

Senses

Worksheet 1 - teacher's notes

1. Think about your favourite song. Your favourite food. Your favourite film. What senses do you activate? How many senses are there? Can you name them all?
2. Let's learn some idiomatic expressions connected with the senses. In pairs go on line and try to complete the chart with 2-3 idioms per each sense:

SENSE	IDIOM	MEANING/EXAMPLE
Sense of Taste	<ul style="list-style-type: none"> • <i>A Taste Of Your Own Medicine.</i> • <i>Bite Your Tongue</i> • <i>A Still Tongue Keeps a Wise Head</i> • <i>something leaves a bad taste in your mouth</i> 	<ul style="list-style-type: none"> • <i>When you are mistreated the same way you mistreat others</i> • <i>To avoid talking.</i> • <i>Wise people don't talk much</i> • <i>you continue to feel unhappy or disappointed about it for a considerable amount of time afterwards</i>
Sense of Smell	<ul style="list-style-type: none"> • <i>Smell A Rat</i> • <i>Smell Something Fishy</i> 	<ul style="list-style-type: none"> • <i>To detect someone in the group is betraying the others.</i> • <i>Detecting that something isn't right and there might be a reason for it.</i>
Sense of Hearing	<ul style="list-style-type: none"> • <i>Actions Speak Louder Than Words</i> • <i>Lend Me Your Ear</i> • <i>Pick up your ears</i> • <i>Van Gogh's ear for music</i> 	<ul style="list-style-type: none"> • <i>It's better to actually do something than just talk about it.</i> • <i>To politely ask for someone's full attention.</i> • <i>To listen very carefully.</i> • <i>Tone deaf.</i>
Sense of Sight	<ul style="list-style-type: none"> • <i>Apple of My Eye</i> • <i>Keep An Eye On Him</i> • <i>Turn A Blind Eye</i> 	<ul style="list-style-type: none"> • <i>Someone who is cherished above all others.</i> • <i>You should carefully watch him.</i> • <i>Refuse to acknowledge something you know is real or legit.</i>
Sense of touch	<ul style="list-style-type: none"> • <i>To be a soft touch</i> • <i>To have the magic touch</i> 	<ul style="list-style-type: none"> • <i>someone who can be persuaded very easily to do something, for example, to give you money</i> • <i>a person who has a talent for solving difficult problems or resolving tricky situations.</i>

suggested pages: <http://lifeevolution.wordpress.com/science-unlimited/idioms-on-senses/>

<http://www.onestopenglish.com/community/your-english/idioms/your-english-idioms-the-senses/550177.article>

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3. Let's explore the senses.

Taste

What are *papillae*? taste buds on our tongue

What flavor can we taste? The tongue is only able to taste four separate flavors: salty, sweet, sour and bitter.

What other information apart from flavours can our tongue feel? Not only can your tongue taste, but it also picks up texture and temperature in your food like creamy, crunchy, hot or dry.

Sight

Explain the terms: *lens* the portion of the eye that bends light to focus images on the *retina*, retina the back portion of the eye on which images are sensed, *cones* the part of the retina which sees color, *rods* the part of the eye which senses dark and light, *optic nerve* the nerve that takes messages from the eye to the brain.

What is the function of the optic nerve? send messages from the eye to the brain

Why are some people colorblind?

Most color vision problems are inherited (genetic) and are present at birth. People usually have three types of cone cells in the eye. Each type senses either red, green, or blue light. You see color when your cone cells sense different amounts of these three basic colors. The highest concentration of cone cells are found in the macula, which is the central part of the retina

Inherited color blindness happens when you don't have one of these types of cone cells or they don't work right. You may not see one of these three basic colors, or you may see a different shade of that color or a different color. This type of color vision problem doesn't change over time.

A color vision problem isn't always inherited. In some cases, a person can have an acquired color vision problem. This can be caused by:

- *Aging.*
- *Eye problems, such as glaucoma, macular degeneration, cataracts, or diabetic retinopathy.*
- *Injury to the eye.*
- *Side effects of some medicines.*

(do the test: <http://www.nlm.nih.gov/medlineplus/ency/imagepages/9962.htm>)

Touch

What four kinds of touch sensation can be identified? *There are four kinds of touch sensations that can be identified: cold, heat, contact, and pain.*

How can a sense of touch help blind people? *People who are blind can use their sense of touch to read Braille - a kind of writing that uses a series of bumps to represent different letters of the alphabets. The fingertips have a greater concentration of nerve endings.*

How does your hand tell the difference between hot and cold surfaces? *The skin, including the skin on your hands, has thermoreceptors that send messages to the brain about temperature. However, they respond to CHANGES in temperature, not temperature itself. Thus, if you come in from the cold, all surface temperatures will feel very warm, but gradually as you warm up, the surfaces will seem neutral. Also, think about what happens when you put your hand in a lake on a hot day - it feels really cold, but if you jump in, eventually your skin will adjust to the temperature. Now, if the surface is burning hot or freezing cold, the pain receptors, not the thermoreceptors, in your skin react.*

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Smell

What are mucous membranes? *a body tissue that lines air passages and is in contact with air*

What is olfactory nerve? *nerve that transports smell signals to the brain*

How are the senses of smell and taste related? How is your sense of taste affected if you hold your nose while eating? *Taste and smell are separate senses with their own receptor organs, yet they are intimately entwined. Tastants, chemicals in foods, are detected by taste buds, which consist of special sensory cells. When stimulated, these cells send signals to specific areas of the brain, which make us conscious of the perception of taste. Similarly, specialized cells in the nose pick up odorants, airborne odor molecules. Odorants stimulate receptor proteins found on hairlike cilia at the tips of the sensory cells, a process that initiates a neural response. Ultimately, messages about taste and smell converge, allowing us to detect the flavors of food. This close relationship is most apparent in how we perceive the flavors of food. As anyone with a head cold can attest, food "tastes" different when the sense of smell is impaired. Actually, what is really being affected is the flavor of the food, or the combination of taste and smell. That's because only the taste, not the food odors, are being detected.*

Hearing

Apart from hearing the ear is responsible for one other function. What is it? *balance*

How do we hear? *The outer ear protrudes away from the head and is shaped like a cup to direct sounds toward the tympanic membrane, which transmits vibrations to the inner ear through a series of small bones in the middle ear called the malleus, incus and stapes. The inner ear, or cochlea, is a spiral-shaped chamber covered internally by nerve fibers that react to the vibrations and transmit impulses to the brain via the auditory nerve. The brain combines the input of our two ears to determine the direction and distance of sounds.*

How do our brain determine distance and direction of sounds? *The brain uses the sounds from both the left and the right ear to determine distance and direction of sounds.*

<http://idahoptv.org/dialogue4kids/season10/senses/facts.cfm>

<http://www.nlm.nih.gov/medlineplus/ency/imagepages/9962.htm>

<http://www.scientificpsychic.com/workbook/chapter2.htm>

<http://www.webmd.com/eye-health/tc/color-blindness-topic-overview>

<http://www.brainfacts.org/sensing-thinking-behaving/senses-and-perception/articles/2012/taste-and-smell/>

plus other websites