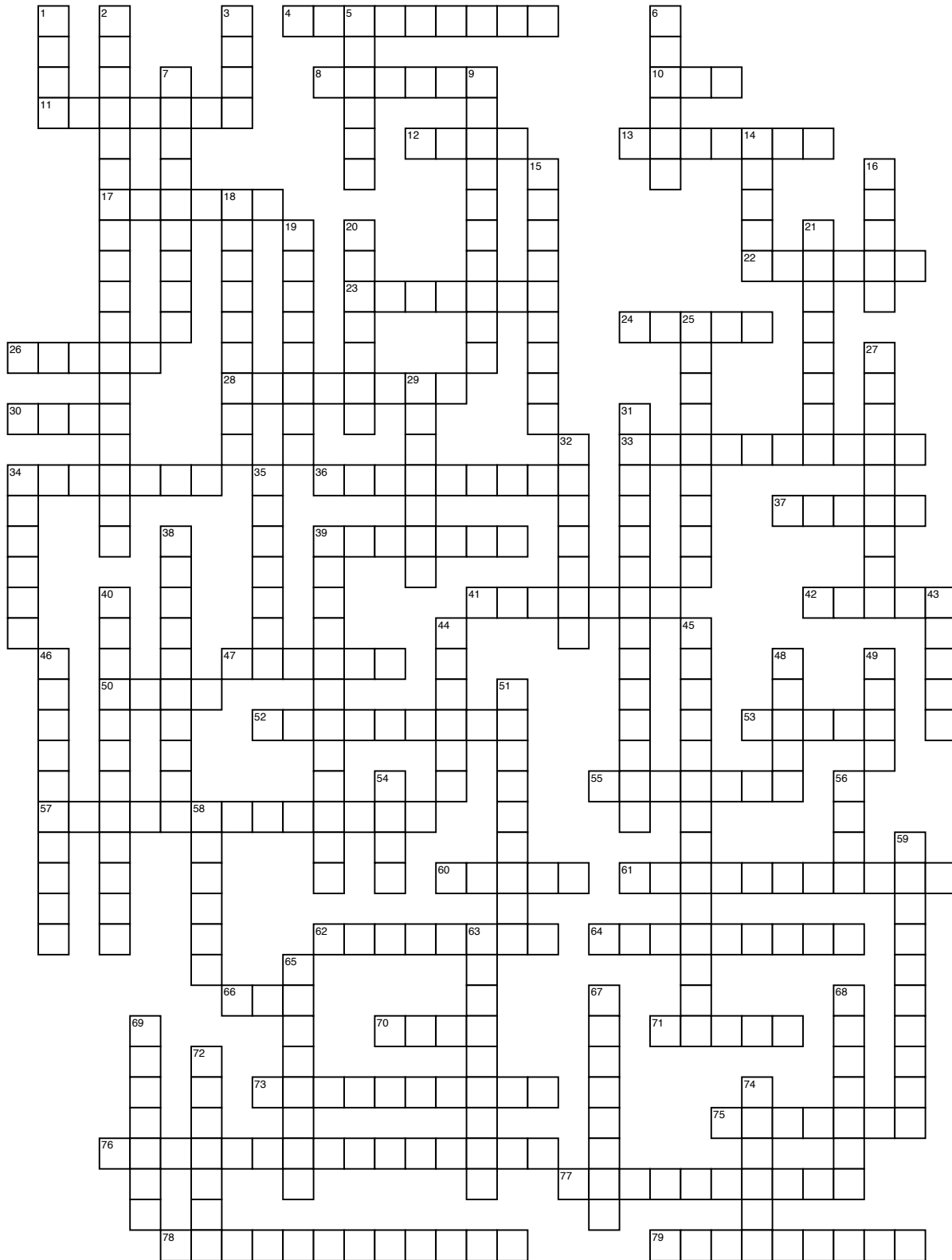


Sensory Systems



ACROSS

- 4 The _____ system is the sensory system that uses taste buds on the upper surface of the tongue to provide information about the taste of food being eaten.
- 8 The _____ ear is the portion of the ear internal to the eardrum, and external to the oval window of the cochlea.
- 10 _____ cells are photoreceptor cells in the retina of the eye that can function in less intense light than cone cells can.
- 11 A light-sensitive derivative of vitamin A, _____ is the fundamental chromophore involved in the transduction of light into visual signals.
- 12 The optic _____ is the location where ganglion cell axons exit the eye to form the optic nerve.
- 13 _____ (or audition) refers to the ability to detect sound.
- 17 The _____ is the opaque, usually white, fibrous, protective layer of the eye containing collagen and elastic fibers.
- 22 The _____ is the stirrup-shaped small bone or ossicle in the middle ear which attaches the incus to the fenestra ovalis.
- 23 The _____ ending or corpuscle is a class of slowly adapting mechanoreceptor thought to exist only in the glabrous dermis and subcutaneous tissue of humans
- 24 The _____ tendon organ is a proprioceptive sensory receptor organ that is located at the insertion of skeletal muscle fibres into the tendons of skeletal muscle.
- 26 _____s are a group of light-sensitive membrane-bound G protein-coupled receptors of the retinylidene protein family found in photoreceptor cells of the retina.
- 28 A _____ is a detectable change in the internal or external environment.
- 30 The _____, also called the vascular tunic, is the pigmented middle of the three concentric layers that make up an eye.
- 33 _____ cells are the laterally interconnecting neurons in the outer plexiform layer of the retina.
- 34 _____s are unmyelinated nerve fibers associated with chronic or dull pain.
- 36 _____ is an extracellular fluid located within the scala tympani and scala vestibuli of the cochlea.
- 37 The organ of _____, or spiral organ, is the organ in the inner ear of mammals that contains auditory sensory cells, or hair cells.
- 39 _____s are small particles, composed of a combination of a gelatinous matrix and calcium carbonate in the viscous fluid of the sacculle and utricle.
- 41 The _____ muscle is a smooth muscle responsible for accommodation of the eye.
- 42 The sclera and cornea form the fibrous _____ of the bulb of the eye.
- 47 An olfactory receptor _____ is the primary transduction cell in the olfactory system.
- 50 The _____ consists of pigmented fibrovascular tissue known as a stroma, which connects a sphincter muscle to contract the pupil, and a set of dilatory muscles to open it.
- 52 The _____ field of a sensory neuron is a region of space in which the presence of a stimulus will alter the firing of that neuron.
- 53 _____ or gustation is a form of direct chemoreception producing the ability to detect the flavor of substances such as food and poisons.
- 55 The _____ papillae is a localized area at the side of the base of the tongue in which taste buds are especially abundant.
- 57 _____ is the process by which the eye increases optical power to maintain a clear image of an object as it draws near the eye.
- 60 The _____ window is one of two openings along with the oval window that connect the inner ear to the middle ear.

- 61 A _____, also known as chemoreceptor, is a cell or group of cells that transduce a chemical signal into an action potential.
- 62 The _____ are the three smallest bones in the human body, contained within the middle ear and serving to transmit sounds to the fluid-filled cochlea.
- 64 Also known as iodopsins, _____s are the photoreceptor proteins found in the cone cells of the retina that are the basis of color vision.
- 66 _____s are organs of vision that detect light.
- 70 The ciliary _____ is the circumferential tissue inside the eye composed of the ciliary muscle and ciliary processes.
- 71 The _____ ear is the bony labyrinth, a system of passages comprising two main functional parts: the cochlea and the vestibular apparatus.
- 73 The retinal pigment _____ is the pigmented cell layer just outside the neurosensory retina that nourishes retinal visual cells.
- 75 The _____ membrane within the cochlea of the inner ear is a stiff structural element that separates the two liquid-filled tubes that run along the coil of the cochlea.
- 76 A _____ is a sensory receptor that responds to mechanical pressure or distortion.
- 77 The _____ system, or balance system, is the sensory system that provides the dominant input about our movement and orientation in space.
- 78 _____s detect the pressure of blood flowing through them, and can send messages to the central nervous system to increase or decrease total peripheral resistance and cardiac output.
- 79 The _____ epithelium is a specialized epithelial tissue inside the nasal cavity that is involved in smell.

DOWN

- 1 _____ cells are the sensory receptors of both the auditory system and the vestibular system in all vertebrates.
- 2 _____ is structural change between isomers is caused by photoexcitation.
- 3 Also called the vestibular window, the _____ window is a membrane-covered opening which leads from the middle ear to the vestibule of the inner ear.
- 5 The _____ ganglion is the group of nerve cells that serve the sense of hearing by sending a representation of sound from the cochlea to the brain.
- 6 _____ nerve endings are mechanoreceptors found in the skin in which each ending consists of a cell in close apposition with an enlarged nerve terminal.
- 7 _____ is the fluid contained in the membranous labyrinth of the inner ear.
- 9 The _____ tube is a tube that links the pharynx to the middle ear.
- 14 The _____ is the anvil-shaped small bone or ossicle in the middle ear.
- 15 The _____ papillae are mushroom shaped papillae on the tongue.
- 16 The _____ is a part of the eye, located in the center of the macula region of the retina, which is responsible for sharp central vision
- 18 _____, or visual purple, is a pigment consisting of an opsin protein and retinal cofactor that is responsible for both the formation of the photoreceptor cells and the perception of light.
- 19 _____ cells are interneurons in the retina which deliver 70% of the ganglion cells input, and also regulate the output of the cone bipolar cells which deliver the other 30%.
- 20 The tympanic membrane, colloquially known as the _____, is a thin membrane that separates the external ear from the middle ear.
- 21 _____ corpuscles are nerve endings in the skin, responsible for sensitivity to deep pressure touch and high frequency vibration.
- 25 The _____ is a system of fluid passages in the

inner ear, including both the cochlea which is part of the auditory system, and the vestibular system which provides the sense of balance.

- 27 _____ refers to the sense of smell.
- 29 The _____ along with the saccule is one of the two otolith organs located in the vertebrate inner ear.
- 31 A _____ is a sensory receptor that responds to temperature, primarily within the innocuous range.
- 32 The _____ is the vascular layer of the eye lying between the retina and the sclera.
- 34 The _____ is the transparent front part of the eye that covers the iris, pupil, and anterior chamber, providing most of an eye's optical power.
- 35 The _____ is the smaller of the two vestibular sacs.
- 38 A _____ is a special structure connected to the hair cells of the inner ear's cochlea which acts to aid in depolarization and hyperpolarization of the plasma membrane due to bending of stereocilia.
- 39 An _____ is a sensory receptor primarily found in the hypothalamus of most homeothermic organisms that detects changes in osmotic pressure.
- 40 The _____ canals are three half-circular, interconnected tubes located inside each ear that are the equivalent of three gyroscopes located in three orthogonal planes.
- 43 The visual _____ is the biological conversion of a photon into an action potential in the retina.
- 44 The _____ is a thin layer of neural cells that lines the back of the eyeball.
- 45 _____ is the sense of the relative position of neighbouring parts of the body.
- 46 The _____ labyrinth is lodged within the bony labyrinth, having the same general form, partly separated from the bony walls by a quantity of perilymph.
- 48 The _____ theory of smell states that the sensation of smell is due to a 'lock and key' mechanism by which a scent molecule fits into olfactory receptors in the nasal lamina of the nose.
- 49 A _____ nerve ending is an unspecialized, afferent nerve ending, which are are unencapsulated and have no complex sensory structures.
- 51 The _____ is the central part of the osseous labyrinth, situated medial to the tympanic cavity, behind the cochlea, and in front of the semicircular canals.
- 54 _____ cells are photoreceptor cells in the retina of the eye which function best in relatively bright light.
- 56 The zonule of _____ is a ring of fibrous strands connecting the ciliary body with the crystalline lens of the eye.
- 58 _____ cells are large oval cells found in the skin of vertebrates associated with the sense of touch.
- 59 A _____ is a sensory receptor that sends signals that cause the perception of pain in response to potentially damaging stimulus.
- 63 The bony _____ located in the inner ear consists of the vestibule, the semicircular canals, and the cochlea.
- 65 A sensory _____ is a structure that recognizes a stimulus in the internal or external environment, and in response, initiates sensory transduction by creating graded potentials or action potentials in the same cell or in an adjacent one.
- 67 _____'s corpuscles (or tactile corpuscles) are a type of mechanoreceptor responsible for sensitivity to light touch.
- 68 As a part of the retina, _____ cells exists between photoreceptors and ganglion cells.
- 69 The _____ is a hammer-shaped small bone or ossicle of the middle ear which connects with the incus and is attached to the inner surface of the eardrum.
- 72 The _____ is the auditory portion of the inner ear.
- 74 The _____ is an oval yellow spot near the center of the retina of the human eye.