

Lesson plan for the patient with central auditory processing disorder or cognitive difficulties

Week	Games	Voices	Comments/Notes
1	* pEARl Crunch, adjust noise to quiet and then with each “new necklace”, add just a little more noise * FarmEAR in the Dell	Male Male	
2	* EARonaut, adjust noise to quiet and then with each new trial, add just a little more noise * Treasure EARland	Male Male	
3	* MountainEAR * ShakespEARe	Male Male	
4	* pEARl Crunch, adjust noise to quiet and then with each “new necklace”, add just a little more noise * FarmEAR in the Dell	Female Female	
5	* EARonaut, adjust noise to quiet and then with each new trial, add just a little more noise * Treasure EARland	Female Female	
6	* MountainEAR * ShakespEARe	Female Female	
7	* pEARl Crunch, adjust noise to quiet and then with each “new necklace”, add just a little more noise * FarmEAR in the Dell	Child Child	
8	* EARonaut, adjust noise to quiet and then with each new trial, add just a little more noise * Treasure EARland	Child Child	
9	* MountainEAR * ShakespEARe	Child Child	

10	* pEARl Crunch, adjust noise to preference	All types
	* EARonaut, adjust noise to preference	All types
11	* ShakespEARE	All types
	* MountainEAR	All types
12	* FarmEAR in the Dell	All types
	* Treasure EARland	All types

	Goals	Tips
<b>Week 1</b>	<p>Play pEARL Crunch at least 10 minutes twice this week with a male talker starting in quiet and then adding noise on the scroll bar with each play.</p> <p>Play FarmEAR in the Dell at least 10 minutes twice this week with a male talker.</p>	<p>“pEARL Crunch forces you to pay attention to those endings of words that add subtle meaning, such as the plural “s” in the word <i>boys</i> or the negative “n’t” in the word <i>can’t</i>. These endings are often hard to hear and easy to ignore.”</p> <p>“During every day listening, we tend to listen for the ‘meat’ of the word and not subtle nuances. For instance, we often do not distinguish between the words <i>smile</i> and <i>smiles</i>. This game forces you to pay attention to word endings. Think about it: There’s a big difference between, “I <i>can</i> pick you up from the airport” and “I <i>can’t</i> pick you up from the airport.”</p> <p>“If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced into the training task. The game is programmed to have more noise after you make consecutive correct answers and less noise after you make consecutive incorrect answers.”</p> <p>“Try to ignore the background noise and pay attention to which picture matches the word you’ve just heard. This activity will develop ‘auditory attention’, which is the brain’s ability to focus on one auditory stimulus and ignore other auditory stimuli that are irrelevant and distracting.”</p> <p>“You may find that some of the pictures are a little ambiguous and that it takes some thought to match the word that you hear with the pictures that you see. This</p>

		ambiguity is intentional. Research has shown that when listening tasks which force the brain to focus on meaning and it requires the brain to think of different possibilities, learning occurs more quickly.”
<b>Week 2</b>	<p>Play EARonaut at least 10 minutes twice this week with a male talker starting in quiet and then adding noise on the scroll bar with each play.</p> <p>Play Treasure EARland for about 10 minutes twice this week with a male talker.</p>	<p>“Try playing a few rounds of EARonaut with the noise bar set to quiet. Over the next rounds, gradually increase the level of background noise and try to determine the maximum of noise that can be present during the game and yet allow you still to hear the male talkers speak the words. You might find that you are using a lot more ‘mental effort’ when you are listening in noise than when you are listening in quiet. This is a very natural phenomenon.”</p> <p>“If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced into the training task. The game is programmed to have more noise after you make consecutive correct answers and less noise after you make consecutive incorrect answers.”</p> <p>“One purpose of Treasure EARland is to increase your confidence in your abilities to recognize words. Research has shown that when you doubt your ability to hear words correctly, you actually don’t hear them as well as when you have high confidence in your ability. The mind becomes distracted by the doubt.”</p>
<b>Week 3</b>	Play MountainEAR at least 10 minutes twice this week with a male talker.	“If the noise seems to be getting louder, that means that you are actually getting better at listening in noise because the better you do, the more noise is introduced

	<p>Play ShakespEARE Island at least 10 minutes twice this week with a male talker.</p>	<p>into the training task. The game is programmed to have more noise after you make consecutive correct answers and less noise after you make consecutive incorrect answers.”</p> <p>“This game may help develop your ability to remember the details of a story. It exercises your ‘auditory memory’, which is the brain’s ability to hold in memory words and sentences that you have recently heard.”</p> <p>“At first you may have a hard time remembering which sentence came first, second, third, fourth and fifth. Try to get at least three sentences in the correct order for each paragraph.”</p>
<b>Week 4</b>	<p>Play pEARL Crunch at least 10 minutes twice this week with a female talker starting in quiet and then adding noise on the scroll bar with each play.</p> <p>Play FarmEAR in the Dell at least 10 minutes twice this week with a female talker.</p>	<p>“The noise will make this task more difficult so really pay attention to the end of words.”</p> <p>“This game is important training because the ends of words often convey a lot of meaning.”</p> <p>“If you feel that the training is getting too hard, go ahead and turn down the noise with the noise bar. If you feel that the training is getting too easy, turn up the noise.”</p> <p>“Sometimes the pictures may be a little confusing. This is okay. The goal is to make you think very hard about the meaning of the words.”</p> <p>“Try to ignore the noise and pay attention to which picture matches the word you’ve just heard. This activity will develop</p>

		<p>‘auditory attention’, which is the brain’s ability to focus on one auditory stimulus and ignore other auditory stimuli that are irrelevant and distracting.”</p>
<b>Week 5</b>	<p>Play EARonaut at least 10 minutes twice this week with a female talker starting in quiet and then adding noise on the scroll bar with each play.</p> <p>Play Treasure EARland for about 10 minutes twice this week with a female talker.</p>	<p>“Try playing a few rounds of EARonaut with the noise bar set to quiet. Over the next rounds, gradually increase the level of background noise and try to determine the maximum of noise that can be present during the game and yet allow you still to hear the voice speak the words. You might find that you are using a lot more ‘mental effort’ when you are listening in noise than when you are listening in quiet. This is a very natural phenomenon.”</p> <p>“If the noise gets louder as you play, this means you are doing better. You are developing an important cognitive skill called ‘auditory attention’, which is your ability to ignore noise and attend only to the important speech.”</p>
<b>Week 6</b>	<p>Play MountainEAR at least 10 minutes twice this week with a female talker.</p>	<p>“This game is important because it may help you to recognize words quickly, which is important when you are listening to connected speech. The typical talker of English speaks between 110 and 150 words per minute. This means that you must have good ‘auditory processing speed’ to understand speech, which is the brain’s ability to quickly process the meaning of words.”</p> <p>“Sometimes you might be confused and not be able to decide which picture matches the word that you just heard. This is okay. This game will require that you make quick</p>

	<p>Play ShakespEARE Island at least 10 minutes twice this week with a female talker.</p>	<p>decisions about what you heard and sometimes this is hard to do.”</p> <p>You may have a hard time remembering which sentence came first, second, third, fourth and fifth. As you play, you will develop your ability to remember the ordering of the sentences.</p>
<b>Week 7</b>	<p>Play pEARL Crunch at least 10 minutes twice this week with a child talker starting in quiet and then adding noise on the scroll bar with each play.</p> <p>Play FarmEAR in the Dell at least 10 minutes twice this week with a child talker.</p>	<p>Start by playing the game in quiet. On the second trial, bump up the noise just a little. On each subsequent trial, bump up the noise just a little more until you reach a point where you are getting three or four pearls for every necklace. Do not move the bar again but train at this noise level.”</p> <p>“This game is designed to help you to recognize common, everyday days more easily.”</p> <p>“Background noise will make children’s voices especially difficult to understand. This is because children tend to talk more softly than adults and because noise is especially detrimental to high pitched voices.”</p>
<b>Week 8</b>	<p>Play EARonaut at least 10 minutes twice this week with a child talker starting in quiet and then adding noise on the scroll bar with each play.</p>	<p>“When you listen in noise, you may find that it is more difficult to remember what people say. This game exercises your ability to remember words, even if listening conditions are difficult.”</p> <p>“Children’s voices are harder to hear than those of men or women. You might find that you have a hard time remembering the words. That’s okay because this is only natural.”</p>

	<p>Play Treasure EARland for about 10 minutes twice this week with a child talker. Listen to the single words in noise and try to increase your coins each round.</p>	<p>“Try playing a few rounds of EARonaut with the noise bar set to quiet. Over the next rounds, gradually increase the level of background noise and try to determine the maximum of noise that can be present during the game and yet allow you still to hear hear the voice the words. You might find that you are using a lot more ‘mental effort’ when you are listening in noise than when you are listening in quiet. This is a very natural phenomenon.”</p> <p>“This game teaches you to hear differences between words that sound very similar. Discriminating words is a very important skill for successful listening.”</p> <p>“Even though this game is designed to develop your phoneme discrimination, which is your ability to decide whether two sounds are the same or different, it is also developing your ability to focus on the meaning of words and developing your sense of self-confidence in your listening abilities.”</p>
<b>Week 9</b>	<p>Play MountainEAR at least 10 minutes twice this week with a child’s voice.</p>	<p>“Remember, if the noise seems to be getting louder as you play, this means you are getting better at listening and paying attention to the words.”</p> <p>“Children’s voices are especially hard to hear when you are listening in noise. MountainEAR exercises your ability to understand the meaning of words, even if you are having a hard time hearing.”</p>



	<p>Play ShakespEARE Island at least 10 minutes twice this week with a child talker.</p>	<p>“Because children’s voices are especially hard to hear, you may have a difficult time remembering the story. This is okay. You will get better with practice.”</p> <p>“This game is developing your ability to remember the beginning, middle, and endings of stories. This is an important skill when listening to people in your everyday conversations.”</p>
<b>Week 10</b>	<p>Play pEARL Crunch at least 10 minutes twice this week with a mix of talkers starting in quiet and then adding noise on the scroll bar with each play.</p> <p>Play EARonaut at least 10 minutes twice this week with a mix of talkers starting in quiet and then adding about steps of noise on the scroll bar with each play.</p>	<p>“Start by playing the game in quiet. On the second trial, bump up the noise just a little. On each subsequent trial, bump up the noise just a little more until you reach a point where you are getting two or three pearls for every necklace. Do not move the bar again but train at this noise level.”</p> <p>“Concentrate on hearing the endings of the words as this will help you to select the correct picture.”</p> <p>“Try playing a few rounds of EARonaut with the noise bar set to quiet. Over the next rounds, gradually increase the level of background noise and try to determine the maximum of noise that can be present during the game and yet allow you still to hear the voices speak the words. You might find that you are using a lot more ‘mental effort’ when you are listening in noise than when you are listening in quiet. This is a very natural phenomenon.”</p>

<b>Week 11</b>	<p>Play MountainEAR at least 10 minutes twice this week with a mix of talkers.</p>          <p>Play ShakespEARE Island at least 10 minutes twice this week with a mix of talkers.</p>	<p>"You may not realize it, but you will likely be just a little bit slower in playing this game now that you are playing with many types of voices. The reason for this is that when you listen to multiple talker types, the brain has to use more 'mental effort' to process the meaning of words than when you listen to the same talker type speak the words. As a result of increased mental effort, the brain has to take more time to process meaning, and this will slow down your response time."</p>          <p>"Take your time in playing this game. The goal in this game is to remember what you heard and not to finish the game quickly."</p>          <p>"Try to ignore the sound of the talkers' voices and to focus on the meaning of the sentences that they are speaking. This will develop your ability to understand spoken stories." "Even though listening to all types of talkers is more difficult than listening to a single type of talker, such as a male voice, research has shown that training with all types mixed together leads to faster learning and to better generalization to everyday listening than does training with a single talker type."</p>

<b>Week 12</b>	<p>Play FarmEAR in the Dell at least 10 minutes twice this week with a mix of talkers.</p> <p>Play Treasure EARland for about 10 minutes twice this week with a mix of talkers.</p>	<p>“Training with all types of talkers is the most difficult training task. However, research shows that training with “multiple talkers” is most effective in training the brain to recognize common, everyday words.”</p> <p>“Listening to a variety of talkers is challenging so don’t become discouraged if you have difficulty in distinguishing the words.”</p> <p>“As you continue to play, try betting more coins and increasing your confidence in your ability to listen.”</p>