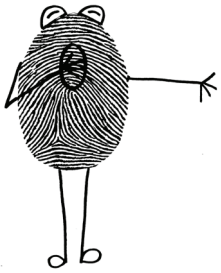
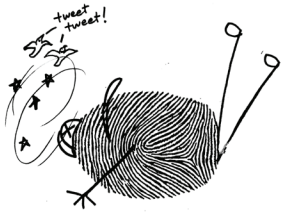
THE BRAIN SONG

I woke up Monday morning, just like I always do;
Without my PONS to get me up, I'd sleep the whole day through.
My faithful old MEDULLA had worked all through the night,
To keep my heart and lungs working right.
    Oh, my brain stem works so hard,
    It does so many things I disregard (oh, how very boring)
Thinking about my CEREBELLUM is a snore,
Without it, though, my head would hit the floor.



I jumped up out of bed, then, and dressed without a fuss;
I was getting signals from my HYPOTHALAMUS.
I went out to the kitchen for cereal and a bowl,
But what a sight for my OCCIPITAL!
    Pans and dishes filled the sink.
    My TEMPORAL LOBE could smell the garbage stink (oh, how very awful)
Thinking about the chores that waited for me there
Was more than my poor FRONTAL LOBE could bear!

I fled that great disaster using MOTOR CORTEX nerves,
I hurdled over forks and crumbs and Friday night's hors d'oeuvres.
My FRONTAL LOBE decided to take me out the door,
But I really wish I'd seen that apple core!
    As I gazed up at the ceiling,
    My TEMPORAL LOBE could "hear the birdies sing" (oh, how very lovely)
Thinking I'd made my poor PARIETAL go lame,
My LIMBIC SYSTEM felt a sense of shame.



Oh, my HIPPOCAMPUS would make sure
The memory of this day would long endure (oh, how very poignant)
Thinking I'd better get some help with my hygiene,
I dialed 1-800-42-GET-IT-CLEAN!

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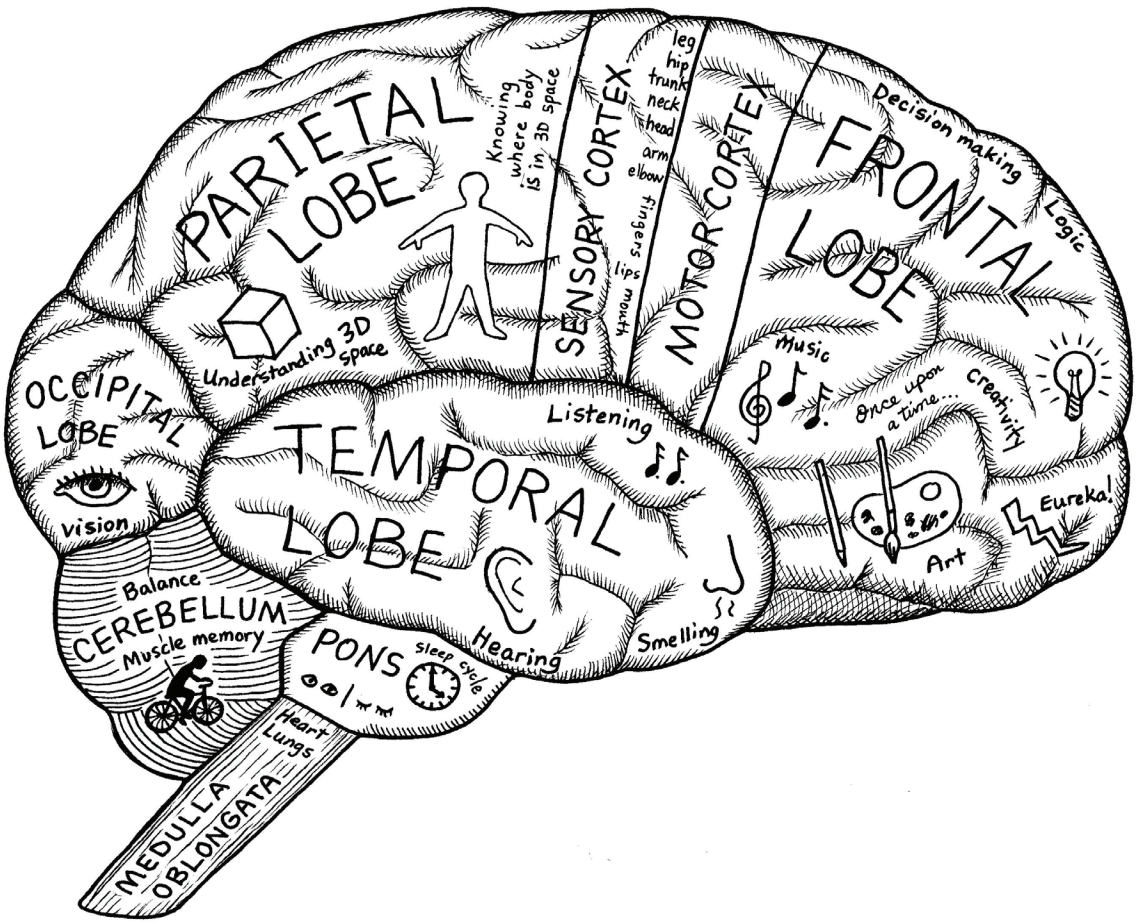

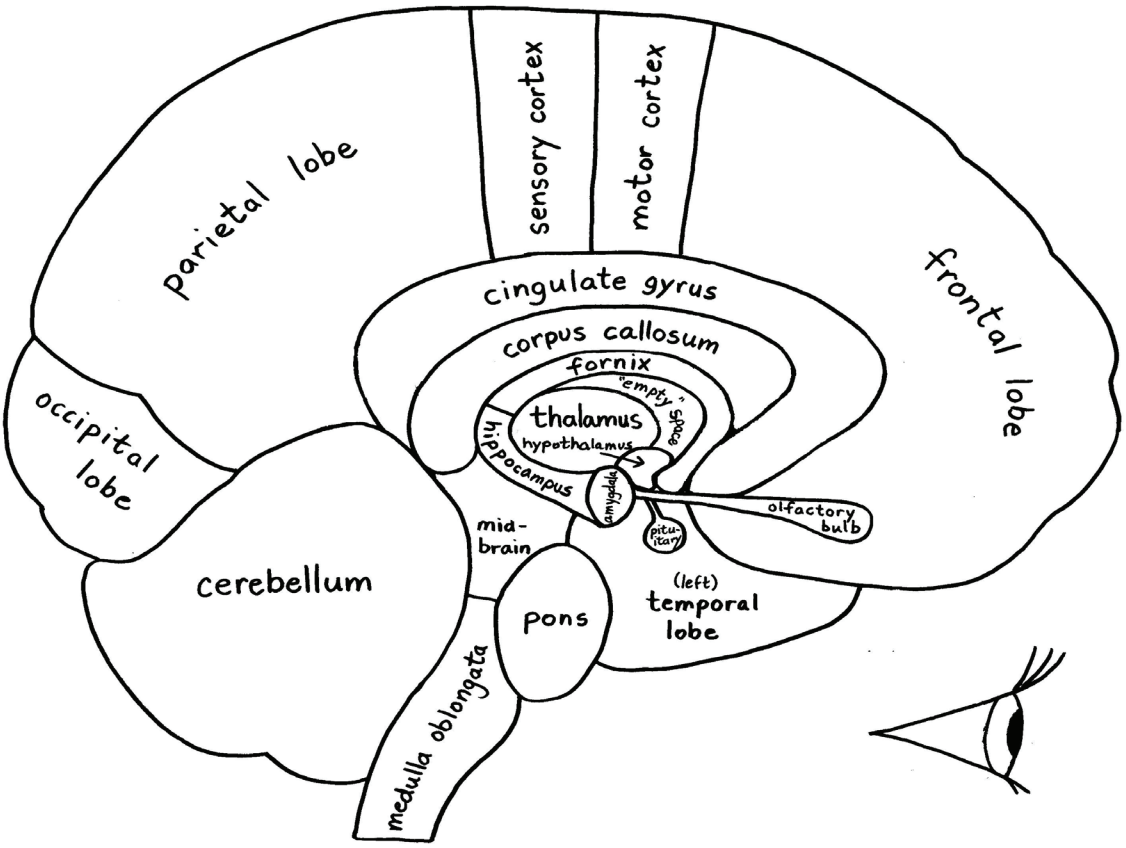

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BRAIN ANATOMY

FRONTAL LOBE: Located in the front of your head, behind your forehead (thus its name), this is the area of your brain that you think of when you think of your "brain." (Isn't it funny that your brain can think about itself thinking?) The frontal lobe is where you make decisions and do mental calculations. When you play chess, you give your frontal lobe a workout. The frontal lobe is responsible for monitoring your behavior and learning social skills that you need in order to get along with other people. The famous example of Phineas Gage shows how damage to the frontal lobe can result in a change of personality. Before the accident Phineas was responsible, polite, and good with people. After the accident he was irresponsible, rude, and terrible with people.

MOTOR CORTEX: Right next to the frontal lobe is the thin strip of cortex that sends signals to your muscles telling them to move (or to stop moving). Your frontal lobe thinks of your chess move, th,en sends a signal to the motor cortex, which in turn sends a signal to the muscles in the arm and hand, causing them to pick up your chess piece and move it to another square.

SENSORY CORTEX: This thin strip is connected to all parts of your body and receives messages about things you feel. If you get a sudden pain in your wrist, the pain sensation is received in the brain by the sensory cortex. The sensory cortex can relay this information on to your frontal lobe so that you can think about why your wrist hurts and possibly take steps to fix whatever is causing the pain. The sensory cortex has two sides, each one matching up to one side of the body. So the signals from your right wrist go to a different area than the signals from your left wrist. Some parts of the body, such as your fingertips and face, get a much larger section of the cortex devoted to them. These parts need more sensitivity than parts such as the back or the legs.

PARIETAL LOBE: This area of the brain (pronounced: par-EYE-it-al) is the most mysterious one. Scientists still don't know everything the parietal lobe does. Its main job seems to be keeping track of where your body is and what it is doing. If you close your eyes, you still know what your arms are doing. You can bring your hands together without looking. This is your parietal lobe working. It also seems to keep track of all the objects in your environment, and "knows which end is up." For example, you know which end of a pencil is used for writing, even if the pencil is upside down. This may seem a bit obvious, or even silly, but this function of the brain is very important. Your parietal lobe takes input signals from your body parts and keeps track of them all, making sense of it all and relaying this information to your frontal lobe. The parietal lobe works with the cerebellum and the inner ears to give you your sense of balance.

OCCIPITAL LOBE: This area (pronounced ock-SIP-it-al), located at the back of your head, is where the input from your eyes gets processed. It may seem strange, but the nerves from the eyes travel all the way to the back of the brain. Not only that, but the nerves from the eyes cross over in the middle so that the left eye connects to the right side of the brain and the right eye connects to the left side of the brain! To further complicate things, the images arrive at the occipital lobe upside down! The occipital lobe has to make sense out of all the upside-down images that come from your eyes. It turns everything right side up and figures out what you are looking at. Your eyes only do half the job of seeing. The occipital lobe has to finish the job.

TEMPORAL LOBE: This area is on the side of the head, sort of behind your ears and your temples. (The temples are the sides of your forehead.) The temporal lobe is in charge of your ears and nose. Your ability to speak and to understand speech is located in the temporal lobe. When you talk, you are using your temporal lobe to construct a sentence that makes sense. Then your temporal lobe tells your motor cortex to tell the muscles in your mouth and throat to make the sounds. Your sense of smell and your memory of smells are also located in the temporal lobe. The temporal lobe is very close to the inner part of your brain where memories are stored.

HIPPOCAMPUS: This is the Latin word for sea horse. Apparently, someone in the early history of brain research thought this part looked a bit like the body shape of a sea horse. Probably what we now call the fornix was included as part of the hippocampus. That whole entire "C" shape almost looks like a sea horse. (But we still think some serious imagination is needed!) Since those early days, most of the C has been given the name ***fornix***, which is Latin for a "vaulted arch," like in a cathedral ceiling. (Okay, so the fornix doesn't look exactly like a vaulted arch, but at least it resembles one more than the hippocampus looks like a sea horse!) The hippocampus and the fornix are part of your memory system. They let you compare new things to old ones you already have in your memory. The hippocampus is sort of like a librarian, finding a place to put new books (memories) and pulling out old ones when you need them.

FORNIX**:** This is a connector piece that connects the hippocampus to the hypothalamus. The little bump at the end (which is called the mamillary body, just in case you are interested) seems to have a role in emotions such as happiness and excitement.

HYPOTHALAMUS: The word “hypo” means “under,” so the hypothalamus is located under the thalamus. Although this part is very small, it has lots of important jobs! It keeps your body temperature and your blood pressure constant, makes you feel hungry or thirsty, helps sort out emotions coming from the amygdala, manufactures chemicals that control growth, and sends chemical messages down to the pituitary gland telling it when to release its chemicals.
Think of the hypothalamus as your body’s balance regulator, letting other organs know when there is too much or too little of something.

THALAMUS: This part remains somewhat of a mystery to scientists, but it seems to be in charge of sorting out all the signals coming from the limbic system and then sending them to the parts of the cerebrum they should go to.

THE EMPTY SPACE: This space is not really empty; it is filled with cerebrospinal fluid. Fluid-filled spaces in the brain are called ***ventricles***. Scientists think these pockets of fluid help to cushion and protect the brain, as well as “flloating” the brain, to take pressure off the spinal cord. Also, the fluid nourishes the cells of the inner brain.

OLFACTORY BULB: Although it might sound like a light bulb factory, it is really the nerve that brings in smelling sensations from the nose. Your nose hooks up to your brain very close to the place where memories are stored, the hippocampus. Some scientists think this is why you almost never forget a smell. The odor sensations are then sent to the temporal lobe where your brain determines what kind of smell it is.

PITUITARY GLAND: The pituitary (pit-TU-it-tary) gland produces chemicals that make you grow. It also makes you mature from a child into an adult. (You know, all that puberty stuff.)

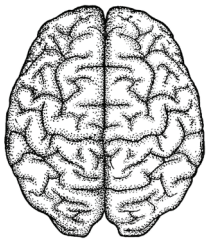
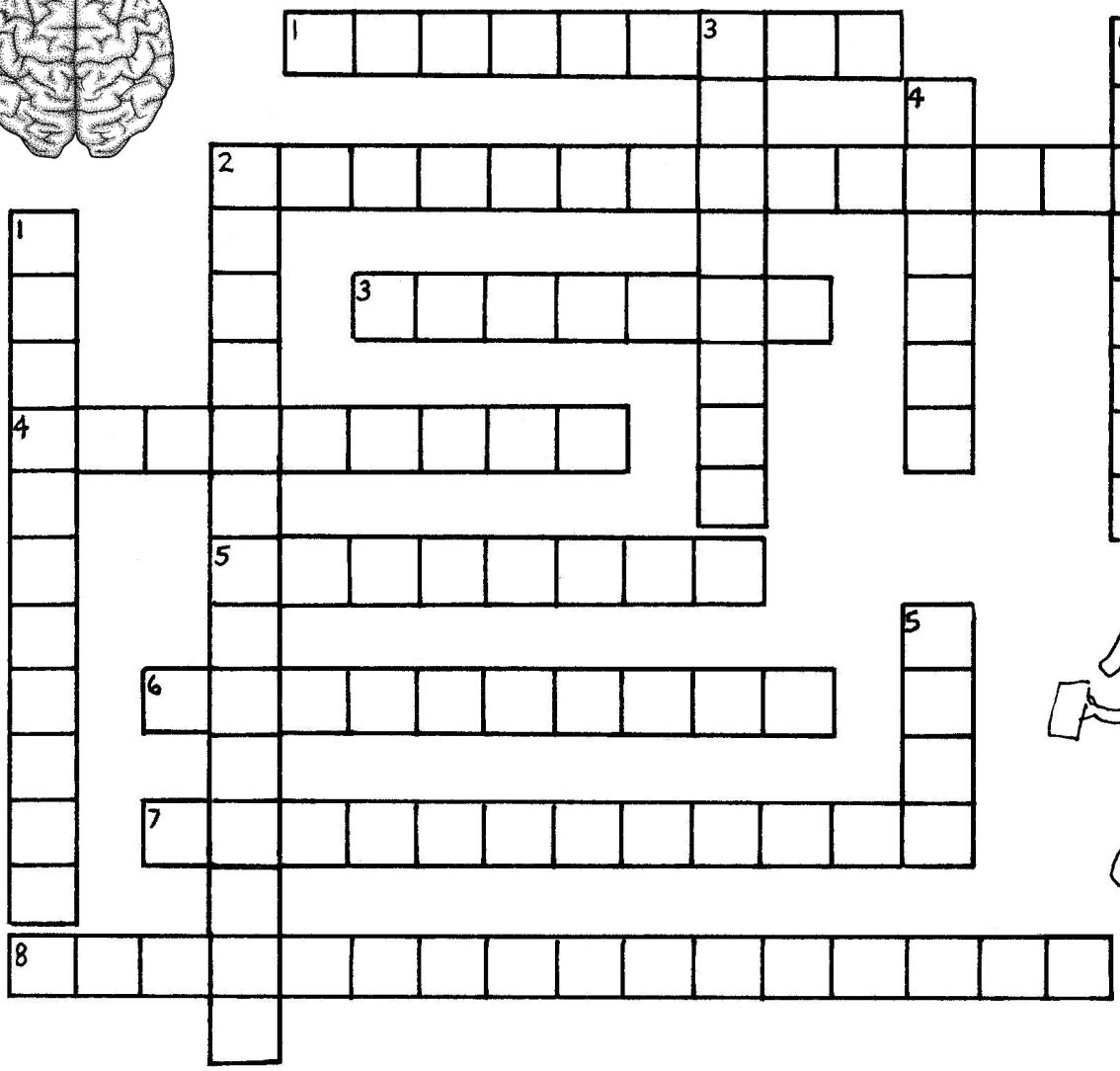
ANSWERS TO CROSSWORD PUZZLE:

ACROSS: 1) occipital 2) corpus callosum 3) frontal 4) pituitary 5) amygdala 6) ventricles
7) hypothalamus 8) medulla oblongata
DOWN: 1) hippocampus 2) cingulate gyrus 3) thalamus 4) fornix 5) pons 6) temporal

A puzzle about brain parts

ACROSS

1) This lobe is your vision center
2) This “firm body” connects the right and left sides of your cerebrum
3) This lobe is where you make decisions
4) This pea-sized gland controls your growth
5) This is the center for strong emotion, especially fear and anger
6) This is the correct name for empty spaces in the brain
7) This small part has many jobs, including telling you when to eat and drink
8) This is the bottom of your brain stem, and it controls your breathing and heart beat

DOWN

1) This part was named after the sea horse, and is important for storing memories
2) This is a layer of the cerebrum and sits right on top of the corpus callosum
3) This is the relay center where signals from the senses are sorted out and relayed on to the cerebrum
4) This is the connector piece between the amygdala and the hypothalamus
5) This is the part of the brain stem that controls your waking and sleeping cycle
6) This lobe processes information from the ears and nose