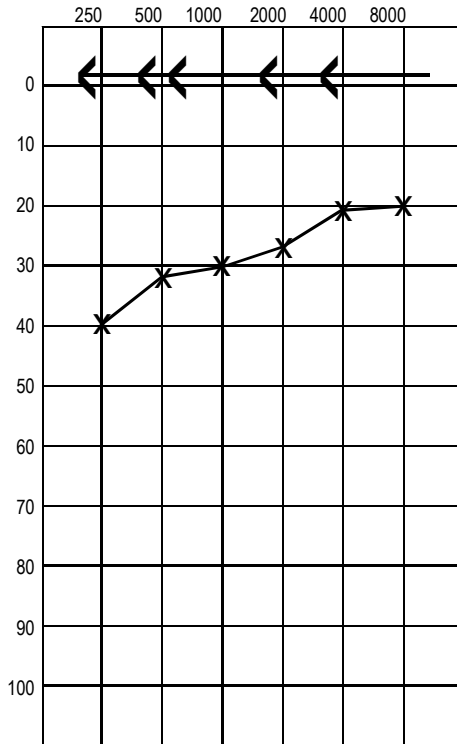


## Interpretation of the Audiogram

### Types of Hearing Losses

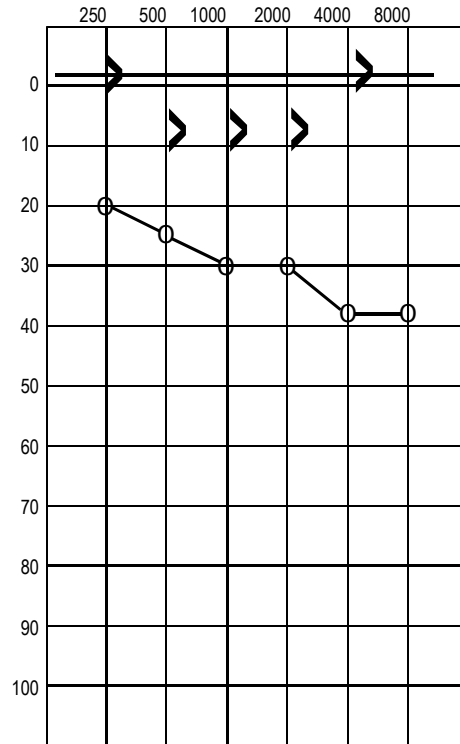
There are three general types of hearing loss: conductive, sensorineural, and mixed.

- Conductive** losses are the result of pathology in the outer or middle ear. On the audiogram there is usually a gap between bone testing result (in brackets) and the air results (indicated by "X" or "O").



Left Ear

X = Air Conduction  
< = Bone Conduction

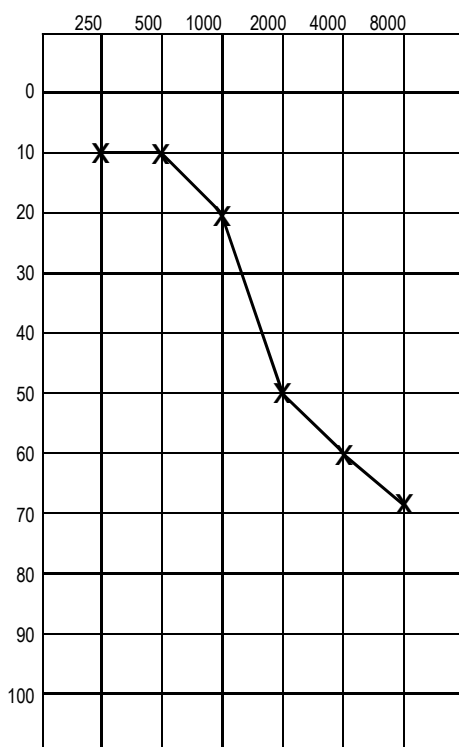


Right Ear

O = Air Conduction  
> = Bone Conduction

- **Sensorineural** (nerve or perceptive) losses are the result of inner ear and auditory nerve pathologies. Common patterns of sensorineural losses are shown below.

### 1. Classic Pattern Nerve Loss



Good hearing in low tones. Sharp loss in high tones. Refer to otologist. Loss usually not amenable to medical care. Often helped by hearing aid. Seat near front of classroom. The student will have trouble hearing these sounds: S, SH, TH, CH, F, V, J. The student often gives the impression of hearing but misses parts of words and has trouble hearing distinctly.

### 2. Acoustic Trauma (Nerve Loss)



Dip in approximately 4000 Hz. Loss caused by repeated exposure to excessively loud sounds, such as from guns, heavy equipment, or amplified musical instruments. Loss will become progressive if person remains in noisy environment. Loss not amenable to medical care. Remove individual from noisy environment. Keep under observation of otologist. If dip is extensive, the student may need special seating because, these sounds are not heard: S, SH, TH, CH, F, V, J.

- **Mixed Losses** are a combination of conductive and sensorineural pathology. Consult with student's medical provider/audiologist for special needs.

### **Ability to Hear Speech**

Being aware of how well an individual can hear the frequencies will reveal how well speech is heard. The overall speech range is 250-4000 Hz. In the spoken word, vowels are composed of frequencies from primarily 250 to 1000/1500 Hz. Consonants are composed of frequencies from primarily 1000/1500 to 4000 Hz. (in addition to a few higher and lower frequencies). For example, if the student's audiogram shows good hearing in the low tones but not in the high tones, vowels will be heard but consonants will be missed.

**(NOTE: Audiogram with pictures, vowels and consonants is on next page).**

### **The Audiological Assessment**

#### **Speech Hearing Testing**

When the school nurse receives an evaluation report on a student who has been tested by the audiologist, it will contain accurate information about the individual's hearing for speech. Under controlled conditions, the student is tested on ability to hear spoken words that are repeated to the audiologist. Evaluation reports contain results listed as:

- **Speech Reception Threshold (SRT)** which is stated in terms of decibels. It indicates the level of intensity (loudness) required to be able to hear and repeat correctly a certain quantity of specified words.
- **Discrimination Score (Articulation Score)** stated in terms of percentage. It is the percentage of certain words heard correctly when speech is made louder. It is of special value in the selection of hearing aids. It can be helpful for the school nurse in estimating how clearly and distinctly speech is heard by the student when wearing a hearing aid.