The Brain & Skull: *"Brain Reminders"*

GOAL

The goal of this lesson is for students to gain a better grasp of brain anatomy through the use of note-taking. Students will create their own study sheets, containing paraphrased definitions of the key brain anatomy terms used so far in Brain Explorers. The students should keep the study sheets in their folders as reference material for later activities.

Set-up:

-Worksheets for each student
-Definitions to be read by the teacher

PROCEDURE

Note: This lesson does not readily lend itself to the 5-E format. It follows the more traditional format of lecture/student response. Effective student response and involvement is the key to keeping the students engaged.

- Review the previous lesson on brain structures. Have students write the terms on the board. Ask the class to correct any spelling mistakes. Students at the board may call on classmates for help. Terms on the board should include: hemisphere, corpus callosum, cerebellum, brain stem.
- Introduce and discuss the concept of note-taking. Taking accurate notes is one of the best ways to organize information learned in a classroom. Writing things down in your own words is a good way to remember what jobs the different brain structures perform.
- Each student is given a sheet with the brain structures and spinal cord written on it, with at least three lines of blank space for the students to write in.
- Read the definitions on the next page to the class:
- Continue reading and re-reading each definition until every student has a reasonable note on every structure.

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PROCEDURE

Definitions:

Hemisphere-the brain is divided into a right and a left hemisphere. The right hemisphere lets us imagine and create things like art and music, and controls our emotions. The left hemisphere helps us do things like math and speaking languages.

Corpus Callosum- the bridge that lets the right and left hemispheres talk to one another. the corpus callosum is made up of millions of nerves that carry messages from one side of the brain to the other.

Cerebellum- the part of the brain that controls coordination and balance. When we ride a bike, walk a tightrope, or even just move around, we are using our cerebellum.

Brain Stem:- the part of the brain that controls things we don't have to think about, like our breathing, our heartbeat, and blinking. The brain stem also connects the brain to the spinal cord.

Spinal Cord:- the part of our body that carries messages to and from the brain. Like the corpus callosum, the spinal cord is made up of millions of nerves that let the brain tell the body what to do and how to do it. The spinal cord is in charge of *reflex actions*, things we do so fast that we don't have to think about them. When you pull your hand away from something hot, or pull your foot our of cold water, you are using your reflexes.

• After every definition is read, have various students read their notes to the class. The students notes should not be a verbatim repeat of the definition, rather a paraphrase in the student's own words that captures the gist of the definition. Gently correct any factual errors. Praise accuracy and originality.

•At the end of the lesson, pass out the Brain Explorer folders. The students should keep their notes for later reference. Collect the folders and store in the designated area.

Extension

A good extension to this class was done in conjunction with the physical education classes. The class was divided into five groups, and each group was given a brain structure to 'act out' for the rest of the class to guess the identity of. Some of the groups came up with highly original and entertaining pantomimes and bodily contortions. This activity usually took about 15 to 20 minutes.

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- **Key Cognitive Skills:**
  Describing, Organizing, Recording

- **Vocabulary Terms:**
  Taking notes
  Hemisphere(review)
  Corpus Callosum(review)
  Brain Stem(review)
  Cerebellum(review)
  Spinal Cord (new)
  Reflexes (new)

- **Specific Outcomes:**
  - Students will reinforce their knowledge of brain anatomy terms and functions.
  - Students will be introduced to the term 'spinal cord', and the concept of the nervous system. The term 'reflex' will be explained.
  - Students will be introduced to the concept of note-taking.
  - Students will paraphrase definitions of brain anatomy functions.
  - Students will learn to take effective notes for later reference.
  - Students will create a reference sheet.

PROJECT 2061 BENCHMARKS FOR SCIENTIFIC LITERACY

1 B Scientific Inquiry:
Describing things as accurately as possible is important in science because it enables people to compare their observations with those of others.
1 C The Scientific Enterprise:
Doing science involves many different kinds of work...
6 C Basic Functions:
The brain gets signals from all parts of the body telling what is going on there. The brain also sends signals to parts of the body to influence what they do.
6 D Learning:
Learning means using what one already knows to make sense out of new experiences or information, not just storing the new information in one's head.
8 E Information Processing:
Through experience and discussion, students should learn that writing on paper, [and] making drawings...are ways of capturing and saving information.
12 A Values and Attitudes
: ..students should be required to keep written records ..of what they did, what data they collected, and what they think the data mean.

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Notes

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