

Create a Paper Slide Presentation of Your Assigned Sense

The presentation should be long enough to include ALL of the requirements depending on which sense you are assigned (see the next page for details).

Each Presentation MUST Include ALL of the Following Components:

1) A paper slide video

2) You must email me the video by 6 pm the night ***before*** class!

3) Be Sure to Include:

* The sense organ(s), parts (with labels, explanations), and their functions

* Other parts of the system. In particular, explain how the process of ***transduction*** occurs. (How does the system convert an external physical stimulus into electrical/neural signals?)

* Note that you should focus on ***sensation***, the process by which the body converts stimuli into neural signals, not ***perception***, the process by which the brain makes sense of those impulses. It's OK to include ***some*** perception, especially if it makes your presentation more interesting, but it should not be the main point of your presentation.

* See the next page for the “required terms and concepts” for each group. It is ***your*** responsibility to explain to the rest of the class what they need to know about sensation! You are encouraged to include more information, of course—be creative and interesting!—but make sure that you teach everyone the basics they need to know.

4) A short **handout** explaining the system. This will be the “take home” information for your fellow students, so be sure that, while it includes what they need to know, it is also clear and concise!

5) A **class activity** or experiment (even if it is very short) that will help your classmates learn about the sensory system you are presenting.

Your Presentation will be Graded Using the Following Criteria:

- **Basic content** – You should good understanding and knowledge of the required terms/concepts, and provide a good explanation of “how they work”.
- **Presentation & Additional Content** – You are clear, thorough, and interesting. You should present the requirement elements, and a *little* more. (If in doubt, include more “fun stuff” rather than more “technical stuff.”) You answer questions well.
- **Visual aids** – Your video slide presentation is clear, thorough, and easy to read, hear and understand.
- **Handout** – Your handout is clear and provides a good summary, but not too much.
- **Activity** – Your class activity/demo/experiment is relevant, interesting, and engaging.

Everyone in each group should read the relevant sections of the textbook before our first classroom workday. We will spend two classes working on your paper slide videos and research; you should finish all of your research and most (or all) of your preparation (of the video, handout, and activity) during this time. ***Think hard about how best to divide up the work!*** Good organization early on makes for an easier and more successful project in the end.

SENSES:

VISION (8 group members)

Focus on the eye and on color vision. Don't focus on depth perception; we'll handle that later in class.

Be sure to include the following terms and concepts, though you may include others too:

intensity / amplitude / brightness of light

frequencies of light (wavelengths = opposite), visible spectrum

cornea, lens, iris, "accommodation", iris, pupil, retina, fovea, macula, rods, cones, differences between rods and cones, bipolar cells, ganglion cells, optic nerve, receptive field, blind spot (why/where it exists), lateral geniculate nucleus (LGN), optic chiasm

color vision (trichromatic theory, opponent-process theory), afterimages

color blindness (monochromacy, dichromacy, anomalous trichromacy)

HEARING/ AUDITION (7 group members)

Be sure to include the following terms and concepts:

intensity / amplitude / loudness

frequency (pitch)

timbre (complexity, quality of sound)

outer ear, pinna, other directional cue(s), ear canal, ear drum (tympanic membrane), middle ear, hammer (malleus), anvil (incus), stirrup (stapes), inner ear, oval window, cochlea, basilar membrane, tectorial membrane, hair cells, organ of Corti, semicircular canal (for balance, not hearing), auditory nerve,

conduction deafness, sensorineural/nerve deafness, cochlear implant, pitch theories (place theory,

frequency/match theory)

TOUCH (5 group members)

Be sure to include:

types of receptors, differential concentration of receptors, pain, fast pathway, slow pathway, gate-control theory, endorphins

SMELL/ OLFACTION (5 group members)

Be sure to include:

cilia, olfactory bulb, olfactory receptor cells, how smell differs from other senses (e.g. signals do not go directly to thalamus!), pheromones

TASTE / GUSTATION (5 group members)

Be sure to include:

papillae, taste buds, sweet, sour, salty, bitter, umami, role of smell in determining taste

VESTIBULAR SENSE, KINESTHETIC SENSE, and other "forgotten senses"! (5 group members)

Be sure to include:

role of semicircular canals (in inner ear), proprioception, body awareness