**Reading Outline for Plotnik’s Introduction to Psychology, 4th Edition**

**Module 4 “Incredible Nervous System”**

**Introduction**

***How do brains differ?***

Jason’s Brain: An Error in Instructions

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Lucy’s Brain: Perhaps the Beginning

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Steve’s Brain: A Cruel Twist of Fate

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Baby Theresa’s Brain: A Fatal Problem

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1. **Genes & Evolution**

1. Fertilization

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2. Zygote

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3. Chromosomes

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4. Chemical alphabet

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6. Fragile X syndrome

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**Evolution and the Human Brain**

Charles Darwin –

Theory of Evolution –

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*Why did skulls grow in size?*

Lucy’s Brain: Perhaps the Beginning

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Homo erectus

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Homo sapiens

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**B. Studying the Living Brain**

New Techniques

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CAT Scans –

MRI Scans –

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PET Scans –

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**C. Organization of the Brain**

*Divisions of the Nervous System*

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1. Two Divisions of the Nervous System

*Peripheral Nervous System*

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*Central Nervous System*

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2. Two Subdivisions of Peripheral Nervous System

*Somatic Nervous System*

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*Autonomic Nervous System*

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3. Two Subdivisions of Autonomic Nervous System

*Sympathetic Division*

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*Parasympathetic*

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*What Are the Three Major Parts of the Brain?*

1. Forebrain

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1. Midbrain

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3. Hindbrain

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3a. Pons

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3b. Medulla

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3c. Cerebellum

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**D. Control Centers: Four Lobes**

The Cortex –

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Frontal Lobe and Frontal Lobotomy

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*First Frontal Lobotomy: An Accident*

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*What is a Frontal Lobotomy?*

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*What Did Lobotomies Do?*

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Frontal Lobe: Functions

1. Motor Cortex

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2. Motor Cortex Organization

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3. Cognitive Functions

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Parietal Lobe: Functions

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1. Somatosensory Cortex –

1. Somatosensory Cortex Organization

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3. Cognitive Functions

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Temporal Lobe: Functions

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1. Audition or Hearing

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2. Wernicke’s Area

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3. Broca’s Area

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Occipital Lobes: Functions

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1. Vision

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2. Visual Agnosia

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3. Neglect Syndrome

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**E. Limbic System: Old Brain**

*Structures and Functions of the Limbic System*

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1. The hypothalamus –

2. The amygdala –

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- receives input from all the senses

3. The hippocampus –

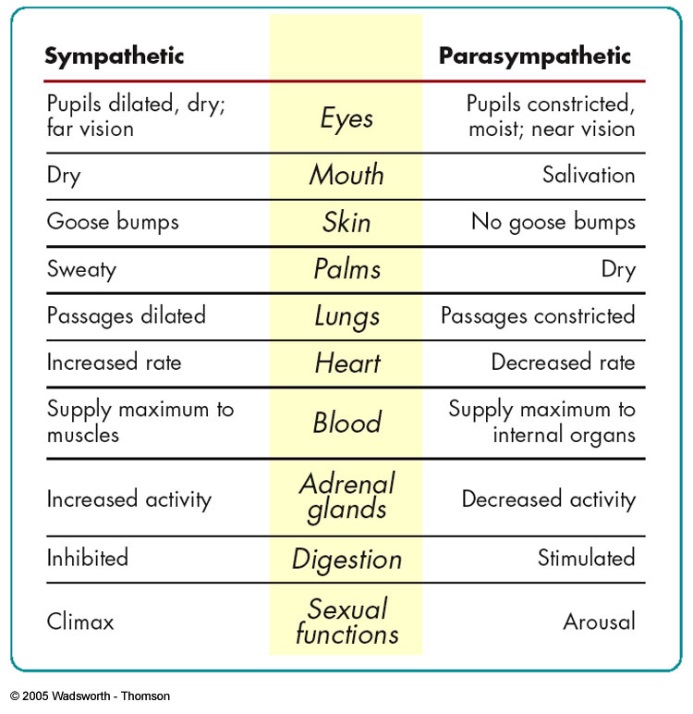
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4. The thalamus –

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Autonomic Nervous System

*What happens to your body when you see a snake or meditate?*

*Sympathetic Nervous System*

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*Parasympathetic Nervous System*

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Homeostasis

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**F. Endocrine System**

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Hypothalamus –

Pituitary gland –

*Dysfunction:*

Posterior pituitary –

*Dysfunction:*

Anterior pituitary –

*Dysfunction:*

Pancreas –

*Dysfunction:*

Thyroid –

*Dysfunction:*

Adrenal glands –

*Dysfunction:*

Gonads –

*Dysfunction:*

G. Research Focus: Sexual Differences

*Are There Sexual Differences in the Brain?*

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*Rotating Figure Problem*

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*Brain Organization*

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**H. Cultural Diversity: Racial Myths**

Skull Size and Intelligence

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Brain Size and Intelligence

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*What does a positive correlation between brain size and intelligence mean?*

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**I. Application: Split Brain**

*What is a Split Brain?*

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*How Does a Split-Brain Person Behave?*

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*How Is a Split-Brain Person Tested?*

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*Do the Hemispheres Have Special Tasks?*

Left Hemisphere

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Right Hemisphere

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How Do Brain Parts Interact?

*How is my brain organized?*

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*Am I “left-brained” or “right-brained”?*

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*Does the brain get better with use?*

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