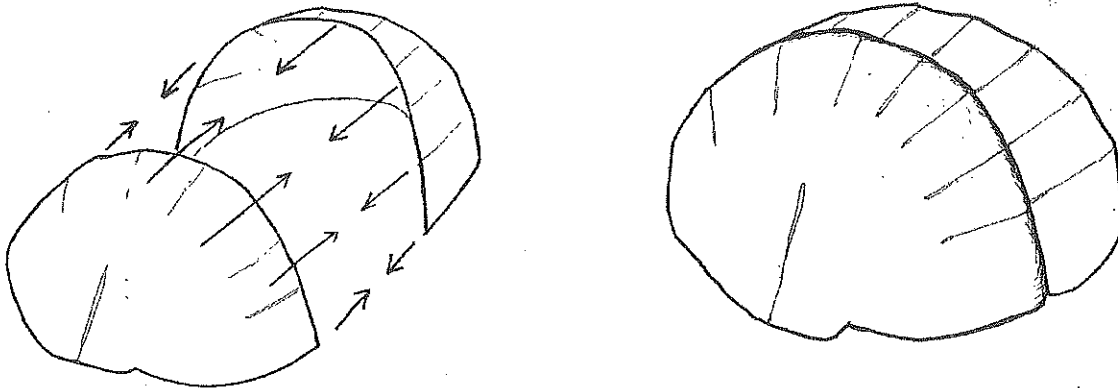
Make a "hemisphere hat" (it could also be a life-size model, instead of a hat)

You will need copies of the following pattern pages printed onto heavyweight paper (card stock), plus either clear tape or white glue. If you use glue, we recommend using clothespins or paper clips to hold the joints while they dry.

We have provided both labeled and unlabeled patterns so that you can choose to have your students do their own labeling, if you wish. With the labeled patterns, you may still want your students to color code the lobes, or trace over the words with markers or crayons. Do any coloring before you assemble the hats.

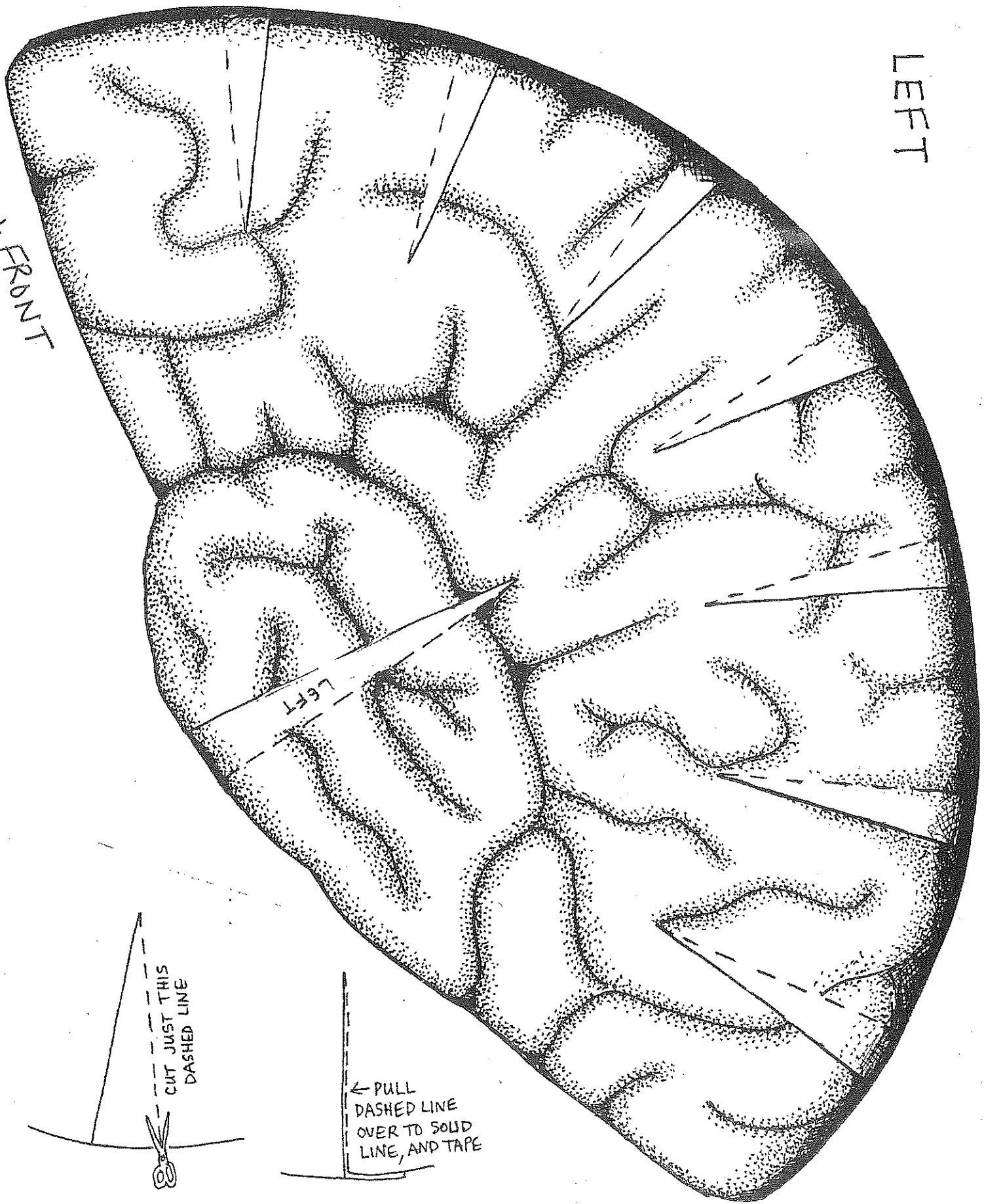
These hats are designed to be one-size-fits-all. (It's amazing how similar head sizes are, in comparison to shoe or shirt sizes.) The size of the hat can be made a little smaller by overlapping the hemispheres a little more before taping them together. If necessary, the folds can also be overlapped slightly more, as well. Another way you could shrink the size would be to use the reduction button on the copier and copy at 95%.

To assemble, first cut out both hemispheres, around the outside edge. Then snip in on the dashed lines. Don't cut the triangle out, just snip the dashed lines. Pull each (now snipped) dashed line over until it touches the other line, and secure with tape or glue. It should then take on a half-round shape. To put these two halves together, simply choose one side to overlap just slightly onto the other. (1/8" or less is enough, but use more if you are trying to shrink the size of the hat) and secure with tape.



* FRONT

LEFT

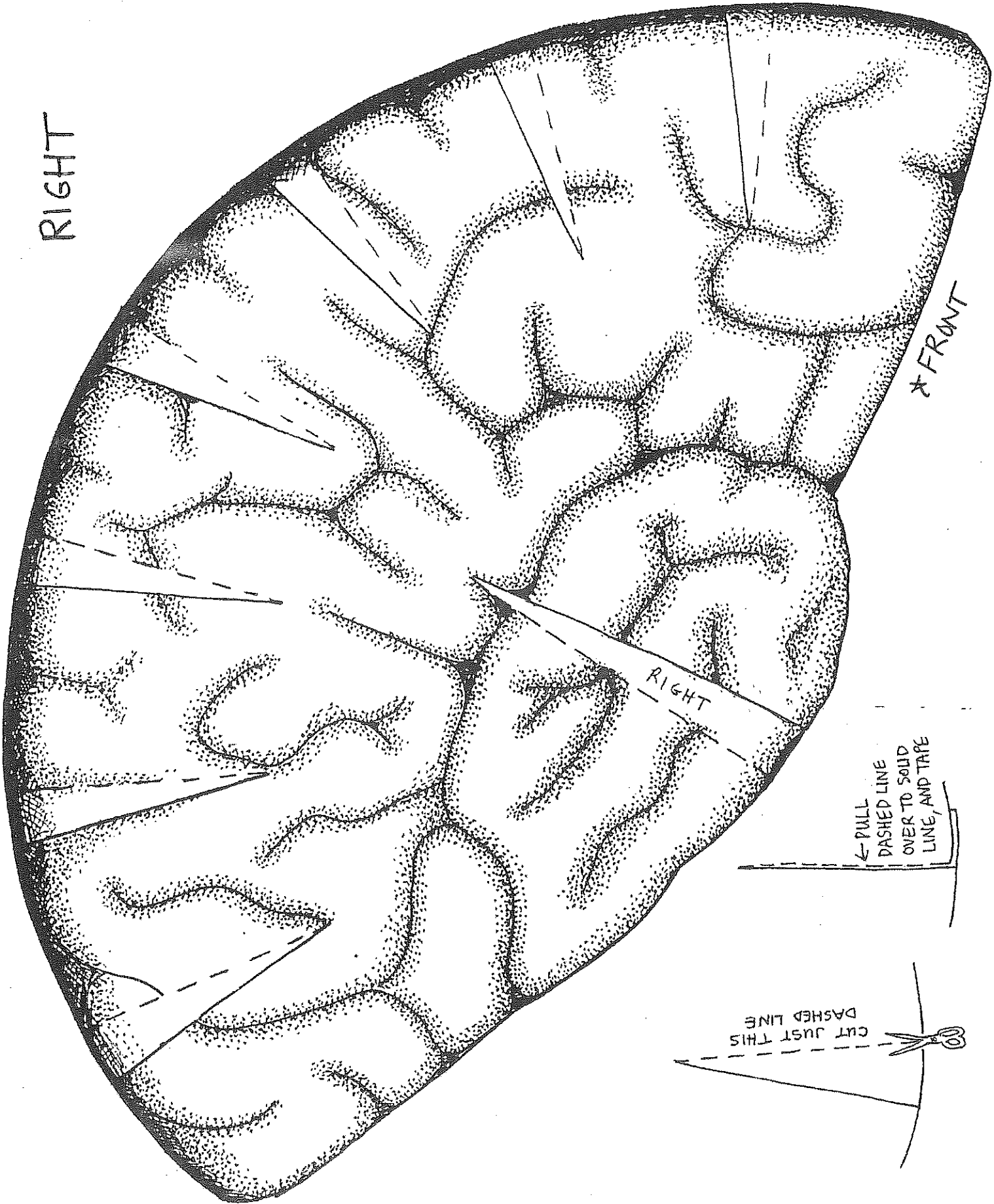


CUT JUST THIS
DASHED LINE



← PULL
DASHED LINE
OVER TO SOLID
LINE, AND TAPE

RIGHT



* FRONT

RIGHT

← PULL
DASHED LINE
OVER TO SOLID
LINE, AND TAPE

CUT JUST THIS
DASHED LINE

