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A Structured and Personalized Listening Program for Deaf and Hard of Hearing High School Students: A Curriculum Development Project

MSSE Master's Project

Submitted to the Faculty of the Master of Science Program in Secondary Education of Students who are Deaf or Hard of Hearing

National Technical Institute for the Deaf ROCHESTER INSTITUTE OF TECHNOLOGY

By:

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In Partial Fulfillment of the Requirements for the Degree of Master of Science

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A Structured and Personalized Listening Program for High School Students:
A Curriculum Development Project

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Abstract:

There are many different kinds of auditory training programs available for use by children who are deaf or hard of hearing. However, there are only a few that are appropriate to be used by high school students and even fewer still that relate to the student’s academic courses. An auditory training curriculum for deaf and hard of hearing high school students was developed relating to a New York State regents course in biology using the CardMaster 2020 from Califone. Fifteen key vocabulary words from three biology units were chosen for use in this curriculum. Five of these fifteen words were not practiced by the students but served as a control. The ten vocabulary words that were to be practiced were also placed in ten sentences to be listened to and written down. All vocabulary words and sentences were recorded onto magnetic cards that were listened to using the CardMaster 2020, a magnetic card reader. Participants were able to improve their scores from the pre-test to the post-test after they practiced listening to the magnetic cards.

Project Overview:

This project contains three units of auditory training lesson plans based on a New York State High School Biology curriculum. The three lesson plans contain key words from biology units on Life Processes, Interdependence of Life, and Cell Function and Structure. Each lesson plan has fifteen key vocabulary words, pronunciation keys, and their definitions written out. In addition, each of these vocabulary words is recorded twice onto a magnetic card to be used in the CardMaster 2020, a magnetic card reader. A pre-test and post-test for each unit of vocabulary words has been created as well. Each unit also contains ten sentences that include ten of the fifteen vocabulary words in them. Magnetic cards have been recorded for each of these ten sentences to be listened to by the student. Each sentence has been typed up with a confidence
rating scale under it, so the student can rate how confident they are they wrote down correctly the sentence that they heard. Pre-tests and post-tests have been created for the sentence portion of each unit. Step by step directions explaining how to use the CardMaster 2020 as well as a flowchart that guides the listener through the steps of the lesson has been produced.

**Importance of Project:**

Many parents of high school students who are deaf or hard of hearing believe that it is important that their children use their hearing aids or cochlear implants every waking hour. They also feel that it would be valuable for their child to learn how to listen better using a structured listening program. However, this is a difficult goal for deaf students and requires time, motivation, and practice. Effective listening programs for these students provide personalized and individualized instruction. Further, integration of listening material with academic curricula is also desirable so that the listening program and the academic curricula are synergetic. Finally, self-instructional programs have been shown to be beneficial for deaf high school students who are learning to listen. Many of these students will also have Individualized Education Plans (IEP), if they are receiving for any special education services. Deaf or hard of hearing students’ IEPs may demand that the teacher provides them with auditory stimulation. This can put pressure on a teacher who is feeling overloaded by regular teaching responsibilities. Unfortunately most of the current listening training programs available are geared toward young children and are not appropriate for adolescents in high school. There is no auditory training tool on the market for high school students that can be individually programmed to match students’ needs as well as follow academic course curricula. The CardMaster from Califone, is a magnetic card reader that can be used in such a way to fill this void.
**Project Objective:**

The goal of this project is to provide secondary teachers with an effective and efficient program for individualized and independent auditory training. This auditory training program will be designed to synergistically link with academic curricula to reinforce learning of both spoken and written language.

**Literature Review:**

The U.S. **Bureau of the Census** estimates that nearly 8 million adults have difficulty understanding spoken conversations due to hearing loss (2004). Another 800,000 individuals with severe to profound hearing loss are estimated to be unable to hear spoken conversations. (Harrington, ed. 2004, Chart #3). For hearing-impaired persons, learning to listen is an ongoing process that needs to continue throughout the student’s school career. With the growing popularity of cochlear implants, more students are entering mainstream school environments than ever before. “A child with a cochlear implant is more likely to end up in mainstream education than is a child with comparable hearing who wears hearing aids” (Schery & Peters, 2003). Teachers in mainstream high schools who have deaf students in their class need to have a way to provide auditory stimulation for their students if they require it (for example, if it is written in their Individualized Education Plan) or if they request it. It is important for teachers to know what auditory training programs are available, suitable, and beneficial for high school students.

The main goal of auditory training is to help hearing-impaired people acquire auditory skills that those with normal hearing obtain on their own. It is also an attempt to break down communication barriers that hearing impairment causes and train those with a hearing loss to recognize speech using the auditory signal. Auditory training also teaches people to interpret
what they are hearing (Pratt, 2005). According to Schow and Nerbonne (2002), “Our [teachers’ and audiologists’] intent is to help the hearing-impaired child apply his or her impaired auditory sense to the fullest capacity in language communication, regardless of the degree of damage to the auditory system”.

Auditory training is making a resurgence in the field of audiology today. This is in part because research shows the efficacy of this type of training. Research has shown that although a person is deaf and his auditory system does not mature due to lack of stimulation, it does not lose its plasticity. Rather, even after years without auditory stimulation, when the auditory system is introduced to sound, either through the use of hearing aids or a cochlear implant, it will start to develop the same way as a hearing child’s would (Ponton, C.W., Don M., Eggermont, J.J., Waring, M.D., Kwong, B, & Masuda A., 1996). Auditory training can play an important role in helping to develop the auditory system of those who are deaf or hard of hearing. According to Bloom (2004), “Studies of adult brain plasticity prove absolutely that repetitive auditory stimuli can change the way the brain operates” (p. 20). Hayes, Warrier, Nicol, Zecker, and Kraus (2003), studied the effects of auditory training on neuronal plasticity and concluded that the training produced changes in many neural connections and created activity in many different levels of the auditory pathway.

Auditory skills can be organized in a hierarchy, depending on what stimuli are presented and the kind of response that is expected from the listener. The most basic auditory skill is detection of sound. A more difficult auditory skill is the ability to discriminate between sounds. It is even harder to identify a sound that is heard from a closed-set. The next level of auditory skills is being able to recognize sounds from an open-set while the most challenging skill is to be able understand the meaning of speech. These auditory skills build on each other and auditory
training programs provide structured opportunities for people to practice these skills (Blamey & Alcantara, 1994). Hearing aids can give a person access to sounds, but if a person is not a skilled listener, he will not be able to comprehend the message even if he can detect the sound. Auditory training can enhance a person’s listening abilities and his chances for understanding the meaning of the sounds they hear (Sweetow and Henderson-Sabes, 2004).

There are various approaches to auditory training. One program called “Bringing Sound to Life” was created by Mary Koch in 1999. Word Association for Syllable Perception or W.A.S.P. is part of this program and consists of 216 brightly colored picture cards that represent all the sounds of English in words that children can understand. When the student starts the program, they begin working with the cards that have single phonemes and simple syllables. As the students’ listening skills strengthen, they progress to more complex combinations of phonemes and syllables (Koch, 2000). This auditory training program cannot be used independently by a listener and is not well suited for high school aged students.

Another auditory training program is the Speech Perception Instructional Curriculum and Evaluation (SPICE) developed by Moog, Biedenstein, and Davidson in 1995. This program helps educators and clinicians evaluate the auditory skills of children with severe to profound hearing loss. The program contains goals for these children that are associated with four different aspects of speech perception: detection of speech, identification of supra-segmentals (duration, stress and intonation), recognition of vowels and consonants in isolation and words, and understanding connected speech (Schow & Nerbonne, 2002). This program is geared for children and contains sixteen toys for listening activities and 374 colored picture cards with words and sentences (CID). Similar to “Bringing Sound to Life”, this auditory training program cannot be used independently by listeners and is not well suited for high school aged students.
The above programs are comprehensive and represent the various kinds of auditory training programs that are available for young children. However, older students will be more motivated to practice listening if they can see the relevance between the auditory training program and the courses they are studying. Unfortunately the previously described programs do not support such individualized, personalized auditory training that reinforces spoken language drawn from an academic subject and that is related to a course curriculum (Moore, 1974).

Many commercial products for auditory training involve buying computer software. This can be very expensive. Also, itinerant teachers of the deaf may not have their own classrooms and/or computer to execute this software. However, there is a device, generically referred to, as a “Language Master” or a magnetic card reader that schools can buy which is relatively inexpensive, portable, and easy to use. It does not require software to be purchased and teachers can easily create programs for hearing impaired students that reinforces what is being taught in the classroom.

The CardMaster 2020 is a language master device that can be used for auditory training which allows students with a hearing loss to practice listening to words and sentences. This is a magnetic card reader system that is manufactured by Califone. The CardMaster 2020 allows students to work independently, at their own speed, and on their own time (Califone, 2003). The student can become fully capable of running this program on his own. This can also benefit teachers by allowing them to have more flexibility in their schedules (Brown & Arkebauer, 1970). In addition, the CardMaster 2020 can be individualized based on the student’s skill level. Speech teachers face an enormous challenge when trying to do auditory training with a group of hearing impaired students because each of the student’s strengths and weaknesses are different and therefore they require work in different areas. It is much more effective for the students to
engage in a self-instructional program and have the teacher walk around and provide one-on-one support for each student (Bloom, 1980).

This type of device allows the teacher to record him or herself saying words on different blank magnetic cards, essentially allowing the teacher to create the training curriculum based on what they are teaching in class. Once words or sentences are recorded by the teacher, the system allows the student to easily play them back as many times as they want in order to listen to how speech sounds. The student is also able to record himself saying the word on a different track and can play it back instantly which allows him to compare his production of the word to his teacher's to see if they sound similar (Califone, 2003). According to Bode & Oyer (1970), “The most useful single contribution of the learning theory is the provision for immediate knowledge given to the learners regarding their performance” (p. 840). This device also allows teachers to listen to the student's production of the practice words, even after the student has left for the day, because he recorded this voice on the cards (Califone, 2003).

In summary, while several auditory training programs are available for students to use, most of them are designed to meet the needs and interests of young children. The CardMaster created by Califone is more appropriate for secondary education level students because the teacher can use the content from their courses to easily create auditory training curricula for their student. This will serve to both reinforce the material the student is learning in class as well as provide listening practice for the student.

Activities:

Several activities were undertaken in order to complete this project. The first decision that needed to be made was which biology book should be used to base the lesson plans on. Next three units that were going to be focused on were chosen. Fifteen key vocabulary words
from each unit were picked and their definitions were typed up as well as a pronunciation key for each word. Five of the fifteen words must be chosen to be extra words that the student will not spend time practicing, but that will act as a control to see if students’ scores improve on the ten vocabulary words that they practiced on the post-test and not those five words that they did not spend much time listening to. Next lesson plans were created for the vocabulary words including a pre-test and a post-test. The vocabulary words were then recorded onto magnetic cards using the CardMaster 2020 magnetic card reader at ‘standard’ speed.

Then sentences were generated using the ten vocabulary words that the student will be practicing for each unit. A rating scale was produced and placed after each sentence. The scale is for the students to rate how confident they are that the sentence they heard is the one that they identified. The rating scale allows students to chose that they either have no idea if what they picked is right (0% confident), that they may be right but a probably wrong (25% confident), that they may be right or they may be wrong (50% confident), that they may be wrong but they are probably right (75% confident), or they are very sure that what they picked is right (100% confident). Each sentence was recorded onto a magnetic card at ‘half speed’ to be used with the CardMaster 2020 magnetic card reader. Lesson plans including how the student will use these sentences were created. Pre-tests and post-tests were also made.

Next simple, step-by-step directions for using the CardMaster 2020 were generated. A flowchart was also created for the student to refer to see what they should be working on and in what order. Information regarding where and how professionals can purchase the CardMaster 2020 made by Califone International was collected. Finally deaf students were asked to help test the materials and directions to check for understanding and clarity and necessary changes were made.
Implementation & Discussion:

Four people (1 faculty members and 2 students at the National Technical Institute for the Deaf (NTID) and one student from Nazareth College) helped me to test my materials. Each participant volunteered between 1 and 2 hours of their time to help review the instructional materials. They each filled out a feedback form after completing the activities. The items on the form included ratings for the clarity of the directions, sentence difficulty, whether listening to words influenced later practice with the sentences, and whether or not they felt the exercise improved recognition of the sentences that were practiced. In addition, each participant was asked to provide feedback relating to how the activity can be improved.

Participant #1

The first participant is a twenty-six year old student who is profoundly deaf. He is a skilled listener, who grew up oral, and did not learn sign language until recently. I worked with this participant on Unit #2 since he had previously been exposed to the vocabulary words that appeared in Unit #1. It was decided to have this student work on the vocabulary and the sentence activities in noise created by a cassette tape containing speech babble, due to the participant's level of listening skills.

This participant scored a 90% on the vocabulary pre-test missing the word 'consumer' and expressed that although he got the words 'carnivore', 'omnivores', and 'herbivore' correct, he was not 100% confident that he was right because he found it difficult to discriminate between the three of them. Next the student practiced listening the one word that he got wrong as well as the two words that he found difficult to distinguish. He wanted to practice listening to the word 'omnivores' as well, but it was one of the control words that he was not supposed to practice. I told him he would have an opportunity to listen to that word again after the activity was
complete. During the practice session the participant only felt he needed to listen to each word twice even though he was told he could listen to them as many times as he wanted. Therefore he was quickly ready to move on to the vocabulary post-test. He got a 90% on this as well however this time he missed the word 'herbivore'. The participant also recorded himself saying some of the words and compared his production with that of the teachers and seemed to enjoy being able to do so. The feedback that the participant provided me about the vocabulary activity is that he realized that sometimes he needed time to process the word. For example, he would listen to the word once, think he did not get it, and then go to listen to it again. However, just before he would put the card through a second time, he would say "Oh, I know it now!"

Next the participant moved to the sentence pretest. The participant was to match the sentences he heard on the cards to the same ten sentences printed on a worksheet. The pretest was repeated in the presence of multi-talker speech babble to increase the difficulty of the task. The student was able to identify the sentences with 100% accuracy in both conditions (with and without babble) on the pre-test. The participant provided me with feedback regarding this activity saying that he was trying to catch any word in the sentence, not necessarily the vocabulary word that he had recently practiced. It was then that I decided to change the sentence activity to something a little bit more challenging. From now on, students will listen to sentences without nose, and write down the sentence they hear on their worksheet instead of having to identify each one.

Participant #2

The next participant was a hearing audiologist at NTID. During the pretest she listened to the vocabulary words in the presence of a background of speech babble. The participant scored 100% on the vocabulary pretest, and therefore we skipped practicing the vocabulary
words and moved directly to the sentence activity. This was the first participant to test a new sentence activity in which the participants do not view the sentence list while taking the pretest. Rather, she listened to the sentences and wrote down each sentence, word-by-word, on a worksheet. The participant did this activity in noise as well. In contrast to the earlier sentence activity, the participant needed to listen to each word in the sentence in order to write down the full sentence correctly.

It appeared that she had little difficulty understanding (perceiving) every word she heard. It also seemed as if she did have difficulty remembering every word in the sentence. After having the opportunity to listen to each word twice, she was able to write down all of the sentences completely. The feedback she provided me was that these sentences may be too difficult for some deaf and hard of hearing students because of the rate the sentence is spoken as well as the difficult content material. She recommended that the sentence activity contained two different levels of difficulty for the student. Some students will need to work on identifying sentences first before they can move onto writing down the sentence they hear. For future use of this curriculum, teachers may want provide different levels of difficulty for the listening tasks.

Participant #3

The next participant was a hearing student at Nazareth College, who works in the Spoken Language Learning and Practice Lab at NTID. I had her skip the vocabulary portion of the unit because she had only a limited time available to work with me. She worked on the sentence activity in noise generated by a cassette tape with speech babble on it. The first time she heard the sentence she tried to write down as much as she could remember. Then she used her second opportunity to listen to the sentence, to fill in anything she missed the first time and to check herself. She scored a 90% on the sentence pre-test because she missed one word, 'symbiosis'.

because the word was unfamiliar to her and she did not understand what she had heard. We both felt that she would have gotten that sentence correct if she had practiced the vocabulary words before hand because she would have been more familiar with that word. The feedback she gave me was that the sentence activity felt more like a memory test than a listening test to her because she could hear everything that was being said but the trouble was remembering everything in order to write it. She did not work on the sentence post-test activity because we assumed that now that she knew the word 'symbiosis', she would get 100% correct.

Participant #4

The fourth and final participant that tested my materials had a moderate to severe hearing loss and was a student at NTID. This participant grew up oral and did not learn sign language until this past fall, and he was fairly skilled at listening. I worked with him on the third unit I created, since it was the only unit that had not yet been critiqued. On the vocabulary word pre-test and the student got 70% correct. During his practice session he only felt he needed to listen to the words one more time each in order to feel that he could get them right on the post-test. The participant completed the vocabulary post-test and scored 100% correct. Next, he completed the sentence pretest. On the pre-test, the student scored 0% because while he was able to catch many words, he was unable to get all of them correctly in any one sentence. He also rated himself as having a low confidence that he was correct on most of the sentences. During the practice he looked over the sentences and read each sentence as he played the corresponding card. His score on the post-test increase to 70% correct and his confidence levels increased as well when compared to the sentence pre-test. The student's feedback indicated that he felt the activities did help him improve his ability to recognize the key vocabulary words as well as the sentences.

Summary:
Based on my experience implementing this auditory training curriculum, students seemed to enjoy practicing the biology words and sentences. Also, the students felt that the exercises have helped them recognize the key vocabulary words when they heard them. I also learned that this curriculum will need to be modified based on the student who is working with it, her needs, and her level of listening skill. Some students may never be able to write down the sentences they hear and get them correct. For these students it would be more appropriate for them to identify sentences from a list of sentences so that it is a closed set exercise. In the future, people may want to try to use a variety of people to record the material in order to give the student a chance to listen to as many different voices as possible, male and female, young and old.

Conclusion:

Although there are many auditory training programs available for deaf and hard of hearing students who want to practice their listening skills, very few are designed for high school students. The curriculum developed is directly related to a high school biology course in hopes that it motivates students by providing them with listening practice that is related to their life. Three units were developed for this curriculum based on key vocabulary words that appear on the New York State Biology regents. Vocabulary words and sentences with the vocabulary words embedded in them were recorded on to magnetic cards to be listened to through the CardMaster 2020, a magnetic card reader created by Califone. This curriculum was tested in a very limited way and many more trials would need to be completed before its effectiveness could be measured. Further, the initial results underscore the wide variability in listening skills that requires flexibility in scoring and practice procedures. Nevertheless, the early results are promising in that the participants were clearly engaged by the various activities and felt that the
practice increased their listening comprehension of words and sentences based on an important and challenging high school curriculum.
References:


### Unit 1

<table>
<thead>
<tr>
<th>Sentence</th>
<th># of Words per Sentence</th>
<th>Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 During anaerobic respiration energy is released from food without the help of oxygen.</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>2 When the body detects bacteria in the blood antibodies form to try to weaken it.</td>
<td>15</td>
<td>9.1</td>
</tr>
<tr>
<td>3 Poison and bacteria are types of <strong>antigens</strong> that enter the body and can cause disease.</td>
<td>15</td>
<td>9.1</td>
</tr>
<tr>
<td>4 The <strong>aorta</strong> carries blood filled with oxygen out of the heart and to the organs.</td>
<td>15</td>
<td>6.7</td>
</tr>
<tr>
<td>5 The components of living systems must work together to maintain <strong>homeostasis</strong>.</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>6 <strong>Hydrolysis</strong> breaks down the complex molecules into smaller ones during digestion.</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>7 The digestive system enables the human to carry out the life functions of <strong>nutrition</strong>.</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>8 A valve in the <strong>pulmonary artery</strong> prevents blood from flowing the wrong way.</td>
<td>13</td>
<td>7.6</td>
</tr>
<tr>
<td>9 During <strong>respiration</strong> energy is released from food so that cell can use it.</td>
<td>13</td>
<td>7.6</td>
</tr>
<tr>
<td>10 The heart’s <strong>ventricle</strong> helps force blood from the heart to the lungs.</td>
<td>12</td>
<td>2.8</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>13.2</td>
<td>8.89</td>
</tr>
</tbody>
</table>

### Unit 2

<table>
<thead>
<tr>
<th>Sentence</th>
<th># of Words per Sentence</th>
<th>Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Green plants and algae are examples of <strong>autotrophs</strong> because they make their own food.</td>
<td>14</td>
<td>6.7</td>
</tr>
<tr>
<td>2 Some carnivores, such as wolves and lions kill other animals and eat their bodies.</td>
<td>14</td>
<td>7.5</td>
</tr>
<tr>
<td>3 <strong>Consumers</strong> get their energy by eating other organisms rather than making their own food.</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>4 <strong>Decomposers</strong> break down dead complex organisms into simpler ones for food.</td>
<td>11</td>
<td>10.1</td>
</tr>
<tr>
<td>5 The earth contains many different <strong>ecosystems</strong> that are home to millions of different species.</td>
<td>14</td>
<td>11.7</td>
</tr>
<tr>
<td>6 The change from one season to the next affects the <strong>equilibrium</strong> of the environment.</td>
<td>14</td>
<td>9.2</td>
</tr>
<tr>
<td>7 Moose and cattle are examples of two <strong>herbivores</strong> that eat only plants to get their energy.</td>
<td>16</td>
<td>8.3</td>
</tr>
<tr>
<td>8 Two types of <strong>heterotrophs</strong> include bacteria and fungi because they eat other forms of life.</td>
<td>15</td>
<td>9.9</td>
</tr>
<tr>
<td>9 Plants use light from the sun and convert it into food through a process called <strong>photosynthesis</strong>.</td>
<td>16</td>
<td>7.6</td>
</tr>
<tr>
<td>10 <strong>Symbiosis</strong> means ‘living together’ and describes the close relationship between two different species.</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>14.1</td>
<td>9.3</td>
</tr>
<tr>
<td>Unit 3</td>
<td>Sentence</td>
<td># of Words per Sentence</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Photosynthesis takes place in the plant’s chloroplast where sunlight is converted into energy.</td>
<td>13</td>
</tr>
<tr>
<td>2</td>
<td>Chlorophyll provides the plant’s cells with their green color and is found in chloroplasts.</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>Everything between the cell membrane and nucleus is called cytoplasm and it’s made up of mostly water.</td>
<td>17</td>
</tr>
<tr>
<td>4</td>
<td>When particles move from an area of high concentration to one of lower concentration it’s called diffusion.</td>
<td>17</td>
</tr>
<tr>
<td>5</td>
<td>Living things eat glucose that is made by plants through the process of photosynthesis.</td>
<td>14</td>
</tr>
<tr>
<td>6</td>
<td>Organic compounds have carbon-hydrogen bonds that inorganic compounds do not have.</td>
<td>11</td>
</tr>
<tr>
<td>7</td>
<td>The mitochondrion releases chemical energy from food during the process of respiration.</td>
<td>12</td>
</tr>
<tr>
<td>8</td>
<td>DNA, which stores genetic information about the cell, is housed in the cell’s nucleus.</td>
<td>14</td>
</tr>
<tr>
<td>9</td>
<td>During the process of osmosis, water passes through the cell membrane from one side to the other.</td>
<td>17</td>
</tr>
<tr>
<td>10</td>
<td>When amino acids link together and form a chain, they are called polypeptides.</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td><strong>Average</strong></td>
<td><strong>14.2</strong></td>
</tr>
</tbody>
</table>
Directions for Using the CardMaster 2020
Directions for Using the CardMaster

1. Move the volume knob on the top of them CardMaster from 0 to 3 or 4. This will turn the CardMaster on, and is a good volume for recording speech. You will see the green light located above the volume control turn on.

2. Find the folder labeled for the unit you are working on. (Notice on the back of the card the word that you will hear is printed).

3. Make sure that the machine is on the correct speed for the listening task you will be doing: vocabulary words= standard, sentences= half. To change the speed of the card-reader, turn it over and open the battery box. Find the switch inside and move it either to “standard” or “half”.

4. One card will be inserted into the CardMaster at a time, with the magnetic strip facing you, so that the printed word is on the back. **In order to hear the word that is recorded on the card, the blue ‘TEACHER’ button must be pressed down. If the green button labeled ‘STUDENT’ is pressed down, you will hear nothing, because you have not recorded anything yet...you will do this later.**

5. Insert one card at the right hand side of the slot. Make sure that the card is flat against the bottom of the slot. Feed the card across until it reaches the arrow and then the machine will feed it the rest of the way.

6. Next you will need to record yourself saying the word you just heard one time. To do this, you will remove the card you just listened to and ****PRESS DOWN THE GREEN BUTTON LABELED STUDENT****. This is important because if you don’t, you will erase what the teacher has said. Then re-insert the card and press the ‘RECORD’ button. (Don’t worry, this will not tape over what the teacher just said, it will simply record your voice on a separate track. You can also record your voice again, if you are not happy with the way it came out. To do this, simply re-insert the card and press the ‘RECORD’ button again).

7. When you are ready to move onto the next word you must press down the blue button labeled ‘TEACHER’ in order to hear the word. Follow the steps written above in order to record yourself saying that word. (REMEMBER- when you are ready to record, the card it, press down the red ‘RECORD’ button and say the word).

8. You can listen to the cards and record them in any order. Once you are familiar with the words on the cards, you can mix up the order and try to pick out the word by listening only, without looking at the word on the back of the card.
Day 1

Review directions for using the CardMaster

Pretest for Vocabulary Words

Practice & Record Vocabulary Words

Identify 10 cards correctly/ or 10 min. before end of hour?

Yes

Vocabulary Word Post-Test

No
Day 2

**Listen to Sentences on Half Speed**
(See directions for help with this!)

1. Pretest for Sentences
2. Practice Sentences
3. Identify 10/10 Cards?
   - No
   - Yes
     - Post-Test for Sentences
Unit 1: Life Processes

Vocabulary Words & Sentences
Appendices:

Unit #1: Life Processes

I. Objectives:
   1) Students will be able to listen and identify ten key vocabulary words from Biology Unit #1: Life Processes with 100% accuracy.
   2) Students will be able to pronounce the ten key vocabulary words from Biology Unit #1: Life Processes with 80% accuracy.
   3) Students will be able to write down each of the ten sentences containing the above vocabulary words that they hear on the magnetic cards with 80% accuracy.

II. Materials:
   • CardMaster 2020 & step by step directions how to use the machine
   • 15 magnetic cards with the ten unit #1 vocabulary words recorded on them and the word written on the back of each card
   • Pre-test worksheet
   • List of the fifteen vocabulary words, a pronunciation key for each word, and the definition of each word
   • Post-test worksheet
   • A folder to keep all the materials will be labeled Unit #1 Life Processes
   • Vocabulary words: anaerobic, antibody, antigen, aorta, homeostasis, hydrolysis, nutrition, pulmonary, respiration, ventricle
   • Five words on magnetic cards that the student will listen to for pre-test and post-test but not practice: organelles, esophagus, capillaries, trachea, metabolism
   • Ten sentences including one vocabulary word from the unit each and ten magnetic cards with the sentence recorded on them

III. Activities-
   PART 1- Vocabulary Words: ***Make sure the speed of the machine is “Standard”. Do this by turning the machine over and opening the battery box and making sure the switch inside is on “Standard” and not “Half”****

1) The student will take out the CardMaster 2020 machine along with the directions and the folder that is labeled Unit #1 vocabulary.
2) They will follow the directions for the CardMaster 2020 as to how to listen to what is on the cards. First the student will take out the pre-test worksheet labeled “Unit #1-Vocab Words” and the fifteen cards. The student should not look on the back of the card to see what the word is but instead for the pre-test they should simply write down what they think that they heard. If the student did not catch the word, that is okay, they should just put a line through that answer on their worksheet. (There are fifteen words on the pre-test and post-test although students will only be practicing ten words). This way they can have a baseline for their listening ability with these words before they practice.
3) Next the student will check how they did by turning the cards over and going back through them comparing the words with what they wrote down. The student will
correct themselves and see how many they got right without any practice and how many they got wrong. As they are checking their answers, they should make three piles: 1) the words you got correct on the pre-test 2) the words you didn’t get correct on the pre-test 3) the cards that say extra next to the word on the back of them.

4) Now the student is welcome to view the definitions and pronunciation worksheet at this point in the lesson. The student will now listen to the cards they got incorrect looking at the vocabulary word on the back of the card. The student should listen to each card as many times as they feel necessary, until they think they can identify the vocabulary word on that card just by listening to it.

5) As the student hears each word, they should try to repeat what they heard. They can refer to the pronunciation key for each word if they want to.

6) Once the student feels comfortable reciting each word, they should follow the directions on the CardMaster 2020 direction sheet, for how to record their voice saying the word. Students should record themselves on the student track for each card, reciting the word as best they can. Students can listen back to what they recorded as well as re-record themselves saying the word as many times as they want, until they feel satisfied with it. They only need to record the word ONE time per card.

7) Once the student feels they can identify each word just by listening to it, they can get out the post-test worksheet from the Unit #1 folder. The student should mix up the ten cards so they can be presented for the post-test in random order. The students may listen to each card two times during the post-test. They should put the cards in a pile face down after they listen to it so that they can check themselves after the test is complete to see how they did and compare their scores to their pre-test scores.

Day 2: Sentences: ****Make sure speed on CardMaster is set to “Half”!! Do this by turning the machine over, opening the battery box and making sure the switch inside is on half instead of ‘standard’. ****

1) Then the student will take out the pre-test sentence worksheet labeled with ten sentences on it as well as the cards labeled “Unit #1- Sentences”. For this activity, the student will listen to each of the cards twice and try to write down the sentence on their worksheet in the space provided next to the letter that matches the letter on the back of the card. The students will rate themselves using the scale provided, how confident they are that they got the sentence correct and they would if they heard it again.

2) Once they are finished, they will check themselves against a worksheet that has the sentences written out on them and they will make two piles of cards: one for those they got correct, and one for those sentences that need more practice.

3) For the sentences that need more practice, the student should listen to each one of these cards until they feel they will be able to write down 10 out of 10 sentences by listening only.

4) Then the students can take out the sentence post-test worksheet and mix up all of the sentence cards again and follow the same procedures as they did with the pretest, only now they have more exposure to the key vocabulary words than they did before. They can check their answers when they are finished. The student should compare their confidence level for listening to the sentences for the pretest, with the levels they
checked for the posttest and see if their confidence levels have improved after practice.

5) Finally, the student should return all cards and worksheets into the Unit #1 folder and put everything back where they got it.

IV. Assessment:

- The teacher will review all the worksheets in the Unit #1 folder for the student. The teacher will look for the student’s score on the post-test and if it is 100%, the student is ready to move on to the next lesson in Unit #1. If the student was not able to identify all ten words by listening to the phonetic model, they will continue practice listening to these words the next time they come into work on their listening skills.
- The teacher will also listen to each of the words recorded by the student and see if 80% of the vocabulary words are intelligible. If not, the teacher will decide what assistance they can provide to that student in order to help them more clearly be able to pronounce the word.
- The teacher will review the sentence pre and post test worksheets and see where the student had any difficulties.

V. References:


Unit #1: Pre-Test

**Directions:** Without looking at the back of each card, put each card through the CardMaster 2020 card-reader one at a time. Listen carefully to the word that you hear and write down the word on the line. You may listen to the word two times.

1) 
2) 
3) 
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12) 
13) 
14) 
15)
Unit #1 Key Words

Life Processes

1) **anaerobic (respiration)**: 
   a type of respiration in which energy is released from organic molecules without the help of oxygen

2) **antibody**: 
   A chemical substance produced by the body in response to the presence of an antigen (foreign invader) that neutralizes the antigen.

3) **antigen**: 
   a chemical substance, usually a protein, which the body's immune system sees as a foreign invader and is neutralized by a specific antibody

4) **aorta**: 
   the main artery that carries blood from the heart to the body tissues

5) **capillary**: 
   the tiny blood vessels connecting arteries and veins

6) **esophagus**: 
   a muscular tube that leads from the cavity behind the mouth to the stomach

7) **homeostasis**: 
   the condition of balance and stability that characterizes living systems under normal conditions

8) **hydrolysis**: 
   the chemical process by which a complex food molecule is split into simpler components through the addition of a water molecule to the bonds that hold the complex molecule together.

9) **metabolism**: 
   the sum of the processes by which a particular substance is handled in the living body

10) **nutrition**: 
    the life function in which living things obtain food and process it for their use

11) **organelle**: 
    a structure in a single-celled living thing that has a special task
12) **pulmonary (artery):** \( \text{pul-m&-er-E 'ar-t&-rE} \)
on one of the two arteries that carry blood from the heart to the lungs

13) **respiration:** \( \text{res-p&-'rA-shn} \)
the life function by which living things convert the energy of organic foods into a form
more easily used by the cell

14) **trachea:** \( \text{trA-ke} \)
the main part of the system of tubes by which air passes to and from the lungs in
vertebrates

15) **ventricle:** \( \text{ven-tri-k&l} \)
one of the two thick-walled muscular chambers of the heart that pump blood out of the
lungs and body
Pronunciation Key

\&\ as a and u in abut
\&\ as e in kitten
\&\ as ur/er in further
\&\ as a in ash
\&\ as o in mop
\au\ as ou in out
\ch\ as ch in chin
\el\ as e in bet
\E\ as ea in easy
\E\ as g in go
\i\ as i in hit
\i\ as j in job
\[ng]\ as ng in sing
\O\ as o in go
\ol\ as aw in law
\oi\ as oy in boy
\th\ as th in thin
\th\ as th in th
\u\ as oo in loot
\u\ as oo in foot
\y\ as y in yet
\zh\ as si in vision

Unit #1 Post-test

**Directions:** Without looking at the back of each card, put each card through the CardMaster 2020 card-reader one at a time. Listen carefully to the word that you hear and write down the word on the line. You may listen to the word two times. Remember, five of these words you have not practiced, do your best anyway.

1) __________________________

2) __________________________

3) __________________________

4) __________________________

5) __________________________

6) __________________________

7) __________________________

8) __________________________

9) __________________________

10) __________________________

11) __________________________

12) __________________________

13) __________________________

14) __________________________

15) __________________________
Unit #1 Sentences Pre-Test

Directions: Find the ten magnetic cards that are labeled Unit #1 Sentences. Look at the back of the card, see what letter is on it, and find that letter on your answer sheet. In the space provided write down the sentence that you hear on the magnetic card. You may listen to each card two times. Draw a line on the answer sheet through any part of the sentence that you do not understand.

Next, rate how confident you are that the sentence you picked is the one that you just heard and that you would get this sentence correct the next time you heard it. Circle either:
- No Idea- if you don’t know if the sentence you heard is the one you picked
- Maybe Yes/Maybe No- If you are not sure the sentence you heard is the one you picked
- Very Sure- If you know the sentence you heard is the sentence you picked

A) ______________________

B) ______________________
C) 

0% 50% 100%
No Idea Maybe Yes Maybe No Very Sure

D) 

0% 50% 100%
No Idea Maybe Yes Maybe No Very Sure

E) 

0% 50% 100%
No Idea Maybe Yes Maybe No Very Sure
F) 

No Idea  
Maybe Yes  
Maybe No

G) 

No Idea  
Maybe Yes  
Maybe No

H) 

No Idea  
Maybe Yes  
Maybe No
Unit #1 Sentences

A) During anaerobic respiration energy is released from food without the help of oxygen.

B) When the body detects bacteria in the blood antibodies form to try to weaken it.

C) Poison and bacteria are types of antigens that enter the body and can cause disease.

D) The aorta carries blood filled with oxygen out of the heart and to the organs.

E) The components of living systems must work together to maintain homeostasis.

F) Hydrolysis breaks down the complex molecules into smaller ones during digestion.

G) The digestive system enables the human to carry out the life function of nutrition.

H) A valve in the pulmonary artery prevents blood from flowing the wrong way.

I) During respiration energy is released from food so the cell can use it.

J) The heart's right ventricle helps force blood from the heart to the lungs.
Unit #1 Sentences Post-Test

Directions: Find the ten magnetic cards that are labeled Unit #1 Sentences. Look at the back of the card, see what letter is on it, and find that letter on your answer sheet. In the space provided write down the sentence that you hear on the magnetic card. You may listen to each card two times. Draw a line on the answer sheet through any part of the sentence that you do not understand.

Next, rate how confident you are that the sentence you picked is the one that you just heard and that you would get this sentence correct the next time you heard it. Circle either:
No Idea - if you don’t know if the sentence you heard is the one you picked
Maybe Yes/ Maybe No - If you are not sure the sentence you heard is the one you picked
Very Sure - If you know the sentence you heard is the sentence you picked

A)

B)
Unit 2: Interdependence of Life

Vocabulary Words & Sentences
Unit #2: Interdependence of Life

IV. Objectives:
1) Students will be able to listen and identify ten key vocabulary words from Biology Unit #2: Interdependence of Life with 100% accuracy.
2) Students will be able to pronounce the ten key vocabulary words from Biology Unit #2: Interdependence of Life with 80% accuracy.
3) Students will be able to write down each of the ten sentences containing the above vocabulary words that they hear on the magnetic cards with 80% accuracy.

V. Materials:
- CardMaster 2020 & step by step directions how to use the machine
- 10 magnetic cards with the ten unit #1 vocabulary words recorded on them and the word written on the back of each card
- Pre-test worksheet
- List of the ten vocabulary words, a pronunciation key for each word, and the definition of each word
- Post-test worksheet
- A folder to keep all the materials will be labeled Unit #2 Vocabulary
- Vocabulary words: autotroph, carnivore, consumer, decomposer, ecosystem, equilibrium, herbivore, heterotrophs, photosynthesis, symbiosis
- Five words on magnetic cards that the student will listen to for pre-test and post-test but not practice: abiotic, biomes, competition, interdependent, omnivores
- Ten sentences including one vocabulary word from the unit each and ten magnetic cards with the sentence recorded on them

III. Activities-
PART 1- Vocabulary Words: ****Make sure the speed of the machine is “Standard”. Do this by turning the machine over and opening the battery box and making sure the switch inside is on “Standard” and not “Half”****

1) The student will take out the CardMaster 2020 machine along with the directions and the folder that is labeled Unit #2 vocabulary.
2) They will follow the directions for the CardMaster 2020 as to how to listen to what is on the cards. First the student will take out the pre-test worksheet labeled “Unit #2-Vocab Words” and the fifteen cards. The student should not look on the back of the card to see what the word is but instead for the pre-test they should simply write down what they think that they heard. If the student did not catch the word, that is okay, they should just put a line through that answer on their worksheet. (There are fifteen words on the pre-test and post-test although students will only be practicing ten words). This way they can have a baseline for their listening ability with these words before they practice.
3) Next the student will check how they did by turning the cards over and going back through them comparing the words with what they wrote down. The student will correct themselves and see how many they got right without any practice and how many they got wrong. As they are checking their answers, they should make three
piles: 1) the words you got correct on the pre-test 2) the words you didn’t get correct on the pre-test 3) the cards that say extra next to the word on the back of them.

4) Now the student is welcome to view the definitions and pronunciation worksheet at this point in the lesson. The student will now listen to the cards they got incorrect looking at the vocabulary word on the back of the card. The student should listen to each card as many times as they feel necessary, until they think they can identify the vocabulary word on that card just by listening to it.

5) As the student hears each word, they should try to repeat what they heard. They can refer to the pronunciation key for each word if they want to.

6) Once the student feels comfortable reciting each word, they should follow the directions on the CardMaster 2020 direction sheet, for how to record their voice saying the word. Students should record themselves on the student track for each card, reciting the word as best they can. Students can listen back to what they recorded as well as re-record themselves saying the word as many times as they want, until they feel satisfied with it. They only need to record the word ONE time per card.

7) Once the student feels they can identify each word just by listening to it, they can get out the post-test worksheet from the Unit #2 folder. The student should mix up the ten cards so they can be presented for the post-test in random order. The students may listen to each card two times during the post-test. They should put the cards in a pile face down after they listen to it so that they can check themselves after the test is complete to see how they did and compare their scores to their pre-test scores.

Day 2: Sentences. ****Make sure speed on CardMaster is set to “Half”!! Do this by turning the machine over, opening the battery box and making sure the switch inside is on half instead of “standard”. ****

1) Then the student will take out the pre-test sentence worksheet labeled with ten sentences on it as well as the cards labeled “Unit #2- Sentences”. For this activity, the student will listen to each of the cards twice and try to write down the sentence on their worksheet in the space provided next to the letter that matches the letter on the back of the card. The students will rate themselves using the scale provided, how confident they are that they got the sentence correct and they would if they heard it again.

2) Once they are finished, they will check themselves against a worksheet that has the sentences written out on them and they will make two piles of cards: one for those they got correct, and one for those sentences that need more practice.

3) For the sentences that need more practice, the student should listen to each one of these cards until they feel they will be able to write down 10 out of 10 sentences by listening only.

4) Then the students can take out the sentence post-test worksheet and mix up all of the sentence cards again and follow the same procedures as they did with the pretest, only now they have more exposure to the key vocabulary words than they did before. They can check their answers when they are finished. The student should compare their confidence level for listening to the sentences for the pretest, with the levels they checked for the posttest and see if their confidence levels have improved after practice.
5) Finally, the student should return all cards and worksheets into the Unit #1 folder and put everything back where they got it.

IV. Assessment:
- The teacher will review all the worksheets in the Unit #2 folder for the student. The teacher will look for the student's score on the post-test and if it is 100%, the student is ready to move on to the next lesson in Unit #2. If the student was not able to identify all ten words by listening to the phonetic model, they will continue practice listening to these words the next time they come into work on their listening skills.
- The teacher will also listen to each of the words recorded by the student and see if 80% of the vocabulary words are intelligible. If not, the teacher will decide what assistance they can provide to that student in order to help them more clearly be able to pronounce the word.
- The teacher will review the sentence pre and post test worksheets and see where the student had any difficulties.

VI. References:
Unit #2: Pre-test

Directions: Without looking at the back of each card, put each card through the CardMaster 2020 card-reader one at a time. Listen carefully to the word that you hear and write down the word on the line. You may listen to the word two times.

1) ________________________
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13) ________________________
14) ________________________
15) ________________________
Unit #2 Key Words
Interdependence of Life

1) abiotic (factor): 
any of several nonliving physical conditions that affect the survival of an organism in its environment

2) autotroph: 
an organism that uses light or chemical energy to make its own food

3) biome: 
a major community with its own unique animal life and climate (as tropical rain forest, grassland, or desert)

4) carnivore: 
an organism that eats animal tissue as its main source of nutrition

5) competition: 
the active seeking after and use of an environmental resource (as food) in limited supply by two or more plants or animals

6) consumer: 
a plant or animal that obtains food by preying on other living things or eating particles of organic matter

7) decomposer: 
any animal that feeds on and gets its energy by breaking down the decay of plant or animal tissues which also makes organic nutrients available to the ecosystem.

8) ecosystem: 
the study of plant and animal communities interaction with the living environment

9) equilibrium: 
when a system is balanced, stable, and does not change

10) herbivore: 
organisms that eat plants as their primary source of nutrition

11) heterotroph: 
organisms that must obtain food from outside sources of organic nutrients like plants and animals, they do not make their own food

12) interdependent: 

plants and animals depend on each other and their physical environment

13) **omnivores** \(\text{\textipa{{"\textipa{{"\textipa{omni}vors}}} \)}\)
    an organism that eats both animals and plant substances

14) **photosynthesis** \(\text{\textipa{"fo-sin(t)\text{-th\&-s\&s}}} \)
    occurs when green plants use the energy of sunlight to change carbon dioxide into and water into glucose (sugar)

15) **symbiosis** \(\text{\textipa{"sim-bE-O-s\&s}}} \)
    when organisms of different species live together in close physical association.
Pronunciation Key

\&\ as a and u in abut \e\ as e in bet \o\ as aw in law
\&\ as e in kitten \E\ as ea in easy \o\ as oy in boy
\&\ as ur/er in further \g\ as g in go \th\ as th in thin
\l\ as a in ash \i\ as i in hit \th\ as th in the
\A\ as a in ace \N\ as i in ice \u\ as oo in loot
\l\ as o in mop \j\ as j in job \u\ as oo in foot
\au\ as ou in out \[ng]\ as ng in sing \y\ as y in yet
\ch\ as ch in chin \O\ as o in go \zh\ as si in vision

Unit #2 Post-test

Directions: Without looking at the back of each card, put each card through the CardMaster 2020 card-reader one at a time. Listen carefully to the word that you hear and write down the word on the line. You may listen to the word two times. Remember, five of these words you have not practiced, do your best anyway.

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Unit #2 Sentences Pre-Test

Directions: Find the ten magnetic cards that are labeled Unit #2 Sentences. Look at the back of the card, see what letter is on it, and find that letter on your answer sheet. In the space provided write down the sentence that you hear on the magnetic card. You may listen to each card two times. Draw a line on the answer sheet through any part of the sentence that you do not understand.

Next, rate how confident you are that the sentence you picked is the one that you just heard and that you would get this sentence correct the next time you heard it. Circle either:

No Idea- if you don’t know if the sentence you heard is the one you picked
Maybe Yes/ Maybe No- If you are not sure the sentence you heard is the one you picked
Very Sure- If you know the sentence you heard is the sentence you picked

A)

B)
A) Green plants and algae are examples of **autotrophs** because they make their own food.

B) Some **carnivores**, such as wolves and lions kill other animals and eat their bodies.

C) **Consumers** get their energy by eating other organisms rather than making their own food.

D) **Decomposers** break down dead complex organisms into simpler ones for food.

E) The earth contains many different **ecosystems** that are home to millions of different species.

F) The change from one season to the next affects the **equilibrium** of the environment.

G) Moose and cattle are examples of two **herbivores** that eat only plants to get their energy.

H) Two types of **heterotrophs** include bacteria and fungi because they eat other forms of life.

I) Plants use light from the sun and convert it into food through a process called **photosynthesis**.

J) Symbiosis means ‘living together’ and describes the close relationship of two different species.
Name: ___________________________  Date: ____________

**Unit #2 Sentences Post-Test**

Directions: Find the ten magnetic cards that are labeled Unit #2 Sentences. Look at the back of the card, see what letter is on it, and find that letter on your answer sheet. In the space provided write down the sentence that you hear on the magnetic card. You may listen to each card two times. Draw a line on the answer sheet through any part of the sentence that you do not understand.

Next, rate how confident you are that the sentence you picked is the one that you just heard and that you would get this sentence correct the next time you heard it.
Circle either:
- **No Idea** - if you don’t know if the sentence you heard is the one you picked
- **Maybe Yes/Maybe No** - If you are not sure the sentence you heard is the one you picked
- **Very Sure** - If you know the sentence you heard is the sentence you picked.

A) ___________________________

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C)

No Idea  Maybe Yes  Maybe No  Very Sure

D)

No Idea  Maybe Yes  Maybe No  Very Sure

E)
Unit 3: Cell Function & Structure

Vocabulary Words & Sentences
Unit #3: Cell Function and Structure

I. Objectives:
1) Students will be able to listen and identify ten key vocabulary words from Biology Unit #3: Cell Function and Structure with 100% accuracy.
2) Students will be able to pronounce the ten key vocabulary words from Biology Unit #3: Cell Function and Structure with 80% accuracy.
3) Students will be able to write down each of the ten sentences containing the above vocabulary words that they hear on the magnetic cards with 80% accuracy.

II. Materials:
- CardMaster 2020 & step by step directions how to use the machine
- 10 magnetic cards with the ten unit #1 vocabulary words recorded on them and the word written on the back of each card
- Pre-test worksheet
- List of the ten vocabulary words, a pronunciation key for each word, and the definition of each word
- Post-test worksheet
- A folder to keep all the materials will be labeled Unit #3 Vocabulary
- Vocabulary words: chlorophyll, chloroplast, cytoplasm, diffusion, glucose, inorganic, mitochondrion, nucleus, osmosis, polypeptide
- Five words on magnetic cards that the student will listen to for pre-test and post-test but not practice: dehydration, lipids, nitrogen, nucleotide, ribosome
- Ten sentences including one vocabulary word from the unit each and ten magnetic cards with the sentence recorded on them

III. Activities:

PART 1- Vocabulary Words: ****Make sure the speed of the machine is “Standard”. Do this by turning the machine over and opening the battery box and making sure the switch inside is on “Standard” and not “Half”****

1) The student will take out the CardMaster 2020 machine along with the directions and the folder that is labeled Unit #3 vocabulary.
2) They will follow the directions for the CardMaster 2020 as to how to listen to what is on the cards. First the student will take out the pre-test worksheet labeled “Unit #3- Vocab Words” and the fifteen cards. The student should not look on the back of the card to see what the word is but instead for the pre-test they should simply write down what they think that they heard. If the student did not catch the word, that is okay, they should just put a line through that answer on their worksheet. (There are fifteen words on the pre-test and post-test although students will only be practicing ten words). This way they can have a baseline for their listening ability with these words before they practice.
3) Next the student will check how they did by turning the cards over and going back through them comparing the words with what they wrote down. The student will correct themselves and see how many they got right without any practice and how
many they got wrong. As they are checking their answers, they should make three piles: 1) the words you got correct on the pre-test 2) the words you didn’t get correct on the pre-test 3) the cards that say extra next to the word on the back of them.

4) Now the student is welcome to view the definitions and pronunciation worksheet at this point in the lesson. The student will now listen to the cards they got incorrect looking at the vocabulary word on the back of the card. The student should listen to each card as many times as they feel necessary, until they think they can identify the vocabulary word on that card just by listening to it.

5) As the student hears each word, they should try to repeat what they heard. They can refer to the pronunciation key for each word if they want to.

6) Once the student feels comfortable reciting each word, they should follow the directions on the CardMaster 2020 direction sheet, for how to record their voice saying the word. Students should record themselves on the student track for each card, reciting the word as best they can. Students can listen back to what they recorded as well as re-record themselves saying the word as many times as they want, until they feel satisfied with it. They only need to record the word ONE time per card.

7) Once the student feels they can identify each word just by listening to it, they can get out the post-test worksheet from the Unit #3 folder. The student should mix up the ten cards so they can be presented for the post-test in random order. The students may listen to each card two times during the post-test. They should put the cards in a pile face down after they listen to it so that they can check themselves after the test is complete to see how they did and compare their scores to their pre-test scores.

Day 2: Sentences: ****Make sure speed on CardMaster is set to “Half”!! Do this by turning the machine over, opening the battery box and making sure the switch inside is on half instead of ‘standard’. ****

1) Then the student will take out the pre-test sentence worksheet labeled with ten sentences on it as well as the cards labeled “Unit #3- Sentences”. For this activity, the student will listen to each of the cards twice and try to write down the sentence on their worksheet in the space provided next to the letter that matches the letter on the back of the card. The students will rate themselves using the scale provided, how confident they are that they got the sentence correct and they would if they heard it again.

2) Once they are finished, they will check themselves against a worksheet that has the sentences written out on them and they will make two piles of cards: one for those they got correct, and one for those sentences that need more practice.

3) For the sentences that need more practice, the student should listen to each one of these cards until they feel they will be able to write down 10 out of 10 sentences by listening only.

4) Then the students can take out the sentence post-test worksheet and mix up all of the sentence cards again and follow the same procedures as they did with the pretest, only now they have more exposure to the key vocabulary words than they did before. They can check their answers when they are finished. The student should compare their confidence level for listening to the sentences for the pretest, with the levels
they checked for the posttest and see if their confidence levels have improved after practice.
5) Finally, the student should return all cards and worksheets into the Unit #1 folder and put everything back where they got it.

**IV. Assessment:**
- The teacher will review all the worksheets in the Unit #3 folder for the student. The teacher will look for the student’s score on the post-test and if it is 100%, the student is ready to move on to the next lesson in Unit #3. If the student was not able to identify all ten words by listening to the phonetic model, they will continue practice listening to these words the next time they come into work on their listening skills.
- The teacher will also listen to each of the words recorded by the student and see if 80% of the vocabulary words are intelligible. If not, the teacher will decide what assistance they can provide to that student in order to help them more clearly be able to pronounce the word.
- The teacher will review the sentence pre and post test worksheets and see where the student had any difficulties.

**V. References:**
Unit #3: Pre-test

Directions: Without looking at the back of each card, put each card through the CardMaster 2020 card-reader one at a time. Listen carefully to the word that you hear and write down the word on the line. You may listen to the word two times.

1) ________________________
2) ________________________
3) ________________________
4) ________________________
5) ________________________
6) ________________________
7) ________________________
8) ________________________
9) ________________________
10) ________________________
11) ________________________
12) ________________________
13) ________________________
14) ________________________
15) ________________________
Unit #3 Key Words
Cell Function and Structure

1) chloroplast: \"klor-\"plast\ 
a cell organelle that has chlorophyll and is the site of photosynthesis

2) chlorophyll: \"klor-\"fil\ 
the green color in plant cells that absorbs sunlight and makes certain parts of photosynthesis possible

3) cytoplasm: \"si-t\"pla-z&m\ 
a watery medium
for the suspension of cell organelles and where many of the cell’s chemical reactions take place

4) dehydration: \"de-\"hI-\'drA-sh&n\ 
to remove water from something

5) diffusion: \di-\'fyü-zh&n\ 
a form of passive transport (requires no energy) where dissolved substances pass through the plasma membrane from an area of high concentration to an area of lower concentration of the substance

6) glucose: \,glu-\"kos\ 
a sugar produced during photosynthesis and used by both plants and animals as a fuel in the process of respiration

7) inorganic (compound): \"i-\"nor-\'ga-nik 'käm-\"paund \ 
a chemical compound that does not have a carbon- hydrogen bond in it

8) lipids: \li-p&d\ 
any of various substances (as fats and waxes) that with proteins and carbohydrates make up the principal structural parts of living cells

9) mitochondrion: \"mi-t&-\'kan-drE-&n\ 
a cell organelle that contains the enzymes that are needed for aerobic respiration

10) nitrogen: \\"nI-tra-j&n\ 
a colorless tasteless odorless gaseous element forms a part of all living tissues

11) nucleotide: \\"nü-kI-E-\&\"tId\ 
any of the basic units of structure of DNA that consist of a joined to a sugar with five carbon atoms in a molecule and to a phosphate group
12) **nucleus**: \(\text{nu-klE-s}\)
   a cell organelle that contains the cell’s genetic information in the form of chromosomes

13) **osmosis**: \(\text{az-mO-s&b}\)
   a form of passive transport (requires no energy) by which water is absorbed or released by cells

14) **polypeptide**: \(\text{p&-lE-`pep-"tI&}\)
   a molecular chain of amino acids

15) **ribosome**: \(\text{rI-b&-"sOm}\)
   one of numerous small RNA-containing particles in a cell that are sites of protein synthesis
Unit #3 Post-test

Directions: Without looking at the back of each card, put each card through the CardMaster 2020 card-reader one at a time. Listen carefully to the word that you hear and write down the word on the line. You may listen to the word two times. Remember, five of these words you have not practiced, do your best anyway.

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2) ____________________________
3) ____________________________
4) ____________________________
5) ____________________________
6) ____________________________
7) ____________________________
8) ____________________________
9) ____________________________
10) ____________________________
11) ____________________________
12) ____________________________
13) ____________________________
14) ____________________________
15) ____________________________
Unit #3 Sentences: Pre-Test

Directions: Find the ten magnetic cards that are labeled Unit #3 Sentences. Look at the back of the card, see what letter is on it, and find that letter on your answer sheet. In the space provided write down the sentence that you hear on the magnetic card. You may listen to each card two times. Draw a line on the answer sheet through any part of the sentence that you do not understand.

Next, rate how confident you are that the sentence you picked is the one that you just heard and that you would get this sentence correct the next time you heard it. Circle either:
No Idea- if you don’t know if the sentence you heard is the one you picked
Maybe Yes/Maybe No- If you are not sure the sentence you heard is the one you picked
Very Sure- If you know the sentence you heard is the sentence you picked

A)

B)

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<td>H) No Idea</td>
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A) Photosynthesis takes place in the plant’s chloroplast where sunlight is converted into energy.

B) Chlorophyll provides the plant’s cells with their green color and is found in chloroplasts.

C) Everything between the cell membrane and nucleus is called cytoplasm and it’s made up of mostly water.

D) When particles move from an area of high concentration to one of low concentration it’s called diffusion.

E) Living things eat glucose that is made by plants through the process of photosynthesis.

F) Organic compounds have carbon-hydrogen bonds that inorganic compounds do not have.

G) The mitochondrion releases chemical energy from food during the process of respiration.

H) DNA, which stores genetic information about the cell, is housed in the cell’s nucleus.

I) During the process of osmosis, water passes through the cell membrane from one side to the other.

J) When amino acids link together and form a chain, they are called polypeptides.
Unit #3 Sentences: Pre-Test

Directions: Find the ten magnetic cards that are labeled Unit #3 Sentences. Look at the back of the card, see what letter is on it, and find that letter on your answer sheet. In the space provided write down the sentence that you hear on the magnetic card. You may listen to each card two times. Draw a line on the answer sheet through any part of the sentence that you do not understand.

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Maybe Yes/Maybe No - If you are not sure the sentence you heard is the one you picked
Very Sure - If you know the sentence you heard is the sentence you picked

A)

B)
A) Photosynthesis takes place in the plant’s **chloroplast** where sunlight is converted into energy.

B) **Chlorophyll** provides the plant’s cells with their green color and is found in chloroplasts.

C) Everything between the cell membrane and nucleus is called **cytoplasm** and it’s made up of mostly water.

D) When particles move from an area of high concentration to one of low concentration it’s called **diffusion**.

E) Living things eat **glucose** that is made by plants through the process of photosynthesis.

F) **Organic compounds** have carbon-hydrogen bonds that inorganic compounds do not have.

G) The **mitochondrion** releases chemical energy from food during the process of respiration.

H) **DNA**, which stores genetic information about the cell, is housed in the cell’s **nucleus**.

I) During the process of **osmosis**, water passes through the cell membrane from one side to the other.

J) When amino acids link together and form a chain, they are called **polypeptides**.
Name: ___________________________  Date: ___________

Unit #3 Sentences: Post-Test

Directions: Find the ten magnetic cards that are labeled Unit #3 Sentences. Look at the back of the card, see what letter is on it, and find that letter on your answer sheet. In the space provided write down the sentence that you hear on the magnetic card. You may listen to each card two times. Draw a line on the answer sheet through any part of the sentence that you do not understand.

Next, rate how confident you are that the sentence you picked is the one that you just heard and that you would get this sentence correct the next time you heard it.
Circle either:
No Idea- if you don’t know if the sentence you heard is the one you picked
Maybe Yes/Maybe No- If you are not sure the sentence you heard is the one you picked
Very Sure- If you know the sentence you heard is the sentence you picked

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J)
Feedback on Instructional Package
High School Biology
Supplemental Listening Exercises for CI Students

1. Are the instructions clear?

| Strongly agree | Half and Half | Strongly Disagree |

2. Are the sentences too difficult?

| Strongly agree | Half and Half | Strongly Disagree |

3. Did this exercise improve your ability to recognize these words?

| Strongly agree | Half and Half | Strongly Disagree |

4. Did this exercise improve your ability to recognize these sentences?

| Strongly agree | Half and Half | Strongly Disagree |

5. How can this activity be improved?

__________________________________________________________________________
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__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________