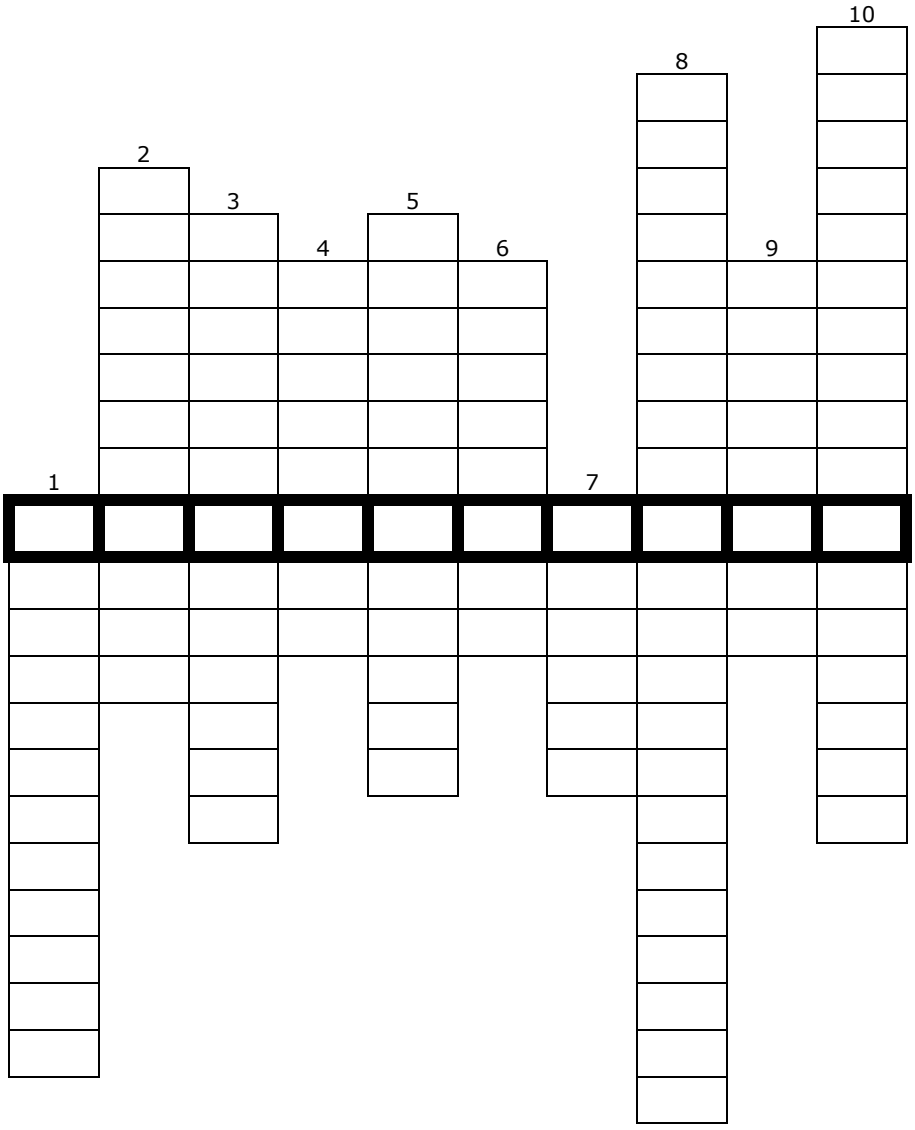
Name: _____ Date: _____

Kinds of Research Word Puzzle

Instructions:

Read Chapter 16 of the *Brain Facts* book. Use the clues below to fill in the columns of the puzzle and reveal the bonus word across the center!
Note: Rows across do not form words except in the center of the puzzle (bolded area).



Clues:

1. Microdialysis, pharmacology, and spectrometry are examples of tools for _____.

2. Some disorders result from an overabundance of copies of genes or repeats of a stretch of DNA. Researchers now use DNA chips or _____ to identify such variations in copy number.

3. One branch of neuroscience that can help bridge findings from the microscopic to the whole-brain level is _____ neuroscience. Researchers in this field develop theories or models about how the brain processes information, then test these models against real-world data.

4. The science of _____ has enhanced scientists' understanding of brain function at the level of genes, cells, and circuits. This can help identify genetic variations that cause conditions ranging from depression to schizophrenia to movement disorders.

5. This technique allows researchers to control brain activity with flashes of light. Scientists genetically modify a lab animal like a mouse so that its neurons produce a light-responsive protein.

6. *Drosophila melanogaster*, better known as the common _____ _____, is also commonly used to study behavior, especially how genes control behavior. For example, variations in a gene called 'foraging' determine whether Drosophila tend to roam around as they eat or sit in one place.

7. To understand how brain function drives behaviors in humans, researchers often turn to these models. Examples include sea slugs and rats.

8. This technique records human brain activity without invasive or harmful procedures. About 20 thin metal discs are placed on the scalp. Each disk is connected by thin wires to a machine that records the activity of neurons near the brain's surface.

9. Another technique for examining brain anatomy is _____ resonance imaging, or MRI. MRI equipment uses radio waves and strong magnets to create images of the brain based on the distribution of water within its tissues.

10. Researchers measure changes in the electrical charge of individual neurons using this technique. This technique can measure neuron activity inside the brains of living lab

animals such as rats or mice, enabling scientists to study how neurons transmit electrical information in their normal physical context.

Bonus across words: _____ _____