

Sensation and Perception

Monday – Day 1	Tuesday – Day 2	Wednesday – Day 3	Thursday – Day 4	Friday – Day 5
<p>9:00-11:30am <i>Introductions</i> ★ learning names ★ community builders</p> <p><i>Class Introductions</i> ★ class expectations, syllabus/topics ★ students creating classroom rules, honor code signing</p> <p><i>Question of the Day: What does it mean to “do science”?</i> ★ Gretta’s Cure: using senses of taste, touch, sight to determine the mystery substance</p>	<p>9:00-11:30am <i>Question of the Day: If a body part is paralyzed you can’t move it. Why not?</i> ★ write initial ideas about question, share w/ group</p> <p><i>Reaction Time activities and discussion of results</i> ★ group reaction time (squeezing hands vs. shoulders), individual dropping of ruler ★ in journals answer questions about results</p> <p><i>Notes on structure of neurons</i></p>	<p>9:00-11:30am <i>Review how neurons work, list steps of process as class</i></p> <p><i>Building a model of how neurons work</i> ★ using dominoes, marbles, rulers, etc. ★ use list just made to help, but don’t need to incorporate all of steps, but as many as possible ★ present model to class and which steps it represents</p>	<p>9:00-11:30am <i>Left Brain/Right Brain “test” for dominance</i></p> <p><i>Review brain structures</i></p> <p><i>Create brain collage, present if time</i> ★ cutting pictures from magazines/newspapers to represent structures of the brain ★ focus mainly on the lobes of the cerebrum and the cerebellum</p>	<p>9:00-11:30am <i>Question of the Day: If a tree falls in the woods and no one is around to hear it, does it still make a sound? Why or Why not?</i> ★ write initial ideas about question, share w/ group or class</p> <p><i>Sound activities</i> ★ vibrations of rulers, tuning forks</p> <p><i>Sound notes</i> ★ what is sound, frequency, pitch, amplitude, loud/soft</p>
<p>12:30-2:30pm <i>Finish Gretta’s Cure, discuss</i></p> <p><i>Lab Safety Rules</i> ★ lab safety skit: break into small groups, choose rule to act out ★ lab safety quiz</p> <p><i>What does it mean to “do science”? cont...</i> ★ using senses of hear, touch to determine the design of the inside of mystery box</p>	<p>12:30-2:30pm <i>Create model of neuron with craft supplies</i> ★ present models to class or small groups</p>	<p>12:30-2:30pm <i>Thinking Stations: brain games</i> ★ Stroop test ★ language/math puzzles ★ memory game ★ emotions from a picture</p> <p><i>Discussion of stations, read about brain imaging</i></p> <p><i>Begin brain notes</i> ★ protection ★ structures and functions ★ fill out diagram of brain</p>	<p>12:30-2:30pm <i>Sheep brain dissection</i> ★ review lab safety ★ discuss function/use of dissection tools ★ dissect, find structures based on class notes ★ clean up</p> <p><i>Read “Phantoms” from Sacks book</i></p>	<p>12:30-2:30pm <i>Location of Sound activity, discussion</i> ★ how does shape/location of human ears help or hinder sound location? ★ students sit in circle with noise makers, 1 student in center blindfolded to try to guess where in circle sound is coming from</p>
<p>2:45-4:15pm <i>Finish mystery boxes activity</i></p> <p><i>Pre-assessment quiz</i></p> <p><i>Answer Question of the Day using detail from class notes and activities</i></p> <p><i>Decorate BSEN journal</i></p> <p><i>Write intro letter to INST and TA</i></p>	<p>2:45-4:15pm <i>Begin notes on how neurons transmit signals</i> ★ begin with moving ball down bodies laying on floor, how is this like neurons and how they work? ★ give notes ★ play Synaptic tag if time ★ think about reaction time activities, relate to notes ★ reflexes vs. voluntary and involuntary movements</p>	<p>2:45-4:15pm <i>Finish brain notes</i></p> <p><i>Video <u>Make Up Your Mind</u> from Scientific American Frontiers</i></p> <p><i>Answer Question of the Day from Tuesday using detail from class notes and activities</i></p> <p><i>Read “Brains” from Grossology & You</i></p>	<p>2:45-4:15pm <i>Students create review questions based on neurons/brain</i></p> <p><i>Play game to review</i></p> <p><i>Take neuron/brain quiz</i></p>	<p>Sunday Evening 6:00-8:30pm <i>Creating better ears</i> ★ create ears to better hear location of sound based on Friday’s activity</p>

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Monday – Day 6	Tuesday – Day 7	Wednesday – Day 8	Thursday – Day 9	Friday – Day 10
<p>9:00-11:30am <i>Finish creating better ears</i> ★ try ears, which new ears were better or worse and why?</p> <p><i>Notes on how we hear</i> ★ anatomy of the ear ★ cochlea demo</p> <p><i>Hearing in mono/stereo</i> ★ testing determination of sound distance using one ear vs. two ★ are two ears better than one?</p>	<p>9:00-11:30am <i>Equilibrium and Balance activities</i> ★ why do we get dizzy? ★ how do we balance under different conditions? ★ what does this have to do with the ear?</p> <p><i>Notes on vestibular system and inner ear</i></p> <p><i>Question of the Day: If you are placed in a cave that receives no light, will you be able to see?</i></p>	<p>9:00-11:30am <i>Vision activities, discussion</i> ★ eye chart ★ color blindness ★ optical illusions ★ blind spot ★ afterimage ★ 3-D images</p> <p><i>Parts of the eye and their functions</i></p>	<p>9:00-11:30am <i>Dominant eye tests cont.</i> ★ try tests with class, record results, present results</p> <p><i>Read “Eyeballs” from Grossology</i></p> <p><i>Answer Question of the Day about vision using detail from notes and activities</i></p>	<p>9:00-11:30am <i>Finish how we smell notes, smell and memory</i></p> <p><i>Class prize for this week’s earned stickers</i></p> <p><i>Computer lab: research answers to questions that we couldn’t answer throughout the week (10:15-lunch), present answers to rest of class</i></p> <p><i>Read “The Dog Beneath the Skin” from Sacks</i></p>
<p>12:30-2:30pm <i>Finish hearing in mono/stereo, discussion</i></p> <p><i>Hearing loss</i> ★ hair cell models ★ sound meter ★ hearing loss</p>	<p>12:30-2:30pm <i>Light activities</i> ★ black tubes, when can you see the design ★ marbles hitting dominoes, how is this like how light works?</p> <p><i>Begin notes on light, light waves, electromagnetic spectrum</i></p>	<p>12:30-2:30pm <i>Cow eye dissection</i> ★ review lab safety ★ discuss function/use of dissection tools ★ dissect, find structures based on class notes ★ clean up</p> <p><i>Read “Man Who Mistook His Wife for a Hat” from Sacks</i></p>	<p>12:30-2:30pm <i>Debate: Whose eye is better, the octopus or the dragonfly?</i></p> <p><i>Question of the Day: Can something really “taste like it smells?”</i> ★ write initial ideas about question, share w/ group or class</p>	<p>12:30-2:30pm <i>Tongue mapping activity</i> ★ do we taste on different parts of our tongue? ★ examine class results, discussion</p> <p><i>What is taste?</i> ★ discuss 5 tastes and purposes ★ umami article</p>
<p>2:45-4:15pm <i>Sound and Fury video – the debate about cochlea implants (80 minutes)</i></p> <p><i>Answer Question of the Day about sound using detail from notes and activities</i></p> <p><i>Read “Ear Wax” from Grossology</i></p>	<p>2:45-4:15pm <i>Colors of art vs. colors of light, why do we see colors activities</i> ★ flashlights w/ filters ★ making white light out of colored light ★ rainbow glasses, diffraction</p> <p><i>Sound vs. light bingo game</i></p>	<p>2:45-4:15pm <i>Dominant eye tests</i> ★ why does it work/not work? ★ why do we need a dominant eye? ★ develop own tests in groups</p>	<p>2:45-4:15pm <i>“Nose” stalgia lab, discuss</i> ★ what does it smell like? ★ why do smells bring back memories?</p> <p><i>Diffusion demonstration w/ perfume, smell “fatigue”</i></p> <p><i>How we smell notes</i> ★ anatomy of the nose</p>	<p>Sunday Evening 6:00-8:30pm <i>Supertaster activity</i> ★ counting tastebuds ★ anatomy of the tongue ★ the genetics behind tasting</p> <p><i>Read “Tongue” from Grossology</i></p> <p><i>Write 2nd letter to INST/TA</i></p>

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Monday – Day 11	Tuesday – Day 12	Wednesday – Day 13	Thursday – Day 14	Friday – Day 15
<p>9:00-11:30am <i>Eliminating other senses activity</i> ★ taste testing when other senses are not used, what do we taste and why? <i>Why are peppers hot?</i> <i>Answer Question of the Day about smell/ taste using detail from notes and activities</i></p>	<p>9:00-11:30am <i>Finish touch notes</i> <i>Answer Question of the Day about touch using detail from notes and activities</i> <i>Present final project outline, form pairs, begin brainstorming</i></p>	<p>9:00-11:30am <i>Set up for experiments, begin testing classmates</i> <i>Rest of class during this time:</i> <i>Read “Sneeze” from Grossology</i> <i>Making fake snot</i></p>	<p>9:00-11:30am <i>Write up data from experiments, write conclusions, make presentation</i></p>	<p>9:00-11:30am <i>Greenhouse tour using all the senses</i> <i>Reflection on BSEN</i> <i>Clean up and goodbye!</i></p>
<p>12:30-2:30pm <i>Question of the Day: My knee surgery example: Itching where it’s numb-why numb and now not? How could I feel the itch but not be able to itch it?</i> ★ write initial ideas about question, share w/ group or class <i>Touch activities</i> ★ finding the most sensitive body part (2-touch discrimination test) ★ where is it and why? what is least sensitive and why?</p>	<p>12:30-2:30pm <i>Computer lab in library to type project pieces to date, research any unknown information</i> <i>Finalize projects to be carried out tomorrow</i></p>	<p>12:30-2:30pm <i>Continue testing classmates</i> <i>Show video to rest of class during this time: NOVA Adventure in Science <u>Taste</u> (60min.)</i> <i>Read from Sacks any related chapters which have not yet been read</i></p>	<p>12:30-2:30pm <i>Presentations about experiments, further questions that could be asked</i></p>	
<p>2:45-4:15pm <i>How we feel notes</i> ★ anatomy of our skin ★ pain, pressure receptors <i>How does temperature affect pressure sensitivity?</i> ★ soak hand in cold water and hot water, do 2-touch discrimination again</p>	<p>2:45-4:15pm <i>Proprioception-the 6th sense, tells where your body is in space</i> <i>Read “The Disembodied Lady” from Sacks</i> <i>Balance and Motion</i> ★ how vision, vestibular system, and proprioception are related</p>	<p>2:45-4:15pm <i>Finish testing classmates</i> <i>Reviewing all senses game</i></p>	<p>2:45-4:15pm <i>BSEN Jeopardy game</i> <i>Summative assessment of all senses</i></p>	