## The basics

Sensation vs. perception
- Bottom-up processing
- Top-down processing

Prosopagnosia

Thresholds

Psychophysics
- Absolute threshold
- Signal detection theory
- Subliminal messages
- Difference threshold (JND)
  - Weber’s Law/Fechner’s Law

Sensory adaptation

Transduction

Receptors

## Other senses

Touch
- Pressure, temperature, pain
  - Nociceptors
  - Gate-control theory

Taste (gustatory sense - chemical)
- Sweet, sour, salty, bitter, umami
- Taste buds

Sensor interaction
  - McGurk effect

Smell (olfactory sense - chemical)
- Does not go through the thalamus
  - Direct route to limbic system

Kinesthesis (proprioception)

Vestibular sense
  - Semicircular canals

Synesthesia

## SENSATION

### Vision

- Light energy
- Wavelength (color)
- Amplitude (brightness)

### Parts of the eye
- Cornea
- Pupil
- Lens
  - Accommodation
- Retina (transduction here)
  - Rods (120 million)
  - Cones (6 million)
- Fovea
- Bipolar cells
- Blind spot
- Ganglion cells
- Optic nerve to occipital lobe

### Visual acuity
- Nearsightedness/farsightedness

### Feature detectors
- Parallel processing

### McPherson effect

### Color interpretation
- Young-Helmholtz theory
  - Additive color mixing
  - Opponent-process theory
  - Afterimages

### Audition (hearing)

- Sound energy
- Frequency (pitch)
- Amplitude (loudness)
  - Measured in dB (decibels)
  - Every 10 dB = 10 times louder

- Parts of the ear
  - Outer ear
    - Pinna (visible part)
  - Auditory canal
  - Middle ear
    - Tympanic membrane (eardrum)
    - Ossicles (hammer, anvil, stirrup)
  - Inner ear
    - Oval window
    - Cochlea
      - Basilar membrane
      - Hair cells (transduction here)
      - Organ of Corti
    - Semicircular canals (NOT for hearing)

### Hearing loss
- Sensorineural hearing loss
  - Cochlear implant
- Conduction hearing loss

### Perception sound
- Place theory
- Frequency theory
- Volley principle

### Sound localization

### Hearing loss
- Sensorineural hearing loss
- Cochlear implant
- Conduction hearing loss
The basics
Sensation vs. perception
Bottom-up processing
Top-down processing
Prosopagnosia
Selective attention
Cocktail party effect
Inattentional blindness
Change blindness
Visual capture

Perceptual organization
Figure-ground relationship
Gestalt principles
Proximity
Similarity
Continuity
Connectedness
Closure

PERCEPTION
Visual perception
Depth perception
Binocular cues
Retinal disparity
Convergence
Visual cliff
Monocular cues
Linear perspective
Relative size
Interposition
Relative clarity
Texture gradient
Relative height
Light & shadow
Motion perception
Relative motion (motion parallax)
Stroboscopic movement
Phi phenomenon
Constancies
Color constancy
Size constancy
Shape constancy
Lightness constancy
Illusions
Muller-Lyer illusion
Cultural influence
Ponzo illusion
Moon illusion
Subjective contours
Sensory deprivation
Critical periods

Other principles
Perceptual adaptation
Perceptual set
Context effects
Human factors
ESP (extra-sensory perception)?
Parapsychology
Telepathy
Clairvoyance
Precognition
Psychokinesis
Way to test: Ganzfeld procedure