forming an identity
- sense of self
  - intimacy: ability to form close, loving relationships
  - parental and peer influence
    - adolescence: diminishing parent influence, increasing peer influence

EMERGING ADULTHOOD
- emotional ties with parents loosen
  - fluid intelligence: abstract ability increases with age

SENSATION + PERCEPTION
sensory goes through stimuli to transduction
- stimuli become neural impulses

sensory adaptation (decreasing responsiveness due to constant exposure)
- sensory habituation (perception is due to how focused we are on the)

sensation = activation of our senses
perception = process of understanding these sensations

Energy Senses
- Vision
  - steps: 1. gathering light
    - light is reflected off objects and gathered by the eyes
    - colour depends on: light intensity, wavelength
  - 2. within the eye
    - reflected light enters cornea (protection) focus
    - then, pupil (muscles around pupil) dilate or tighten to control the amount of light
    - accommodation: light is focused by the lens
    - image is flipped upside down and projected on the retina
3. Transduction
- Occurs when light activates neurons in retina
  - Several layers

First layer: cones + rods
  - Activated by colour to cells that detect bleached
  - More rods than cones
  - Cones are concentrated towards center (most at fovea)

Second layer: bipolar

Third layer: ganglion cells
  - Axons of these cells = optic nerve
  - Send impulses to LGN (lateral geniculate nucleus)

Spot where optic nerve leaves retina has no rods/cones = blind spot
- Optic nerve is split into two (left side = left hemisphere; right side = right hemisphere)
- Spot where they cross = optic chiasm

4. In the brain
- Visual cortex (Occipital lobe) receives impulses from retina - activate
  "Feature detectors"
- Groups of neurons in visual cortex respond to different types of images (lines, curves, motion, etc...)

Colour Vision
- Trichromatic theory
  - We have 3 types of cones (detect blue, green, red)
  - Cannot explain afterimages/color blindness

Opponent Process Theory
- Sensory receptors are in pairs
  - Missing one pair = colour blindness

Far-sighted - focus behind retina
Near-sighted - focus in front of retina
Parallel processing - separate colour, motion, form, depth
top down → behavior is influenced by cognition

bottom up → data driven, perception directs cognition

Threshold: minimum stimulus to detect stimulus 50% of the time

*Signal detection theory - when do we detect faint stimuli?

difference threshold: minimum difference we can detect 50% of the time

Subliminal → below one's threshold

Priming: unconscious associations

Weber's law: to be different, stimuli must differ by min. percentage

Hearing → audition

Stimulus: sound wave

Frequency determines pitch

Amplitude determines volume, loudness by # of activated hair cells in cochlea

Cochlea: fluid fills tube, e-transduction

High frequency theory: different sound waves trigger activity along the membrane

Low frequency theory: frequency of neural impulses

Placement → stereophonic (3D dimensional)

Linear ear → auditory distribution

Locate sounds through time lags

Touch: pressure, warmth, cold and (pain) biological, psychological, social

Gate control theory: small fibers open neural gate to feel pain and large fibers close gate

Gate: sensory interaction (smell)

Chemical sense

Smell: chemical sense (molecules reach receptors in nasal cavity)

vestibular sense = balance

L > Semi-circular canals
PERCEPTION
- Gestalt theory: integrate pieces into wholes
- Figure and ground: something against a background
- Grouping - tendency to organize stimuli into groups
- Perceptual constancy - enables us to perceive objects as unchanging
- Perceptual set - mental predisposition to perceive one thing but not the other

Consciousness Ch. 7
- Circadian rhythm: biological clock (regular bodily rhythm)
- Stages of sleep
  - STAGE 1
  - STAGE 2 - sleep spindles (bursts of rapid activity)
  - STAGE 3 - M
  - STAGE 4 - M, delta waves, slow
- REM breathing is rapid, irregular, eyes dart, dreams

Disorders
- Insomnia: can't fall asleep, trouble staying asleep
- Narcolepsy: periodic overwhelming sleepiness
- Apnea - tired, intakes (obese men)
- Sleepwalking - children talk incoherently, x2 heart/breathing rate, terrified

Hypnosis - must be intelligent, must be willing
- Drugs - withdrawal, dependence
- Receptor sites: dopamine high

LEARNING Ch. 8
- Associative learning: learning that 2 events occur together
- Conditioning: process of learning associations
- Operant - associate a response and its consequence
- Classical - associate 2 stimuli to anticipate events