Unit 4 Reading Guide
Sensation and Perception

Directions: While reading the assigned pages of the chapter, complete the reading guide below. Feel free to add additional information to the guide as you see fit.

Please Note: At the end of each module in your textbook, there are reviews, practice multiple choice questions, and practice free response questions. Occasionally, there are also "Thinking Critically About" sections within the chapter in blue boxes. You should always read these and beware of the content.

Module 16: Basic Principles of Sensation and Perception (pg. 151-162)

- **Sensation:**
- **Perception:**
- **Bottom-Up Processing:**
- **Top-Down Processing:**
- Describe an example that illustrates the difference between sensation and perception:

A. Selective Attention

- **Selective Attention**:
  - Example:
  - **Cocktail Party Effect**:
  - What does selective attention mean for how you should study? (or even do this reading guide?!)
  - **Inattentional blindness:**
  - **Change blindness**:

B. Transduction

- What are the 3 steps that are basic to all our sensory systems? All our senses…
- **Transduction:**
- **Psychophysics**:

C. Thresholds

- **Absolute Thresholds**

- Example:

- **Signal Detection Theory**:
  - Example:
- **Subliminal:**
- **Priming:**
  - Example:
- **Difference Threshold** (just noticeable difference):
- **Weber's Law**:

D. Sensory Adaptation

- **Sensory Adaptation**:
  - Example:
- Why do we have sensory adaptation—what is its important benefit?

Module 17: Influences on Perception (pg. 163-170)

- **Perceptual Set:**
  - Example:
- **Extrasensory perception(ESP):**
- **Parapsychology:**
- After reading the section "Thinking Critically About ESP", do you believe that ESP exists? Why/Why not?

Module 18: Vision (pg. 171-181)

A. The Stimulus Input: Light Energy

- *Wavelength* determines what?
- **Hue:**
- *Amplitude* determines what?
- **Intensity:**

B. The Eye

- **Cornea:**
- **Pupil:**

- **Iris:**
- **Lens:**
- **Retina:**
    - **Accommodation:**
    - **Rods:**
    - **Cones:**
    - **Bipolar Cells:**
    - **Ganglion Cells:**
- **Optic Nerve:**
- **Blind Spot:**
- **Fovea:**

C. Visual Information Processing

- After being processed in the retina, the optic nerve carries vision information to what part of the brain?
- **Feature Detectors** (Hubel & Wiesel):
- **Parallel Processing:**
    - Example:

aka. our brain is amazing!!

D. Color Vision

- **Young-Helmholtz Trichromatic Theory:**
    - 3 colors our eyes are sensitive to:
    - According to this theory, what causes colorblindness?
- **Opponent-Process Theory** (by Hering):
    - 3 sets of colors:
    - **Afterimages:**

<u>Module 19: Visual Organization and Interpretation (pg. 182-193)</u>

A. Visual Organization

- **Gestalt:**

- What is the fundamental truth underlying all of the Gestalt principles?
- **Figure-ground:**
- **Grouping:**

Gestalt Grouping Principle	Definition	Draw an example
Proximity		
Continuity		
Closure		

- **Depth Perception:**
- **Visual Cliff:**
- What did the visual cliff experiments demonstrate—is depth perception learned or not?
- **Binocular Depth Cues:**
    - **Retinal Disparity:**
- **Monocular Depth Cues:**
    - **Relative Height:**
    - **Relative Size:**
    - **Interposition:**
    - **Relative Motion:**
    - **Linear Perspective:**
    - **Light and Shadow:**
- **Phi Phenomenon:**
- **Perceptual Constancy:**
    - Examples:

- **Color Constancy:**

*comparisons govern our perceptions

- Example of size constancy:
- Example of shape constancy:

SOOOO many cool illusions with these 2!

- **Perceptual Adaptation:**
  - Example:

<u>Module 20: Hearing (pg. 194-201)</u>

- **Audition:**

A. The Stimulus Input: Sound Waves
- *Amplitude* determines what?
- *Frequency* determines what?
- What is sound measured in?

B. The Ear
- *Outer Ear:* **Eardrum:**
- *Middle Ear:* 3 bones in middle ear:
- *Inner Ear:* **cochlea:**
- Summary of hearing: Vibrations cause the cochlea's membrane to shake. This causes ripples in the _____, bending the _____ lining its surface. Hair cells convert the messages into neurons that are then sent by the _____ to the thalamus, then onto the _____ cortex in the _____lobe.
- What is the difference between sensorineural hearing loss and conduction hearing loss?
- Way to fix hearing problems: **Cochlear implant**:
- How do we interpret loudness of a sound?
- How do we perceive pitch?
  - **Place Theory:**
  - **Frequency Theory:**
  - **Volley Principle:**
- How do we locate the source of sounds?

Module 21: The Other Senses (pg. 202-213)

A. Touch

- What are the 4 distinct skin senses that make up touch? (aka. Your body has receptors for these 4)
- Why do you need to feel pain?
- Pain= combination of sense of touch and your BRAIN!!
- **Gate-Control Theory** (for pain):
- What are phantom limb sensations?
- List 2 examples of psychological influences of pain.
- List 2 examples of social-cultural influences of pain.

B. Taste

- What are the 4 basic tastes?
- What is the newest 5th one? Describe it.
- Taste is a chemical sense. What does that mean for how it works?

C. Smell

- What is the scientific name for smell? (hint: it starts with an O)
- Because it is a primitive sense, what part of the brain does smell bypass?
- Do we have a distinct receptor for each detectable odor?
- Smell's have a huge power to trigger memories!

D. Body Position and Movement

- **Kinesthesia:**
- **Vestibular Sense:**
    - Where are the biological parts for your sense of equilibrium located?

E. Sensory Interaction

- **Sensory Interaction:**
    - Example:
- **Embodied Cognition:**
    - Example: