

# #9042

## BILL NYE THE SCIENCE GUY:

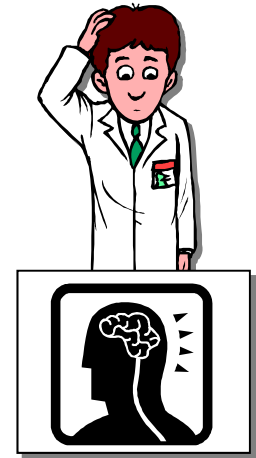
# BROUGHT TO YOU BY THE BRAIN

DISNEY EDUCATIONAL PRODUCTIONS

1994

Grade Levels: 5-9

26 minutes



### DESCRIPTION

Bill Nye explores facts about the brain, zeroing in on some of its functions, kinds of memory, optical illusions, and general information. Suggests activities and experiments that demonstrate the wonder of the brain.

### ACADEMIC STANDARDS

#### Subject Area: Science: Life Sciences

- Standard: Understands the structure and function of cells and organisms
  - Benchmark: Knows that living organisms have distinct structures and body systems that serve specific functions in growth, survival, and reproduction (e.g., various body structures for walking, flying, or swimming)
  - Benchmark: Knows that the behavior of individual organisms is influenced by internal cues (e.g., hunger) and external cues (e.g., changes in the environment), and that humans and other organisms have senses that help them to detect these cues
  - Benchmark: Understands the structure and functions of nervous systems in multicellular animals (e.g., nervous systems are formed from specialized cells that conduct signals rapidly through the long cell extensions that make up nerves; nerve cells communicate with each other by secreting specific excitatory and inhibitory molecules)

### INSTRUCTIONAL GOALS

1. To observe the brain and its functions.
2. To determine your brain's reaction time.
3. To demonstrate how vision relies on brain wave interpretations while establishing patterns of walking.
4. To dramatize whether humans have brain rhythms.

### AFTER SHOWING

#### Discussion Items and Questions

1. What controls all that you do?
2. What percentage of your brain do you use each day?
3. Where does your brain send electrical messages?

#### Applications and Activities

1. Have a partner drop a ruler between your fingers. Determine your reaction time by catching the ruler as quickly as possible. How many centimeters slip through your fingers? This is your *reaction time*.

2. Close your eyes and have a partner hold your arm. Place a prism up to one of your eyes. Open only the eye covered by the prism. With your partner's help, begin walking short distances to different areas of the classroom. Describe the results of this experiment in a journal. Repeat the above exercise, opening your "prism eye" at the start (allowing you to view the area to be walked). Cover the open eye with the prism and begin walking with your partner. Were you able to walk a straighter line when you viewed the area first? Explain any differences or similarities in the two experiments. Would your ability to walk straighter be improved by brain interpretations?
3. Make a 30-day chart and list the following behavior along the left side of the paper:
  - Sleep (time to bed, wake up, naps: did you sleep well?)
  - Eating habits (when hungry; time for breakfast, lunch, and dinner; best meal, snack; was appetite good or poor?)
 Any daily symptoms (headache, indigestion, result of exercise); moods (happy, sad, etc.). Also list any other human or environmental conditions that you feel may affect you. Does your brain play a role in determining these conditions? Can you condition your brain to adapt to change? What obvious rhythms have you noticed about yourself over 30 days?

## RELATED RESOURCES



### Captioned Media Program

- The Brain: The First Computer #8652
- Nervous System #2575



### World Wide Web

The following Web sites complement the contents of this guide; they were selected by professionals who have experience in teaching deaf and hard of hearing students. Every effort was made to select accurate, educationally relevant, and "kid safe" sites. However, teachers should preview them before use. The U.S. Department of Education, the National Association of the Deaf, and the Captioned Media Program do not endorse the sites and are not responsible for their content.

- **THE BRAIN IS THE BOSS**

[http://www.kidshealth.org/kid/body/brain\\_nosw.html](http://www.kidshealth.org/kid/body/brain_nosw.html)

From the KidsHealth site, read how the brain is responsible for controlling your body, including "You've Got Some Nerve!" "The Boss Is Always Busy," and other information on our gray matter.

- **SECRETS OF THE MIND**

<http://www.pbs.org/wgbh/nova/mind/>

NOVA offers you to play "Visual Mind Games," to read "From Ramachandran's Notebook," discover the "Electric Brain," and to "Probe the Brain" using Shockwave.

- **THE SECRET LIFE OF THE BRAIN**

<http://www.pbs.org/wnet/brain/>

See how a newborn to 6 months of age baby views the world. Observes the differences in a child's, teenage's, adult's, and older adult's brain. View a 3-D brain anatomy and discover other information about the brain.