

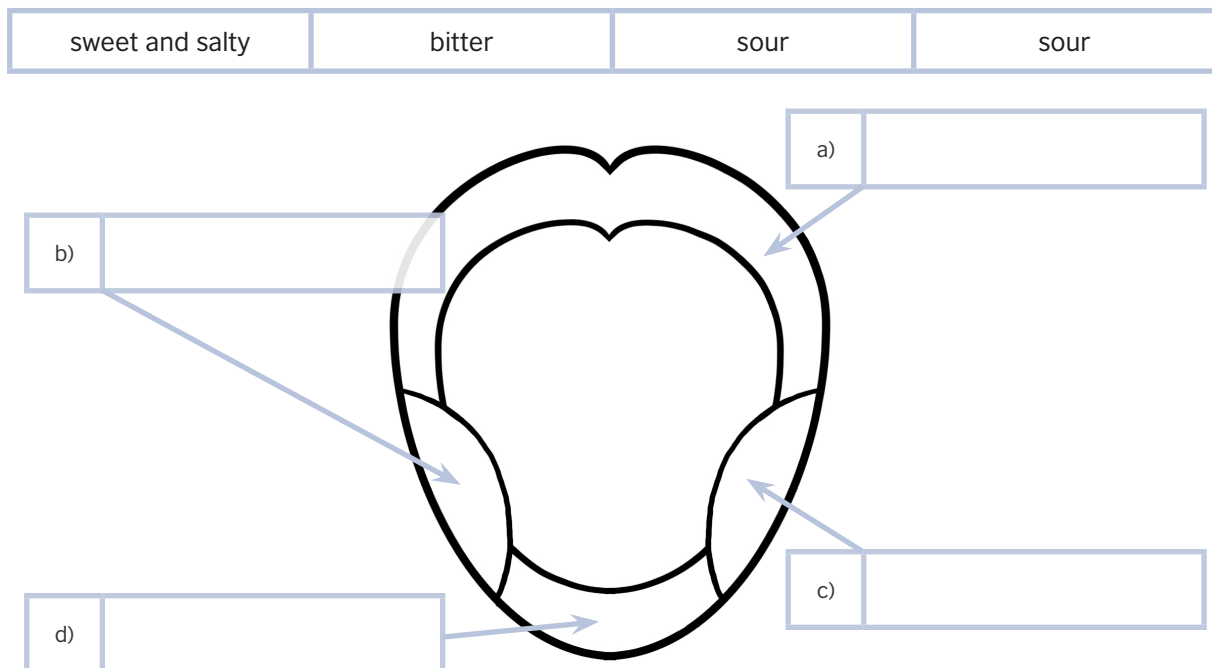
Science

Topic 4: Sensory Organs

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1. Read the text and label the diagram with the words about **taste**.

The tongue is a strong muscle in the mouth that is covered with small bumps for tasting called papillae, or taste buds. The tastes these buds sense are bitter, sweet, salty, sour and mixtures of these flavours. The taste buds towards the back pick up bitter tastes. Tastes like sugar and salt are picked up by taste buds at the front of the tongue. Tastes that are sour (like lemon juice) are mostly picked up by taste buds at the middle of the tongue, at the sides and near the front.



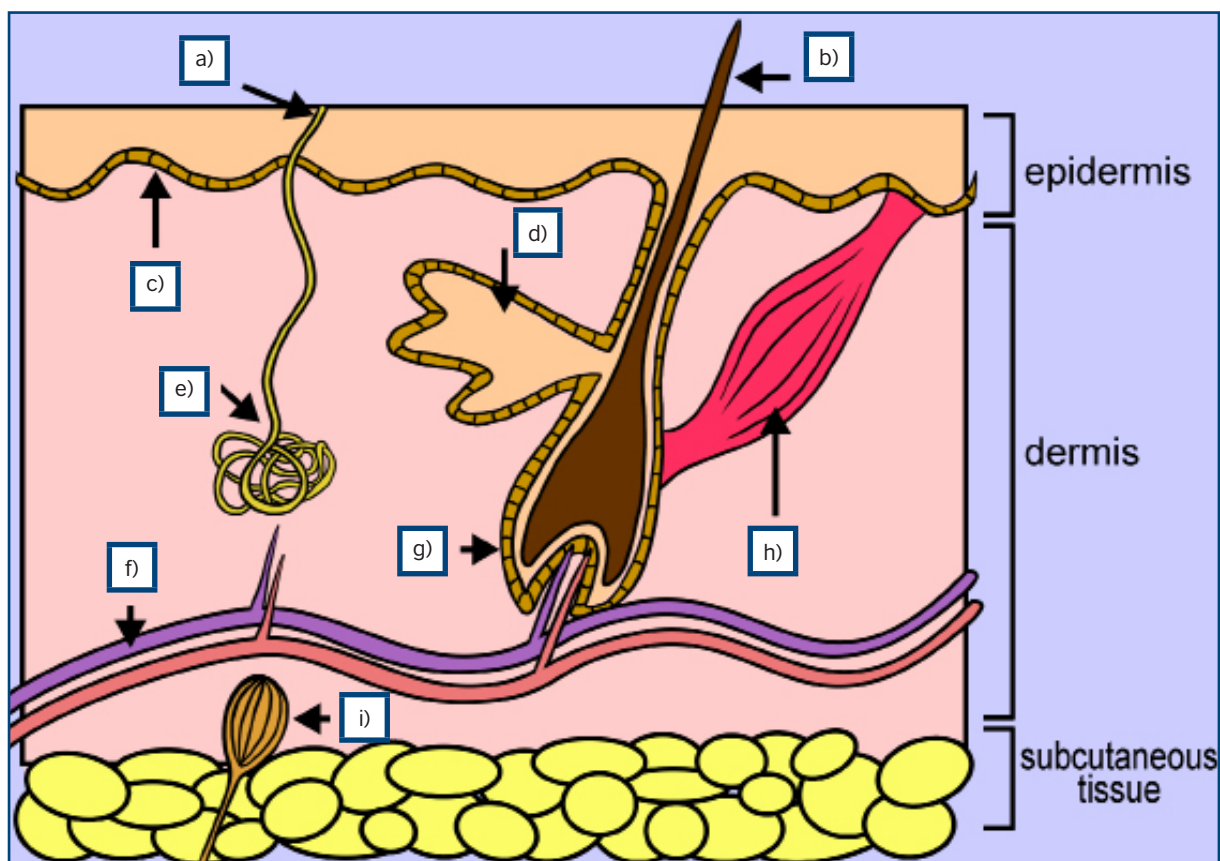
2. Choose the correct words from the list to fill the gaps in the text about **skin**.

subcutaneous	epidermis	regulate	protective barrier
organ	germs	layers	dermis

The skin is the largest ^{a)} _____ in the human body even though it is only about two millimetres thick. An average adult has around two square metres of skin weighing about 2.7kg. The skin has a number of roles including being a ^{b)} _____, simply keeping things like ^{c)} _____ and other organisms out of your body. The skin is also there to keep things inside your body and it helps to ^{d)} _____ the body temperature. Human skin consists of three ^{e)} _____. The uppermost, outer layer is known as the ^{f)} _____ and this is a tough protective layer. This layer also contains melanin, which gives the skin its colour and protects against harmful sunrays. The next layer under the epidermis is called the ^{g)} _____. The dermis contains hair follicles, nerve endings and glands for oil and sweat. The ^{h)} _____ tissue under the dermis is a layer of fat.

3. Use the words and phrases about **skin** to label the diagram.

sweat gland	blood vessels	sweat pore
hair follicle	sebaceous gland	hair erector muscle
Pacinian corpuscle	hair shaft	melanocytes

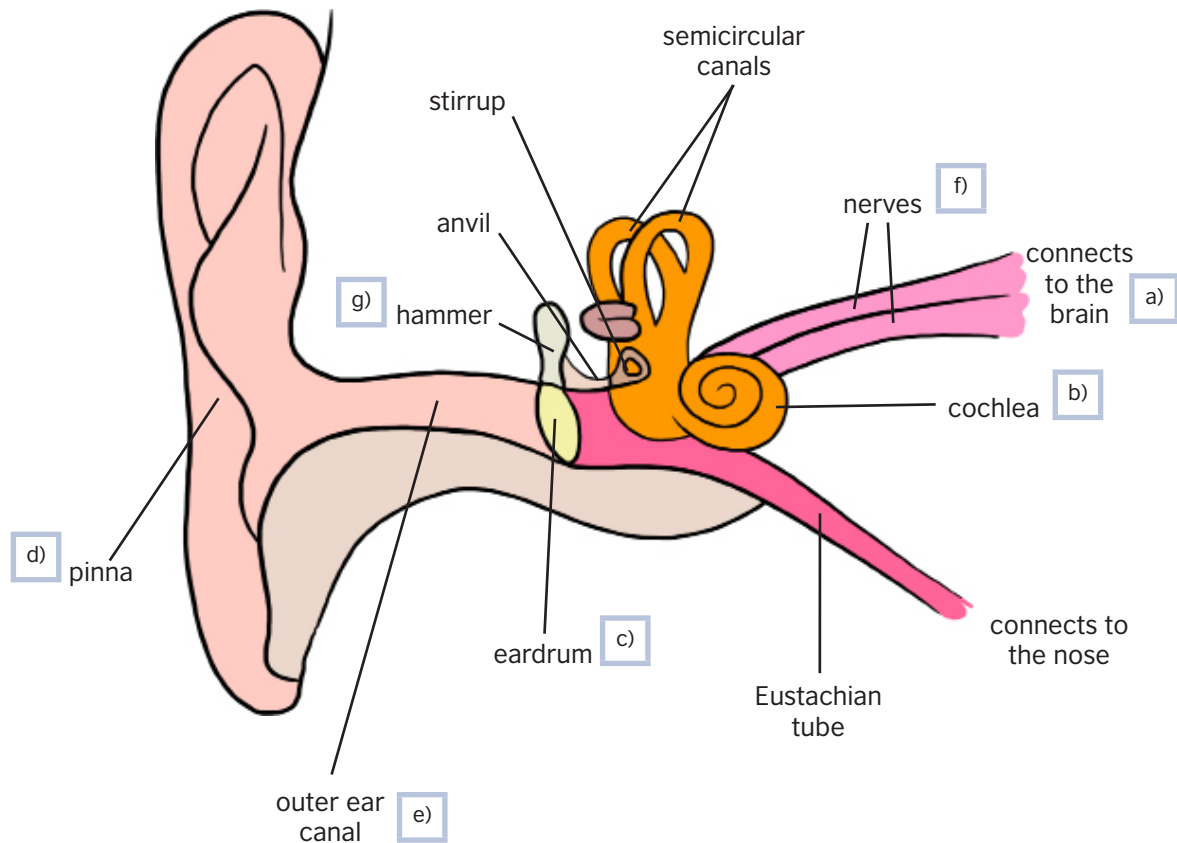


Write answers here:

a)		b)		c)	
d)		e)		f)	
g)		h)		i)	

4. Read the text on **the ear** and match the sentences with the correct part of the picture.

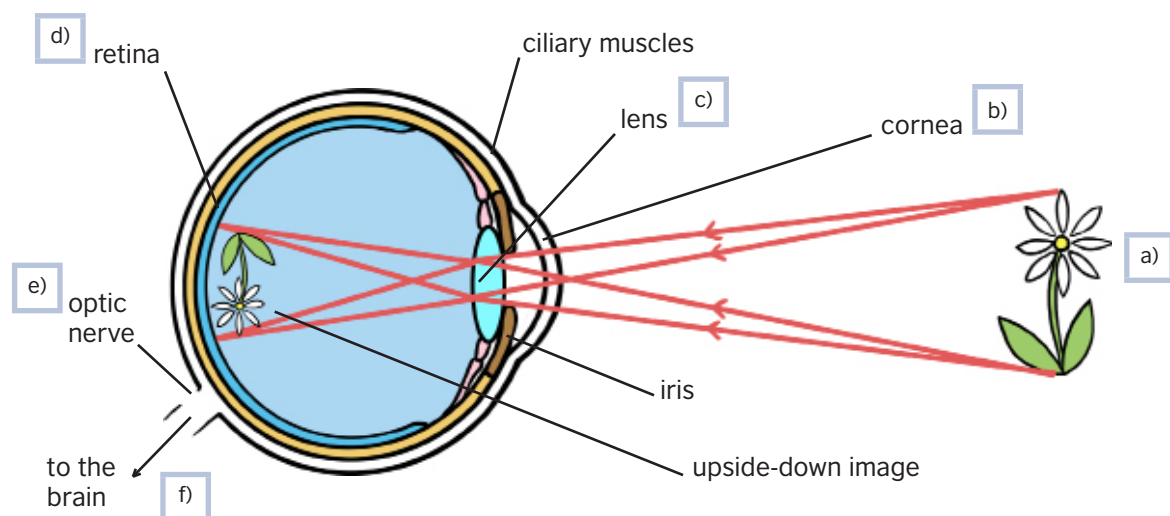
When a sound is heard it **1)** enters the visible part of the ear called the pinna and the sound is **2)** directed through the outer ear canal. Here, the **3)** sound makes the eardrum vibrate that then **4)** causes the hammer, the anvil and the stirrup in the middle ear to vibrate. This vibration is **5)** transferred to the cochlea, that is a snail-shaped structure in the inner ear. The cochlea is covered with fine hairs which move with the vibration and **6)** trigger nerve impulses, which are then **7)** sent to the brain.



Write answers here:

1	2	3	4	5	6	7

5. Put the sentences about **how we see** in the correct order by matching them with the parts of the picture. The first one is done for you.



- Cells in the retina called rods and cones detect light and colours and convert the light into electrical impulses.
- Light is reflected off an object that we are looking at.
- The brain interprets the impulses and we see what we are looking at.
- The electrical impulses are relayed along the optic nerve to the brain.
- The light travels through the outer transparent layer of the eye called the cornea.
- The light goes through the lens, which focuses the light on to the retina.

a)	b)	c)	d)	e)	f)
2					

6. Use the words about being **long-sighted** or **short-sighted** to fill in the gaps in the text.

blurred	clearly	concentrate	corrected	defect
distant	focused	opticians	strength	

Sometimes a person's eyes ^{a)} _____ the light too much or not enough and the image they see is ^{b)} _____. The image can be made sharp again by wearing spectacles. A short-sighted person can see near objects clearly, but not ^{c)} _____ objects. Their eyes concentrate the light too much, so the image of something in the distance is in front of the retina. This ^{d)} _____ (also known as being near-sighted) can be corrected by wearing spectacles with concave lenses. The lenses spread the light before it enters the eye so that the image is focused on the retina. A long-sighted person can see distant objects ^{e)} _____, but cannot focus on near objects. Their eyes cannot concentrate the light

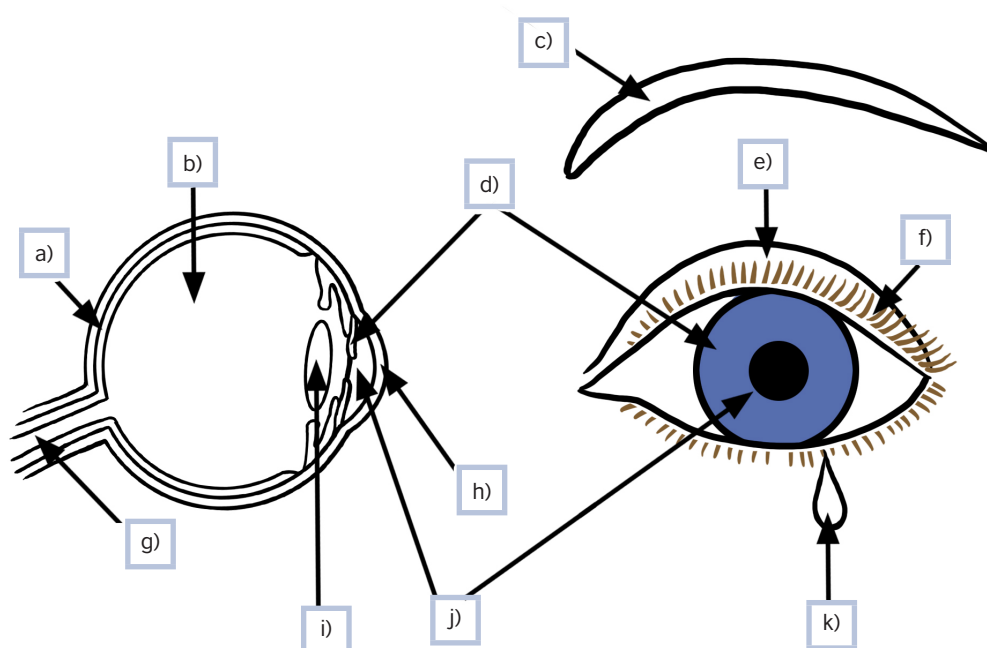
from nearby things enough and the image would be behind the retina. This defect can be
f) _____ by wearing spectacles with convex lenses. The lenses concentrate the light
before it enters the eye so that the image is g) _____ on the retina.

h) _____ test your eyes with a chart. They ask you to read smaller and smaller
letters. They try different lenses to find the correct i) _____ to make your vision as
clear as possible.

7. Use the words about parts of the eye to label the diagrams.

Note: One of the words is used twice. It is used to label a part of the eye that appears on both diagrams.

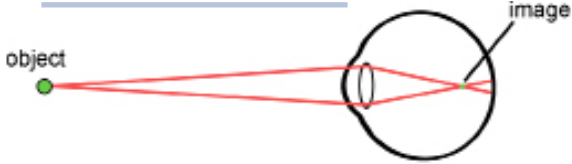
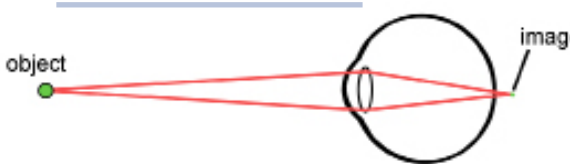
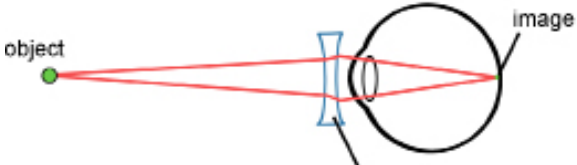
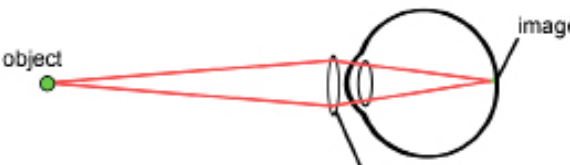
tear	lens	optic nerve	cornea
retina	vitreous	iris	eyelid
eyelashes	eyebrow	pupil	



Write answers here:

a)		b)		c)	
d)		e)		f)	
g)		h)		i)	
j)		k)			

8. Use the words about being **long-sighted** or **short-sighted** to label the diagrams.

long-sighted	short-sighted	concave lens	convex lens
a) _____			c) _____
			
			
b) _____			d) _____

9. Find the words about the **senses** in the word search.

V A I N X O E O T P E B G G H R	convert detect ear hearing interpret reflect sense smell sound taste tongue touch trigger vibrate
E C Y S M E L L A R E E N I A I	
S S D V T N T R S E D E T E C T	
J R S I S L O E T E X S R I Y I	
E C B P I L U F E T E G I N X E	
F S P S S E C L R T E I G N E O	
R G C H Z E H E A R I N G I F O	
Q N S U F K V C M F C T E I Q P	
O M S E T N I T E M N E R Z R I	
U A M N O X B B T R P R F R E F	
O W S C N I R D E E L P E S E H	
P R L O G C A R I R R R N M X Q	
Q K X I U D T N T J J E W A V W	
U E E E E N E S O X S T E H P C	
I N C S R W D P E K Y C A S C U	
H C T U D G E R S E H B S A P F	

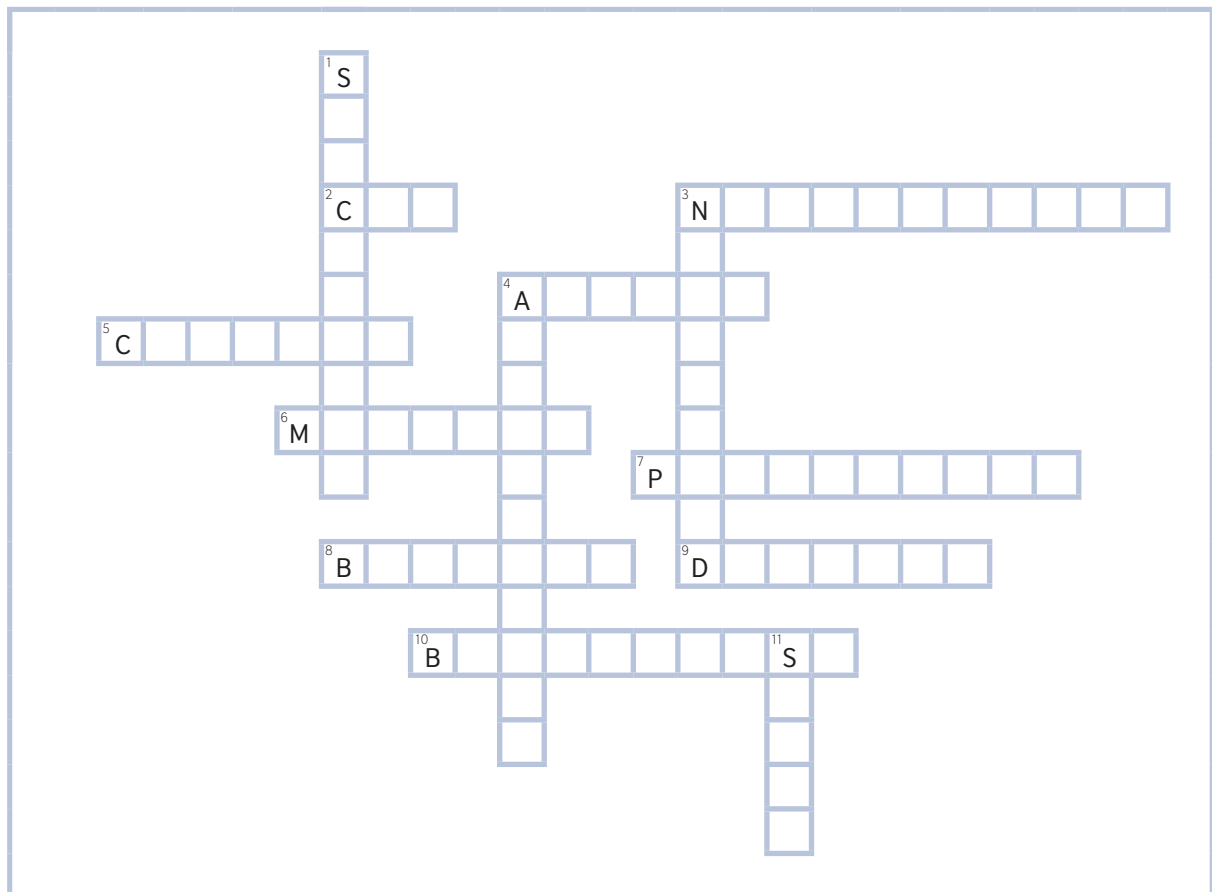
10. Complete the crossword by answering the following questions. All the correct answers are words about the **senses**.

Across

2. To injure a part of your body with something sharp that breaks the skin.
3. Being able to see near objects more clearly than distant objects.
4. To change or move something slightly so that it works or fits better.
5. Spectacles are used to _____ the vision of people who are short-sighted or long-sighted.
6. A substance in the skin, eyes and hair that gives them their colour.
7. The way in which the brain processes information from the senses, or a certain point of view.
8. A long, thin piece of cloth that is wrapped around an injured part of the body.
9. A medical condition that can cause serious health problems.
10. The strength of a source of light is measured by its level of _____ .

Down

1. Glasses that you wear to help you to see better.
3. An occasion when blood comes out of someone's nostrils.
4. A condition in which someone's eyes cannot focus correctly without the help of glasses.
11. Something that is in clearly in focus and seen in a lot of detail.



Glossary

20/20 vision	/ˌtwenti ˌtwenti ˈvɪʒ(ə)n/ normal human vision, a condition in which a person can see a letter of a specific size from a distance of 20 feet.
adjust	/əˈdʒʌst/ verb [T] to change or move something slightly so that it works or fits better: The spectacles adjusted her sight so that she could see better.
anvil	/ˈænvɪl/ noun [C] a small bone in the middle ear between the hammer and the stirrup.
aqueous humor	/ˈeɪkwɪəs ˈhju:mə(r)/ the clear, watery fluid inside the eye. It provides nutrients to the eye.
astigmatism	/əˈstɪgməˌtɪz(ə)m/ noun [U] a condition in which someone's eyes cannot focus correctly without the help of glasses.
bandage	/ˈbændɪdʒ/ noun [C/U] a long thin piece of cloth that is wrapped around an injured part of the body.
binocular vision	/bɪˌnɒkjʊlə(r) ˈvɪʒ(ə)n/ noun [U] the use of both eyes to see things with depth and in relation to each other. Humans and some other animals have binocular vision.
bitter	/ˈbɪtə(r)/ adj something that is bitter has a strong sharp taste that is not sweet mostly sensed towards the back and rear sides of the tongue.
blood vessel	/blʌd ˈves(ə)l/ noun [C] a tube that carries blood around the body. Veins, arteries, and capillaries are all blood vessels.
blurred	/blɜː(r)d/ (blurs, blurring, blurred) verb [I/T] to become less clear, or to make something less clear: The letters blurred together on the page.
brain	/breɪn/ noun [C] the organ inside the skull in vertebrates that controls physical and nervous activity and intelligence.
brightness	/braɪtnəs/ noun [U] the strength of full shining light: It was a bright sunny day.
ciliary muscles	/ˌsɪliəri ˈmʌs(ə)l/ noun [C] a muscle in the eye that controls the lens.
clearly	/ˈkliə(r)li/ adv something done or used in a way that people can easily see.
cochlea	/ˈkɒkliə/ noun [C] a part of the inner ear that has a spiral shape. It contains very small hairs that move when sound waves come into the ear.
colour	/ˈkʌlə(r)/ noun [C/U] red, blue, green, yellow etc: Pink is my favourite colour.
concave lens	/ˈkɒnkeɪv lenz/ noun [C] a lens which is curved inwards used to correct short-sightedness.
cone	/kəʊn/ noun [C] cells in the retina that sense color.
convert	/kənˈvɜː(r)t/ verb [I/T] to change from one form to another such as sounds converted into messages to the brain.
convex lens	/ˈkɒnveks lenz/ noun [C] a lens which is curved outwards used to correct long-sightedness.
cornea	/ˈkɔː(r)niə/ the clear, dome-shaped tissue covering the front of the eye.
correct	/kəˈrekt/ verb [T] to make something work in the way that it should: She had surgery to correct a defect in her left eye.

cosmetics	/kɒz' metiks/ noun [plural] substances that people use on their hair or skin to make themselves look more attractive.
cotton bud	/'kɒt(ə)n stɪk/ /bʌd/ noun [C] a small plastic stick with a small piece of cotton wool at each end used, for example, for cleaning your ears
cotton wool	/'kɒt(ə)n wʊl/ noun [U] soft cotton used, for example, for cleaning a cut in your skin or removing make-up.
cut	/kʌt/ verb [T] to injure a part of your body with something sharp that cuts the skin: Be careful not to cut your finger.
defect	/'di:fekt/ noun [C] a fault in someone or something.
depth perception	/depθ pə(r)'sep(ə)n/ noun [U] the ability to see the world in three dimensions and the distance of an object.
dermis	/'dɜ:(r)mɪs/ - noun [singular] the thick sensitive layer of skin that is just below the epidermis. It contains blood, the ends of the nerves, blood vessels, and sweat glands.
detect	/di'tekt/ verb [T] to find or notice something using the senses.
disease	/di'zi:z/ noun [C/U] a medical condition that can cause serious health problems.
distant	/'dɪstənt/ adj far away from the place where you are.
ear	/ɪə(r)/ noun [C] one of the two parts on the sides of the head that you hear with and that are also important for balance.
eardrum	/'ɪə(r)dɾʌm/ noun [C] a thin membrane in the ear that vibrates when sound waves reach it.
electrical pulses	/ɪ'lektrɪk(ə)l 'pʌlsɪz/ noun [C] charges along nerves in the body carrying messages to the brain.
epidermis	/'epɪ'dɜ:(r)mɪs/ noun [singular] the outer layer of skin on top of the dermis.
Eustachian tube	/ju:ˌsteɪʃ(ə)n 'tju:b/ noun [C] a tube that connects the middle ear to the back of the nose.
eye	/aɪ/ noun [C] one of the two organs in the face that are used for seeing.
eye lens	/aɪ lenz/ noun [C] part of the eye where the image is focused on the retina.
eyebrow	/'aɪˌbraʊ/ - noun [C] a patch of hair above the eye.
eyelash	/'aɪˌlæʃ/ - noun [C] one of many hairs on the edges of the eyelids.
eyelid	/'aɪˌlɪd/ - noun [C] the flap of skin that covers and protects the eye.
fatty	/'fæti/ adj containing a lot of fat: fatty tissue.
focus	/'fəʊkəs/ (focuses or focusses, focusing or focussing, focused or focussed) verb [I/T] if your eyes focus, you concentrate on something carefully until you start to see it clearly.

frequency	/ˈfri:kwənsi/ noun [C] the rate at which a sound wave, light wave, or radio wave vibrates.
function	/ˈfʌŋkʃ(ə)n/ noun [C/U] a job that something is designed to do: The function of the eyelid is to protect the eye.
germ	/dʒɜː(r)m/ noun [C] a form of bacteria that spreads disease.
hair erector muscle	/heə(r) ɪˈrektə(r), mʌs(ə)l/ noun [C] a muscle connected to hair and the skin which contracts in response to cold.
hair follicle	/heə(r) ˈfɒlɪk(ə)l/ noun [C] a covering surrounding the part of the hair under the skin.
hair shaft	/heə(r) ʃɑːft/ noun [C] the part of the hair that is above the skin.
hammer	/ˈhæmə(r)/ noun [C] a tiny bone in the ear that passes vibrations from the eardrum to the anvil.
handkerchief	/ˈhæŋkə(r), tʃɪf/ (plural handkerchieves noun [C] a small piece of cloth or paper that you use for wiping your nose or eyes.
hearing	/ˈhiəriŋ/ noun [U] the ability to hear sounds: My hearing is getting worse as I get older.
hygiene	/ˈhaɪdʒiːn/ noun [U] the practice of keeping yourself and the things around you clean in order to prevent infection and disease.
inner ear	/ˈɪnə(r) ɪə(r)/ noun [singular] the inside part of the ear controlling balance and ability to hear.
interpret	/ɪnˈtɜː(r)pɪt/ verb [T] to explain the meaning of something: The brain interprets the signal.
iris	/ˈaɪrɪs/ noun [C] the colored part of the eye controlling the amount of light that enters the eye.
layer	/ˈleɪə(r)/ noun [C] a substance that covers a surface or lies between two things.
lens	/lenz/ noun [C] a structure located just behind the iris which focuses light onto the retina.
light-sensitive	/laɪt ˈsensətɪv/ adj something which is sensitive to light like cells which pick up light at the back of the eye.
long-sighted	/lɒŋ ˈsaɪtɪd/ adj someone who can see distant objects more clearly than nearby objects is said to be longsighted, because light is focused behind the retina, not on it.
melanin	/ˈmelənɪn/ noun [U] a substance in the skin, eyes, and hair that gives them their colour.
melanocyte	/melˈænəʊsaɪt/ noun [C] a cell in the epidermis that produces melanin.
muscle	/ˈmʌs(ə)l/ noun [C/U] flesh connected to bones producing movement of parts of the body by contracting and relaxing.
near	/nɪə(r)/ adv, preposition close to someone or something.
near point	/nɪə(r) pɔɪnt/ noun [C] the nearest point to the entrance of the pupil of the normal eye at which focus is attained without strain.
nearsighted	/nɪə(r) ˈsaɪtɪd/ adj someone who can see near objects more clearly than distant objects is said to be nearsighted, because light is focused in front of the retina, not on it.

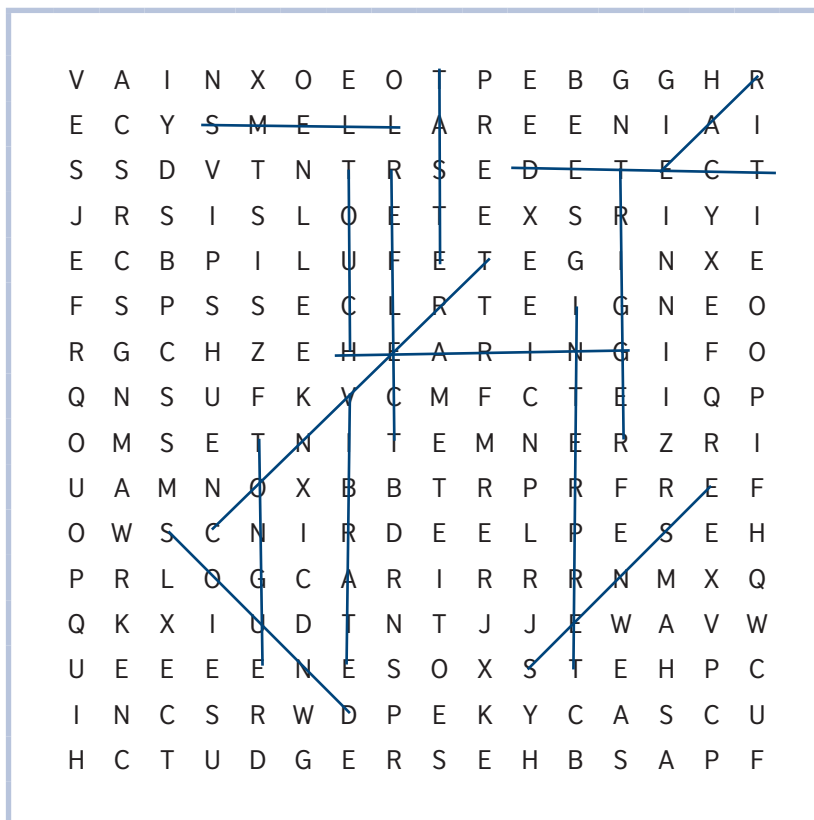
nerve endings	/nɜː(r)v 'endɪŋ/ noun [C] the terminal structures of axons that do not end at a synapse.
nerve	/nɜː(r)v/ noun [C] these carry electro-chemical signals from the inner ear to the brain.
nose	/nəʊz/ noun [C] the part of the face above the mouth that is used for smelling and breathing.
nosebleed	/'nəʊz, bliːd/ noun [C] an occasion when blood comes out of someone's nose.
oil gland	/ɔɪl glænd/ noun [C] a gland, such as a sebaceous gland, that secretes an oily substance.
optic nerve	/'ɒptɪk nɜː(r)v / noun [C] the nerve that transmits electrical impulses from the retina to the brain.
optician	/ɒp 'tɪʃ(ə)n/ noun [C] a doctor who is an expert in illnesses of the eyes.
organ	/'ɔː(r)ɡən/ noun [C] a part of the body made up of several tissues that does a particular job, such as the heart or brain.
outer ear canal	/'aʊtə(r) iə(r) kə 'næl/ noun [C] the narrow, tubelike passage where sound enters the ear.
Pacinian corpuscle	/pæʃ'niən 'kɔː(r)pʌs(ə)/ noun [C] nerve receptors in the subcutaneous tissue that respond to pressure and vibration.
papillae	/'pæpi, liː/ noun [C] small round projections on the tongue containing the taste buds.
paraffin	/'pærəfɪn/ noun [U] a clear oil with a strong smell that is used as fuel.
photoreceptor	/'fəʊtəʊ rɪ'septə(r)/ noun [C] a photosensitive cell in the retina of eyes of invertebrates.
pinna	/'pɪnə/ noun [C] the visible part of the ear which collects sound and directs it into the outer ear canal.
property	/'prɒpə(r)ti/ noun [C] a quality or feature of something.
pupil	/'pjʊ:p(ə)/ noun [C] the opening in the center of the iris which gets bigger in more light.
reflect reflect	/rɪ'flekt/ verb [T] if a surface reflects something, you can see the image of that thing on the surface: I saw them reflected in the mirror.
regulate	/'regjʊleɪt/ verb [T] to control something so that it operates effectively.
relay	/rɪ'leɪ/ [T] to communicate or send information (such as from the eye to the brain).
retina	/'retɪnə/ noun [C] light-sensitive tissue that lines the back of the eye.
rod	/rɒd/ noun [C] a cell in the retina that senses brightness also known as a photoreceptor.
salty and sweet	/'sɔːltɪ ənd swi:t/ adj salty and sweet tastes are mostly tasted at the tip of the tongue.
sebaceous gland	/sə'beɪʃəs glænd/ noun [C] a small, sack-shaped gland that releases oily liquids onto the hair follicle.
semicircular canals	/.semi'sɜː(r)kjʊlə(r) kə 'næl/ noun [C] three rings of fluid-filled tubes that are attached to the cochlea in the inner ear which help us maintain our sense of balance.

sense	/sens/ noun [C] an ability that most people have to see, hear, smell, taste, and feel things.
shadow	/ˈʃædəʊ/ noun [C/U] an area of darkness that is created when something blocks light
sharp	/ʃɑː(r)p/ adj clear and seen in a lot of detail: a TV with a razor sharp picture.
short-sighted	/ʃɔː(r)t ˈsaɪtɪd/ adj not able to see objects that are far away very clearly.
sight	/saɪt/ noun [U] the ability to see using your eyes.
skin	/skin/ noun [C/U] the outer layer of a vertebrate's body consisting of the dermis and epidermis.
skin disease	/skin dɪˈziːz/ noun [C/U] a medical condition that can cause serious damage to the skin.
smell	/smel/ noun [C] the quality of something you notice when you breathe in through your nose.
sound	/saʊnd/ noun [C] something that you can hear.
sour	/ˈsaʊə(r)/ adj a taste like lemon juice tasted at the sides, middle and to the front of the tongue.
spectacles	/ˈspektə(ə)lɪz/ noun [plural] glasses that you wear to help you to see better.
stimulus	/ˈstimjʊləs/ (plural stimuli) noun [C/U] something that produces a reaction in a living thing.
stirrup	/ˈstɪrəp/ noun [C] a tiny, U-shaped bone that passes vibrations from the stirrup to the cochlea.
subcutaneous tissue	/ˌsʌbkjuːˈteɪniəs ˈtɪʃuː/ noun [U] fatty tissue located under the dermis.
sweat gland	/swet glænd/ noun [C] a gland that produces sweat and releases it onto the skin via the sweat pore.
taste	/teɪst/ noun [U] the flavour that something creates in your mouth when you eat or drink it.
taste buds	/teɪst bʌd/ noun [C] small round projections on the tongue which sense taste in the things we eat or drink.
tear	/teə(r)/ noun [C] a clear, salty liquid produced by glands in the eyes.
thickness	/ˈθɪknəs/ noun [C/U] the measurement of how thick something is.
tissue paper	/ˈtɪʃuː ˈpeɪpə(r)/ noun [U] a type of very thin paper used for wrapping or protecting things.
tongue	/tʌŋ/ noun [C] the long soft piece of flesh that is fixed to the bottom of the mouth.
touch	/tʌtʃ/ verb [T] to put your hand or part of your body on someone or something.
trigger	/ˈtrɪɡə(r)/ verb [T] to cause something to happen.
upside down	/ˈʌpsaɪd daʊn/ adv with the top part at the bottom or lower than the bottom part.

vibrate	/vai'breit/ verb [I] to shake very quickly with small movements.
vitreous	/'vitriəs/ noun [U] a thick, transparent liquid filling the center of the eye (also: vitreous humor).

Key:

1. a) bitter, b) sour, c) sour, d) sweet and salty
2. a) organ, b) protective barrier, c) germs, d) regulate, e) layers, f) epidermis, g) dermis, h) subcutaneous
3. a) sweat pore, b) hair shaft, c) melanocytes, d) sebaceous gland, e) sweat gland, f) blood vessels, g) hair follicle, h) hair erector muscle, i) Pacinian corpuscle
4. 1 d), 2 e), 3 c), 4 g), 5 b), 6 f), 7 a).
5. a) 2, b) 5, c) 6, d) 1, e) 4, f) 3
6. a) concentrate, b) blurred, c) distant, d) defect, e) clearly, f) corrected, g) focused, h) Opticians, i) strength
7. a) retina, b) vitreous, c) eyebrow, d) iris, e) eyelid, f) eyelashes, g) optic nerve, h) cornea, i) lens, j) pupil, k) pupil
8. a) short-sighted, b) concave lens, c) long-sighted, d) convex lens
- 9.



10. **Across:** 2) cut, 3) nearsighted, 4) adjust, 5) correct, 6) melanin, 7) perception, 8) bandage, 9) disease, 10) brightness; **Down:** 1) spectacles, 3) nosebleed, 4) astigmatism, 11) sharp