

GLOSSARY

Cerebral Cortex – The deeply wrinkled, outer layer of nerve cells covering the cerebrum of the mammalian brain. Most highly developed and specialized in humans, regions of the cerebral cortex are vital to learning, thinking, imagining, communicating, sensory perception, emotions, memory and complex movement.

MRI – Magnetic Resonance Imaging. A non-invasive medical imaging technique used to examine the structure of softer parts of the body such as the brain, heart, blood vessels, bone marrow and cartilage.

Neurons – Specialized cells that make up the brain, each consisting of a cell body, a nerve fiber called an axon that transmits nerve impulses to other neurons and dendrites which receive nerve impulses from other neurons.

Pet – Position Emission Tomography (PET Scan). An x-ray medical imaging technique for internal body tissues that researchers use to produce images of activity in the brain.

Show Me Science

The Wonders of Physiology

The History of the Brain

May be reproduced for use in the classroom.

For a complete list of Educational programs, please visit our website at www.tmwmedia.com



TMW MEDIA GROUP, INC.

2321 Abbot Kinney Blvd., Venice, CA 90291

(310) 577-8581 Fax (310) 574-0886

Email: sale@tmwmedia.com

Web: www.tmwmedia.com

Producers & Distributors of Quality Educational Media

© 2012 Allegro Productions, Inc. and
TMW MEDIA GROUP, INC.

K4583DVD

Advanced Teachers Guide

SYNOPSIS:

The extraordinary complexity and power of the human brain gives each of us the capability to do things other creatures cannot, such as read and write. This program introduces brain physiology and function and explains what makes the human brain so exceptional. It shows how brains have advanced in complexity from the arrangement of a few nerve cells in the earliest and simplest creatures to the complexity of the mammalian brain.

CURRICULUM UNITS:

- Anthropology
- Biology
- Human Development
- Life Science
- Physiology
- Zoology

CAREER OPPORTUNITIES:

- Anthropologist
- Biologist
- Cognitive Psychologist
- Neurologist
- Neurosurgeon
- Teacher
- Zoologist

PROGRAM OVERVIEW:

Students will learn that brain development starts in the embryo and that our brain is more developed at birth than any other part of our body. The brain's neurons form intricate networks that receive and move information through the brain, defining our capabilities and who we are.

How the networks form is determined partly by what we inherit from our biological parents, but mostly by our experiences. The brain changes throughout life, but forms neural connections most rapidly in childhood. That is why, a child is usually able to learn to play a musical instrument or speak a foreign language more quickly than an adult.

ISSUES & CRITICAL THINKING:

- 1) After showing the program, ask the class the following:
How is the human brain different from the brains of other animals?
What is a brain cell called?
How does the size of the brain compare to the rest of a baby's body when it is born?
What influences how our brains grow?
- 2) To impress upon students that the adult brain weighs about 3 pounds, ask students to bring to class a vegetable, melon or other fruit that they think is the same size as their brains. Then, in class, weigh each piece