GLOSSARY OF AMPLIFICATION TECHNOLOGY

**Hearing Aid:**
The plastic part of your student’s hearing aids that sit behind the ears.

![Hearing Aid Image]

**Earmold:**
The rubbery part of the student’s hearing aids that sit in the ears.

![Earmold Image]

**Personal FM Receiver:**
The part of your student's FM system that is connected to the bottom of the hearing aids. It receives the transmitted signal (teacher’s voice) from the FM transmitter. Your student’s receivers are integrated with their hearing aids and do not need to be taken off.

![Personal FM Receiver Image]
**Personal FM Transmitter and Microphone:**
The part of the FM system that the teacher or EA wears to talk to the student. Your student's transmitter is called a Phonak ZoomLink.

**Backpack:**
The part of the personal FM system that attaches to the transmitter and provides ports for plugging in cables for charging or connecting other audio devices such as computers, iPods, etc.

**Audio Cord:**
The cord that plugs from the Backpack to other audio devices.

For further information or assistance please contact Inclusive Learning (Outreach) Educational Audiologists: Sarah Burns (sarah.burns@epsb.ca) or Krista Yuskow (krista.yuskow@epsb.ca)
## PERSONAL FM SYSTEM TIPS

### Adjusting the Lavaliere Cord Length:
After putting the FM transmitter over the head and around the neck, the lavaliere cord will need to be cinched to ensure that the transmitter is sitting at the correct placement on the sternum. To adjust the cord length, press on the large button and retract or withdraw the cord. The cord length should be adjusted so that the FM transmitter is sitting at the sternum level.

Note: Older models maybe have two side buttons. Pressing the side buttons together will release the FM transmitter potentially causing it to fall and be damaged.

![Adjusting Lavaliere Cord Length](image)

### Personal FM Microphone Placement:
Be sure to cinch the microphone) to the upper part of the sternum. Placement at the sternum level will ensure the best acoustic signal, is the least intrusive and most comfortable placement, and swinging of the transmitter is minimized.

Also be aware that FM microphones can inadvertently get covered by papers, books, hands, etc. This will muffle the speech signal, making it difficult for the student to hear and understand.

![Personal FM Microphone Placement](image)

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**Sounds Entering the Microphone:**
The Phonak FM microphone is located on the side of the transmitter. Be aware that any noise near the microphone will travel DIRECTLY into the student’s hearing aids, inhibiting rather than helping the listening process. Therefore be sure to remove any noisy jewellery or keys from around the neck and remove items from near your face and sternum area before talking (e.g. pens, books, hands, gum, etc).

Some teachers have tied an elastic band around their keys to reduce the jingling sound from entering the microphone.

**Lanyard/Antenna:**
The lanyard by which the Phonak FM transmitter hangs around the neck is also the FM system’s antenna. As a result it is critical that the extra length of the cord is not tied or twisted in any way, but rather allowed to hang freely. Tying or twisting the cord will inhibit transmission of the auditory signal, possibly creating static or sound gaps in the student’s hearing aids.

**Audibility versus Intelligibility:**
While students with hearing loss may indeed attend to his name or appear to ‘hear’ without his personal FM system or even without his hearing aids, the use of both pieces of amplification remains critical within the educational environment. Hearing for sound awareness (audibility) is very different than hearing for speech understanding and comprehension (intelligibility). In order for students who wear hearing aids to hear well-enough to understand the subtle nuances of spoken speech and language the use of his personal FM system is a necessity.

For an example of what listening in noise sounds like to students with hearing loss please visit [http://www.utdallas.edu/~thib/fm_wav.html](http://www.utdallas.edu/~thib/fm_wav.html). You can compare sound sample of listening with a hearing aid only versus listening with a personal FM system. Scroll down to “Recordings in Noise” and listen to a variety of selections. An “environmental microphone” refers to the microphone on the hearing aid.

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Paraphrase and Identify Students:
As students move upward through the grades the number of learning opportunities which occur as a result of hearing classroom conversation and hearing peers answer and ask questions increases. The student with hearing aids and FM systems will best hear the individual speaking into the personal FM microphone or her peers sitting in immediate proximity. As a result these students have little to no access to questions, answers or comments spoken by the majority of her peers, nor will she be able to identify who is speaking. This will greatly impact her ability to follow classroom discussions, especially when a student comment triggers a slight change in topic. These are important listening situations which ultimately enhance the learning experience. Repeating student questions and paraphrasing student answers whenever possible can enhance comprehension by providing students with equal access to these incidental learning opportunities. In addition to paraphrasing student comments try to identify the student who provided the oral information.

Additionally, structured conversations increase the likelihood of involvement by a student with hearing loss. Topic introduction and maintenance will be extremely helpful for students with hearing loss as well as the other students in the classroom.

Incidental Learning:
Children spend much of their day engaged in either active or passive listening as a means of obtaining information. Students with hearing loss are not privy to ‘overhearing’ these background conversations. Therefore their background knowledge is weak which ultimately impacts the receptive and expressive vocabulary bank. Pre-teaching is a critical strategy for students with hearing loss because they do not have the opportunity to over-hear conversations that may include vocabulary in the instructional unit and will need to be directly taught many of these otherwise ‘overheard’ concepts or ideas.

For example: The word “evaporation” maybe heard hundreds of times on a radio weather report by a normal hearing student. A student with a hearing loss may hear it for the first time when the unit at school teaches about the water cycle.

New Vocabulary:
Student’s with hearing loss typically require significantly more time to learn new vocabulary as well as the subtleties of the English language. The importance of pre-teaching concepts or vocabulary of an upcoming unit is critical for the student’s understanding of the new material.

For example, prior to a unit on “transportation” allow the student to explore the pictures, words and objects that will be presented in class. See if she can (a) label (b) name the parts (c) state the function etc. This will help her build familiarity of a topic and confidence to “express” her learning in class.

Listing new vocabulary words on the blackboard during the lesson is also helpful, ensuring that the student is not overwhelmed with new material when trying to focus on a new task.

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Also, note vocabulary that the student is not familiar with and post teach it and/or send it home to be further discussed in context. As opportunities present themselves, ‘capture the moment’ to teach, rehearse, review vocabulary and concepts.

**Comprehension Monitoring:**
Students with a hearing loss will often report that they have heard what was said but in reality they have often misheard or have not fully understood the verbal information. It is important that the student understand teacher directions and instruction, however, even with amplification, students with hearing loss are at risk for missing large chunks of verbally presented information. Monitoring comprehension of verbally presented information by asking open-ended questions which require the student to provide a brief description or explanation (e.g. “What do you do now? What do you do next? What do you do with the...? Tell me about . . .”) this may help to identify any misunderstandings and provide clarification. Try to avoid questions that require a yes/no answers as you may often get a rhetorical “yes” response.

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