

Hearing sounds



**ASSIGN
BUSTER**

Hearing Sounds This essay will discuss the components of the structure of the human ear and will describe how the human ear functions. The human ear is the organ responsible for hearing and balance. The ear has three main parts namely, the outer, middle and inner ear. The outer ear collects sounds from the environment and funnels them through the auditory system. The middle ear transmits sound from the outer ear to the inner ear. The inner ear interprets and transmits sound (auditory) sensations and balance (vestibular) sensations to the brain. The outer ear is composed of three parts which are the pinna (or auricle), the external auditory canal (or external auditory meatus), and the tympanic membrane (or eardrum) (Net Industries and its Licensors , par. 2). The pinna is the organ on the side of our heads that we commonly call " the ear". The external auditory canal is a passageway in the temporal lobe of the skull that begins at the ear and extends inward and slightly upwards. The outer one-third portion of the canal is lined with a membrane containing ceruminous (ear wax producing) cells, and hair cells which protects the eardrum by trapping dirt and other foreign bodies. The purpose of the cerumen and hairs is to protect the eardrum by trapping dirt and to keep the canal moist. The tympanic membrane or eardrum is a thin, concave membrane stretched across the inner end of the external auditory canal and serves as a transmitter of sound by vibrating in response to sounds traveling down the external auditory canal, and beginning sound conduction in the middle ear. The middle ear starts from the inner surface of the eardrum. It is connected to a chain of three small bones called the ossicles, known as the malleus (hammer), incus (anvil) and stapes (stirrup). These bones conduct sound waves from the tympanic membrane to the inner ear. The middle ear also consists of two muscles, the stapedius and the

<https://assignbuster.com/hearing-sounds/>

tensor tympani, which respond reflexively (Net Industries and its Licensors , par. 10). The inner ear is the spiral-shaped chamber covered internally by nerve fibers that react to the vibrations and transmit impulses to the brain via the auditory nerve. The main components of the inner ear are the vestibule, semicircular canals, and the cochlea (Net Industries and its Licensors , par. 12). The vestibule is the central structure within the inner ear and is a round open space which accesses various passageways. The vestibule contains two membranous sacs, the utricle and the saccule, which are lined with tiny hair cells and attached to nerve fibers, and serve as the vestibular (balance/equilibrium) sense organs. The semicircular canals are three loop-shaped, fluid filled tubes, arranged perpendicularly and are responsible for the sense of balance and spatial orientation. The cochlea is the site of the sense organs for hearing. The cochlea is a bony, snail-like shell that contains three separate fluid-filled ducts or canals which are the upper canal or the scala vestibuli, the lower canal or the scala tympani and the third canal or the scala media. The scala media contains the organ of Corti which contains hair cells. This is the site where sound waves are converted into nerve impulses which are sent to the brain. The brain then processes the information from the ear and allows the individual to differentiate the various types of sounds. Works Cited Net Industries and its Licensors. " Ear - Outer ear, Middle ear, Inner ear." 2011. science. jrank. org. 4 July 2011 .