Therapy Guide

Author

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Editorial, Music & Technology Contributor

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Possible Goals:

Cognitive	Physical	Social/Emotional
Concentration	Dynamic Sitting or Standing Balance	Self-Exploration
Attention	Grasping	Self-Expression
Memory	Reaching	Regulating Behavior
Problem Solving	Gross Muscle Coordination	Frustration Tolerance
Directionality	Fine Muscle Coordination	Verbal Response
Object Recognition	Bilateral Integration	
Color Recognition	Crossing Midline	
New Learning	Motor Control	
Decision Making	Active Range of Motion	
Organization and Planning	Visual Motor Integration	
Sequencing		

Staff Requirement: One therapist and possibly one other individual to demonstrate the virtual reality (VR) experience. The additional person for demonstration is particularly recommended for individuals who have never been exposed to virtual reality before and/or those presenting with anxiety or uncertainty about participation.

Group Size: 1-3 participants. This session can be done as an individual session or small group session to orient multiple individuals to the equipment and virtual reality experience. If a group session is utilized, participants will need to have skills to sit and observe others during part of the session and a longer period of time will be needed to enable all individuals to participate.

Setting: Private room with limited distractions. Virtual Reality (VR) environment set up with room to move around comfortably. Chairs if activity is to be performed from a seated position or if multiple participants will be involved so they have space to sit when observing other participants. Monitor/LCD attached to the computer should be set up at a desk where participants will be able to see the screen for the first part of the introduction.

Duration: 10-40 minutes (depending on participant interest and ability, and number of individuals in the group). For individuals who are new to VR, or who may need extended time on specific tasks, it may work best to complete the Jam Studio Virtual Reality Intro over multiple sessions.

Music Suggestions: Blue Notes, Jamboree, Magic Carpet, Nouveau Maestro

Procedure:

<u>Therapist Tasks Prior to Session</u>

1. Set up the Virtual Reality (VR) equipment in a private area with limited distractions. Set the background to **Black Infinity** to best enable the participant to focus on specific features in the environment. Go into the **Global Settings** and turn **Flashing Lights** and **Show Music Notes** off. This is important to minimize potentially distracting and overstimulating elements during the orientation process. Choose a song from the music selections above, aiming to select a song from a genre of music that may be of interest to the participant(s).

<u>Once the Participant(s) Arrive</u>

2. **If participant(s) are new to VR**, provide a brief explanation of VR. "Virtual reality is an activity that allows us to experience things through our computer and this special equipment (headset and hand controllers). When we put on the headset, we see things that don't really exist, but appear as if they do. We can participate in fun activities with the items we see. Today we are going to learn how to make music using virtual reality instruments."

   If participant(s) are familiar with VR, explain that you will be introducing them to some VR music making activities to work on their goals, but that first you want to orient them to the equipment and skills that will be needed to engage in these activities.

3. Start by showing each participant the VR equipment (headset, hand controllers, and computer screen) that will be used. Ensure that individuals can hold on to one or both of the controllers and move them to different positions by reaching forward. Assess the individual's ability to operate the trigger.

   Show the individual the computer screen and explain this is what they will see when they put on the headset.

   Show the individual the headset and ask them to try it on and then remove it. If the individual requires assistance with the headset, help them position it comfortably and remove it.

4. Since the VR environment may be fatiguing or overstimulating for some individuals, it is recommended that you establish a system for each individual to exit the VR environment at any time. This is especially important for individuals who require assistance getting the headset on and off. You might agree on a physical signal (stomp foot or tap headset) or verbal command ("stop", "done" or "off") if the participant is not able to state "I would like to stop now."

5. Have the individual sit or stand in the virtual environment and just look around. If the individual is able, have them tell you what they are seeing.

6. Have the participant remove the VR headset and position them so they can see the computer screen. Explain the instrument panel and how the individual will play instruments by reaching out and touching the icon they want to play. Model for them how they would play with one hand, two hands and create rhythmic patterns by tapping the same instrument multiple times.

7. If an additional person is available who is familiar with the equipment, have them enter the VR environment to demonstrate the different tasks below that the participant will be performing. This will allow the participant to see what they will be doing and will display different areas of the VR environment such as the side panel controls on the computer screen.

8. Use the Jam Studio Virtual Reality Intro Session Form to keep track of orientation to specific tasks. Not all tasks will be appropriate for all individuals, so select only those tasks appropriate for the individual's functional level and/or focus of treatment. The session form designates Level 1 and Level 2 tasks as certain tasks are more challenging than others. It is recommended that individuals master most of the Level 1 tasks before moving on to Level 2.

Level 1 Tasks

- Play single instrument icon
- Create rhythm pattern on single instrument icon (strike it multiple times)
- Play multiple instrument icons in sequence with one hand
- Play multiple instrument icons in sequence using both hands
- Play two instrument icons simultaneously using both hands
- Start and stop rhythm track by activating the rhythm button
- Adjust volume by sliding control lever

Level 2 Tasks
- Turn around in the virtual environment to face the front, right, left and rear
- Use trigger to grab and move single instrument icons
- Rearrange instrument icons by picking them up one at a time and moving them to different locations or repositioning them
- Stack instrument icons on top of each other
- Play stacked instrument icons
- Go into Global Settings and change Background (NOTE: **Black Infinity, City Scape Serenity, The Studio and Sky Dome** are recommended for therapy purposes)

The Session Form also has space for recording the level of assistance needed with specific tasks and other comments that summarize baseline performance. Therapists can also note preferences for each individual at the end of the form.

9. After specified tasks have been introduced, allow the participant time to experiment on their own. "Great Job. You can now take a few minutes to play on your own if you like. Go ahead and try out some of the new skills you just learned."

10. Once the Jam Studio Virtual Reality Intro has been completed, it is recommended that the first activity the participant progresses to is "Virtual Reality Simon Says". This activity will reinforce concepts and skills learned through the Jam Studio Virtual Reality Intro.

- For some participants, the therapist may want to set up the instrument panel in advance so that only a limited number of instrument icons are visible in front of the individual. This can be done by moving some to the back of the environment or overhead. If the individual will be participating sitting down, it may also be helpful to have the instrument icons positioned at a lower level and angled for easier access.

- If the participant has limited familiarity with musical instruments, and instrument names and/or instrument families (e.g. strings, percussion, woodwinds) may be important given the individual's focus of treatment, additional time should be spent at the computer screen (not using VR equipment) to look at different icons and learn musical instrument names.

- Additional time at the computer screen to view instrument icons may also be needed if the therapist will be calling icons by a specific name (e.g. "I will refer to this icon as a piano, this one as a guitar and this one as a violin"). Another option is to go through the specific icons with the participant and let them decide what the icons should be called. In this case, a separate page of notes should be created with the names that will be used so this can be consistent from session to session.

- If it is appropriate for the individual, the Jam Studio Virtual Reality Intro can be expanded to include a demonstration of how to find and pull up the app on the computer and set up the equipment for the session.

Directions

Use this orientation checklist to record participant orientation to the Virtual Reality program.

Tasks: Specific tasks are listed to guide you in orienting individual participants.

Oriented: Check the corresponding box when the individual has been introduced to a task.

Not Applicable: Check the corresponding box in this column if a task is not appropriate for the participant due to functional abilities and/or focus of treatment.

Demonstrates Task: Check the corresponding box when the participant demonstrates the designated task.

Level of Assistance: This column should be used to note the level of assistance that was required for the individual to demonstrate the specified task. This should be noted in the blank space provided. The following codes are recommended. However, some therapists may have other coding systems they prefer to use.

Code	Level of Assistance	Criteria
I	Independent	Able to perform task safely without any therapist assistance
Mod-I	Modified Independent	Able to safely perform task with use of an assistive device or modified technique
CGA	Contact Guard Assist	Able to safely perform task with therapist providing hands-on contact, but no assistance
Min-A	Minimum Assistance	Able to perform task safely with therapist providing < 25% of effort
Mod-A	Moderate Assistance	Able to perform task with therapist providing 25 – 50% of the effort
Max-A	Maximum Assistance	Able to perform task with therapist providing 50 – 75% of the effort
D	Dependent	Able to perform task with therapist providing > 75% of the effort
VC	Verbal Cues	Assistance provided by therapist was in form of verbal prompts, reminders and/or guidance
PP	Physical Prompt	Assistance provided by therapist was in form of physical guidance and/or hand over hand assistance

Comments: Add additional notes that summarize client skill level, comments, and/or preferences that will assist in setting goals and/or structuring future sessions.

Jam Studio Virtual Reality Intro

Participant Name: _____

Task	Oriented	Not Applicable	Demonstrates Task	Level of Assistance	Comments
Virtual Reality Equipment					
Hold hand Controllers	☐	☐	☐		
Press Trigger on controller	☐	☐	☐		
Put on VR Headset	☐	☐	☐		
Stand in virtual environment with headset and hand controllers	☐	☐	☐		
Sit in virtual environment with headset and hand controllers	☐	☐	☐		

Task	Oriented	Not Applicable	Demonstrates Task	Level of Assistance	Comments
Virtual Reality Equipment – Level 1					
Play Single Instrument	☐	☐	☐		
Create rhythm pattern on single instrument icon (strike it multiple times)	☐	☐	☐		
Play multiple instrument icons in sequence with one hand	☐	☐	☐		
Play multiple instrument icons in sequence using both hands	☐	☐	☐		
Play two instrument icons simultaneously using both hands	☐	☐	☐		
Start and stop rhythm track by activating the rhythm button	☐	☐	☐		
Adjust volume by sliding control lever	☐	☐	☐		

Notes regarding participant preferences

Positioning:

Backgrounds:

Music:

Instruments:

Tasks:

Task	Oriented	Not Applicable	Demonstrates Task	Level of Assistance	Comments
Virtual Reality Equipment – Level 2					
Turn in virtual reality environment to look to the front, right, left and rear	☐	☐	☐		
Use trigger to grab and move single instrument icon	☐	☐	☐		
Rearrange instrument icons by picking them up one at a time and moving them to different locations	☐	☐	☐		
Stack instrument icons on top of each other	☐	☐	☐		
Play stacked instrument icons	☐	☐	☐		
Go into Global Settings and change background	☐	☐	☐		
Change song by scrolling through list	☐	☐	☐		

Notes regarding participant preferences

Positioning:

Backgrounds:

Music:

Instruments:

Tasks:

Virtual Reality Simon Says

Cognitive	Physical	Social/Emotional
Attention	Dynamic Sitting or Standing Balance	Self-Exploration
Concentration	Gross Muscle Coordination	Listening Skills
Short Term Memory	Visual Motor Integration	Frustration Tolerance
Long Term Memory	Fine Muscle Coordination	Verbal Response
Problem Solving	Active Range of Motion	
Sequencing	Bilateral Integration	
Object Recognition	Crossing Midline	
Color Recognition	Reaching	
Directionality	Motor Control	
Following Directions		

Staff Requirement: One therapist

Group Size: 1-2 participants. This session can be done as an individual session or as a longer session with two participants.

Setting: Quiet space with limited distractions. Virtual Reality (VR) environment set up with room to move around comfortably. Chair will be necessary if activity is being performed in a seated position. A chair without arms is recommended for greater range of motion. Additional chair will be needed if session involves two participants so one can sit while the other is in the VR environment.

Duration: 10-20 minutes for one participant; 20–40 minutes for two participants

Music Suggestions: Magic Carpet, Nouveau Maestro

Procedure:

1. Set up the Beamz Virtual Reality equipment in a private area with limited distractions.

2. Verify the participant(s) have previously completed the Jam Studio Virtual Reality Intro session. It will be helpful to review which tasks each individual was oriented to and any additional notes regarding individual preferences from the Jam Studio Virtual Reality Intro session form before starting the activity.

3. Prepare the provided session forms for this activity by determining which tasks will be included in the session. Develop a list of Simon Says commands that are appropriate for client goals. Therapists working with more advanced clients will definitely want to be prepared with multiple step commands. This will allow the therapist to be able to focus on the response of the participant, instead of on remembering the correct command.

4. Introduce the Virtual Reality Simon Says activity rules to the participant(s). Ask if the individual has ever played Simon Says. If they have, ask them to summarize the rules of the game. If they have not played before, or if a review of the rules is necessary, explain the following.

    "Simon Says is a game focused on following instructions. I will give you instructions of a specific action to complete. If the instructions begin with, "Simon Says….", then you should complete the action. If the instruction is given without specifying that Simon Says to do it, you should not perform the action. This will require you to listen closely. Some of the instructions will involve one task and some will involve more than one action. If multiple steps are given after Simon says, you should complete all of these tasks."

    Examples:

    A. "Simon says pick up your hand controllers" (You pick up your hand controllers).
    B. "Simon says play a green icon with your right hand then a red icon with your left hand" (You play a green icon with your right hand then a red icon with your left hand).
    C. "Start the rhythm track" (You do nothing since the instructions do not say Simon says to do so).

5. Set up participant(s) in either a seated or standing position, then assist in arranging the VR headset and hand-held controllers so they are comfortable for the individual. If the individual is able to put their own headset on, or is working on skill development in this area, you may want to start the "Simon Says" commands at this point ("Simon says put on your VR headset"). If the session involves two participants, one will start in the VR environment and the other will watch. The participant playing the game will continue until they "miss" one of the instructions or a designated time frame elapses. The second participant can be engaged by monitoring to determine if the other individual has followed each command correctly.

6. Begin with one step commands. The commands should focus on goals the client is working on.

    Examples:

    A. "Simon says play a red icon" (e.g. color recognition, gross motor coordination, visual motor integration).
    B. "Simon says play the instrument in the lower right corner" (e.g. directionality, dynamic sitting or standing balance, reaching).
    C. "Simon says play the highest instrument you can reach" (e.g. active range of motion, dynamic sitting or standing balance, gross motor coordination).

7. Progress to multiple step commands. Once again, the commands should focus on goals the client is working on.

    Examples:

    A. "Simon says pick up the tambourine with your right hand and wave it overhead" (e.g. fine muscle coordination, active range of motion, reaching, dynamic sitting or standing balance, sequencing, memory).
    B. "Simon says turn the rhythm track on with your left hand then use both hands to play two different red icons at the same time (e.g. reaching, crossing midline, bilateral integration, gross motor coordination, color recognition, following directions).
    C. "Simon says re-arrange the instrument panel so you have three rows of four instruments each; move any extra instruments behind you" (e.g. problem solving, organization and planning, decision making, gross motor coordination, dynamic sitting or standing balance, motor control).
    D. "Simon says play a rhythmic pattern using five different instruments and name the instrument as you play it" (e.g. memory, verbal response, attention, decision making).

8. If it is noted that the participant is having difficulty with specific tasks/commands, assess if it is a functional skill deficit or if the individual needs to be reoriented to the Jam Studio VR task and how to perform it. If the participant is having difficulty remembering how to navigate the Jam Studio VR environment, it may be helpful to stop the activity and return to the Jam Studio Virtual Reality Intro to increase familiarity with the equipment and specific tasks.

9. To prevent boredom and replication of similar commands, new songs can be introduced. This will "reset" the instrument panel with different choices and arrangements.

10. Use the Virtual Reality Simon Says Session Form to check off tasks addressed in the session and level of assistance required.

Virtual Reality Simon Says Adaptations

- The VR environment may need to be adapted prior to the start of the activity based on participant functional abilities. For example, the number of instrument icons can be reduced by moving some to the rear, side, or ceiling of the VR environment so they are out of view. If the individual is sitting or has restricted range of motion, icons can be lowered and angled towards them. If the individual is working on recognizing certain icons, the panel can be set up to only display those icons.

- If the participant struggles with a specific command, it can be repeated. For multiple step commands that are difficult, consider breaking the sequence down to shorter steps until it can be mastered.

- If the session involves two participants, consider having the second participant read the commands to keep them engaged while the other individual is in the VR environment. More advanced individuals may even be able to make up their own commands.

Virtual Reality Simon Says Session Form

Participant Name: _____ **Date:** _____

Use this form to identify specific tasks to be included in Simon Says commands during the session.

Part 1 of this form is pre-populated and includes all the tasks/skills from the Virtual Reality Beamz Intro session. Be sure to review which of these tasks were included in the Jam Studio Virtual Reality Intro session for this participant as all tasks may not be relevant.

Part 2 of this form includes blank spaces for the therapist to create a custom Task List by listing tasks and skills that specifically align with the participant's treatment goals. Write in additional tasks in the blank spaces provided.

Part 3 of this form is a sheet for preparing and writing commands in advance of the session. This is optional, but most relevant for sessions where participants will be working on multi-step, multi-skill commands. It can also be used if a session involves two participants and one is assigned to read commands while the other performs them.

Instructions for Completing Part 1 & 2

To fill in the session form and track participant progress, use each column as outlined below.

- **Task**: Prior to the session, identify tasks that are appropriate to participant goals. Not all tasks will be appropriate for all participants. To easily find the tasks you will be using during the session, use a highlighter to color code those relevant for the individual, or place a star or other marking to the left of the identified task. Fill in personalized tasks in Part 2.
- **Command Given:** Check this box if the participant is instructed to complete this task during the session.
- **Number of Times:** Start a tally to record the number of times this command is given in the session.
- **Demonstrates Task**: Check the box in this column if the individual successfully completes the designated task.
- **Number of Times**: Start a tally to record the number of times the individual successfully completes the designated task.
- **Level of Assistance**: Note the level of assistance the individual required to demonstrate the task. A key is provided below.

CODE	LEVEL OF ASSISTANCE	CRITERIA
I	Independent	Able to perform task safely without any therapist assistance
Mod-I	Modified Independent	Able to safely perform task with use of an assistive device or modified technique
CGA	Contact Guard Assist	Able to safely perform task with therapist providing hands-on contact, but no assistance
Min-A	Minimum Assistance	Able to perform task safely with therapist providing < 25% of effort
Mod-A	Moderate Assistance	Able to perform task with therapist providing 25 – 50% of the effort
Max-A	Maximum Assistance	Able to perform task with therapist providing 50 – 75% of the effort
D	Dependent	Able to perform task with therapist providing > 75% of the effort
VC	Verbal Cues	Assistance provided by therapist was in form of verbal prompts, reminders and/or guidance
PP	Physical Prompt	Assistance provided by therapist was in form of physical guidance and/or hand over hand assistance

Virtual Reality Simon Says Session Form

Part 1: Review of Virtual Reality Beamz Intro Skills

Task	Command Given	Number of Times	Demonstrates Task	Number of Times	Level of Assistance
Pick up hand controllers	☐		☐		
Press trigger on controller	☐		☐		
Put on VR headset	☐		☐		
Stand in virtual environment with headset and hand controllers	☐		☐		
Sit in virtual environment with headset and hand controllers	☐		☐		
Play single instrument icon	☐		☐		
Create rhythm pattern on single instrument icon (strike it multiple times)	☐		☐		
Play multiple instrument icons in sequence with one hand	☐		☐		
Play multiple instrument icons in sequence using both hands	☐		☐		
Play two instrument icons simultaneously using both hands	☐		☐		
Start and stop rhythm track by activating the rhythm button	☐		☐		
Adjust volume by sliding control lever	☐		☐		
Turn in virtual reality environment to look to the front, right, left and rear	☐		☐		
Use trigger to grab and move single instrument icon	☐		☐		
Rearrange instrument icons by picking them up one at a time and moving them to different locations	☐		☐		
Stack instrument icons on top of each other	☐		☐		
Play Stacked instrument icons	☐		☐		
Go into Global Settings and change background	☐		☐		
Change song by scrolling through list	☐		☐		

Virtual Reality Simon Says Session Form

Part 2: Custom Task List Related to Treatment Goals
Write in specific tasks related to treatment goals that the participant will be working on during the session.

Task	Command Given	Number of Times	Demonstrates Task	Number of Times	Level of Assistance
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		
	☐		☐		

Virtual Reality Simon Says Session Form

Part 3: Simon Says Command List
Write in specific commands you want to use during the session. This is particularly helpful when using multi-step instructions. This sheet can also be used for sessions with two participants. Have one individual read the commands while the others follow them.

Commands

Sound Sequencing

Possible Goals:

Cognitive	Physical	Social/Emotional
Attention	Dynamic Sitting or Standing	Balance Frustration Tolerance
Concentration	Gross Muscle Coordination	
Short Term Memory	Visual Motor Integration	
Problem Solving	Active Range of Motion	
Sequencing	Bilateral Integration	
Object Recognition	Crossing Midline	

Staff Requirement: One therapist

Group Size: Individual Session

Setting: Quiet space with limited distractions. Virtual Reality (VR) environment set up with room to move around comfortably. Chair will be necessary if activity is being performed in a seated position. A chair without arms is recommended for greater range of motion.

Duration: 10-20 minutes

Music Suggestions:
> Songs with different instruments: Blue Notes, Jamboree, Magic Carpet, Nouveau Maestro
> Songs with repeated instrument icons: Nouveau Maestro (piano), Rock Anthem (drums/guitar), Wild Rider (guitar)

Procedure:
1. Set up the Virtual Reality equipment in a private area with limited distractions. If it is anticipated you will be using longer sequences, it is suggested that sequences be developed and written down in advance of the session. Alternately, you can also write the sequence down as you are creating it in the treatment session. Either way, this will allow you to be able to focus on the response of the participant, instead of on remembering the correct sequence of sounds. Use the attached session forms to record client response and take general notes during the session.

2. Set up participant in either a seated or standing position, then assist in arranging the VR headset and hand-held controllers so they are comfortable for the individual. Direct the individual in selecting the song that will be used to bring up the instrument panel. Since the rhythm track will not typically be used in this activity, style of music is less important than variety of instrument icons.

3. Begin by having the participant play each of the instrument icons visible to them in the virtual environment. As each instrument is played, the name of the instrument should be given. This can be done by the participant or by the therapist. It may be necessary to

spend additional time on this step if the participant has limited familiarity with the instrument names. Once the participant has demonstrated knowledge of the instrument names, and recognition of the shape/form displayed on each icon, work on sound sequencing can begin.

4. Explain the sequencing activity to the participant. "I will be naming different instrument sequences or icon sequences, and I would like you to play back to me the sounds corresponding to the instruments or icons I have specified in the same order. The sequences will start off short and will get longer as we progress through the activity. If you feel as though you are uncomfortable with the pace or number sounds/ icons in the sequence, please let me know."

5. Start by giving a one-instrument sequence (e.g. "guitar"), and ask the participant to play the corresponding sound for that instrument. Next, give a two-instrument sequence (e.g. "piano, drum") having the participant play that sound sequence. If these are successful, progress to longer sound sequences. If unsuccessful, repeat the one or two step sequences until the participant has mastered that level. It may be necessary to review the names of the instruments again, or to reduce the number of instruments displayed to simplify the task.

6. When the participant reaches a level where replication of the sequence is difficult and is resulting in errors, give the same sequence a second time, telling the individual "That wasn't quite right. Let's try that again." Provide a third attempt if necessary. If the individual is still incorrectly playing the sequence after the third try, state "That's a tricky one. We'll come back to that one later." Proceed to a shorter sequence to re-establish successful responses and then work back up to the more challenging length. This may also be a good time to assess for participant fatigue.

7. To prevent boredom and replication of similar sequences, new songs can be introduced. This will "reset" the instrument panel with different choices. Be sure to return to step 3 when changing songs to ensure the participant is familiar with all the instrument icons before progressing to sequences. "OK. Since we changed songs, you now have some different instruments in front of you and some of the instruments you were playing before have now moved to different positions. Let's take a minute to re-orient you to the new instruments and layout before starting the sequences."

8. Some songs have repeated icons (more than one piano, more than one guitar). This may be easier for some participants since there is less variety. However, some individuals may also find this frustrating or confusing (e.g. "Which one should I play?")

Sound Sequencing Adaptations

- If a participant is having difficulty remembering the sequences, tell the individual you will repeat each sequence twice, before they should start playing the corresponding sounds.

- If the individual has an awareness of musical instrument families, sequences can also be given in more general terms (e.g. "percussion, woodwind, brass, strings").

- If the individual is working primarily on physical goals where intention and motor movements may not always align, incorporate a method for the participant to reattempt their desired movement/sound. This can be done by allowing the participant to identify their own errors "Oops. That's not the one I wanted. Let me try again." The therapist can also stop the sequence when incorrect and say, "Let's try that one again."

- For an activity variation, ask participant to create their own sequence of a certain number of sounds. Write down the sequence as they play. Once they finish playing the sequence, ask the individual to verbalize/name the sound sequence they just played (e.g. "My sound sequence was tambourine, cello, drum, guitar").

- Some more advanced participants may be able to add the background track and listen to instructions along with the music before playing the specified sound sequence as an overlay to the rhythm track.

Sound Sequencing
Session Form

Use this form to record data and notes regarding participant performance during the session.

Sequence Length: Indicate how many instrument icons were included in the sequence.

Instruments on Panel: Notate how many instruments are displayed on the panel since more instruments equate to a more challenging task. Many participants will need to start with fewer instrument choices.

Completed Successfully: Circle "Yes" or "No" to indicate if the participant completed the sequence successfully.

Number of Attempts: Record the number of attempts that were needed to successfully complete the sequence.

Comments: Add additional notes regarding the participant's performance.

Participant Name: _____ **Date:** _____

Sequence Length	Instruments on Panel	Completed Successfully		Number of Attempts	Comments
		Yes	No		
		Yes	No		
		Yes	No		
		Yes	No		
		Yes	No		
		Yes	No		
		Yes	No		
		Yes	No		
		Yes	No		
		Yes	No		

Fill in sequences you want to use during the session. Having several sequences prepared in advance will allow you to use and reuse these.

It is recommended that you create longer sequences than you think you may need in the event the participant is ready for an increased challenge. These longer sequences can always be shortened during the session by crossing one or more steps out or circling the portion that was used.

*Be sure to review the instrument panel for the song(s) you plan to use so you can reference appropriate instruments or icons that will be available to the participant.

Participant Name: _____ **Date:** _____

Song Title	
Sequence (s)	Length

Song Title	
Sequence (s)	Length

Play and Name

Possible Goals:

Cognitive	Physical	Social/Emotional
Attention	Dynamic Sitting or Standing Balance	Expression of Spoken Language
Concentration	Gross Muscle Coordination	Verbal Articulation
Memory	Active Range of Motion	Self-Expression
Object Recognition	Visual Motor Integration	

Staff Requirement: One therapist

Group Size: Individual Session

Setting: Private area with limited distractions. Virtual Reality (VR) environment set up with room to move around comfortably. Chair will be necessary if activity is to be performed in a seated position. A chair without arms is recommended for greater range of motion.

Duration: 10-20 minutes

Music Suggestions: Blue Notes, Jamboree, Nouveau Maestro, Rock Anthem

Procedure:

1. Set up the Virtual Reality equipment in a private area with limited distractions. Ensure the participant has adequate space to move comfortably. Pre-set the VR environment to the song that will be used to start the session.

2. Set up participant in either a seated or standing position, then assist in arranging the VR headset and hand-held controllers so they are comfortable for the individual.

3. Begin by doing a review of the icons displayed on the instrument panel. This can be done a couple of different ways.

   a. Ask the participant to start in the top left corner and go across naming Each icon in order, progressing to the 2nd row when the top row is complete. After they name the instrument, the individual can play the corresponding sound by touching the icon.

   b. For individuals with less familiarity with the icons and instrument names, the therapist can name each icon in order and ask the participant to verbally repeat the name and then play the corresponding sound by touching the icon.

4. Next, instruct the participant that you will now name instrument icons in a random order. When an instrument icon is named, the individual should find that icon and play it. After playing the sound, they will verbally state the name of the icon.

5. Progress to letting the participant start the exchange. Instruct the individual to play any icon of their choosing, then state the name after they play it. You will then repeat the name of the icon. If the participant incorrectly names the instrument icon or has difficulty with pronunciation, ask them to try again.

6. Once this is mastered, instruct the participant that they should play a musical pattern by playing a series of instrument icons and stating the name of that icon immediately after playing it. You may want to specify length of the sequence to begin with (e.g. three note series, five note series) until the individual has mastered this concept.

7. Ask the individual to now play and name simultaneously. They should state the name of the instrument icon as they touch it.

8. Progress to adding a rhythm background for the individual to play over. They should continue to name each instrument as they play it.

9. Switch songs to introduce new instrument icon names to practice (this can be done at any of the steps above).

Play and Name Adaptations

- Instead of progressing directly to the VR environment, the review of icon names can initially be done by sitting in front of the computer monitor and viewing the icons there first. This is a recommended step for individuals who require more intense work on speech skills as they may benefit from being able to see the therapist initially.

- Naming can be adapted from individual instrument names to focus on:

    ◦ Colors: Name the color of the icon after playing it, or while playing it.

    ◦ Instrument Families: Instead of naming individual instruments, name the musical instrument family it belongs to while playing it (e.g. woodwind, brass, strings, percussion).

    ◦ Directionality: Name the location of the icon after playing it. The therapist can specify which directional terms should be used and may need to set up the instrument panel to accommodate this (e.g. top, middle, bottom; right, center, left).

    ◦ Counting: Start counting at one when the first icon is played. Say "two" when the second icon is played, etc.

    ◦ The Alphabet: After playing the first icon, the participant will say "A". The second icon played will be "B", the third "C", etc.

- More advanced participants can progress to operating other controls within the VR environment and naming/articulating their action as they complete it (e.g. "Rhythm on", "Volume up", "Song changed to _____").

- If an individual is working on increasing the pace of their speech, motor movements and/or cognitive processing, establish game rules to see how many instruments can be played and named in a set period of time and track progress over sessions. Emphasize that only accurate responses will be counted.

Play and Name
Session Form

Participant Name: _____ **Date:**_____

<div style="border:1px solid black; padding:8px;">

Names/Terms/Words focused on in this session.
Suggestion: Circle any Names/Terms/Words that should be revisited in future sessions.

</div>

Song(s) Used	Accuracy of Playing/Naming (Percent Correct)	Level of Assistance Required*
	Playing:	Playing:
	Naming:	Naming:

General Session Notes:

CODE	LEVEL OF ASSISTANCE	CRITERIA
I	Independent	Able to perform task safely without any therapist assistance
Mod-I	Modified Independent	Able to safely perform task with use of an assistive device or modified technique
CGA	Contact Guard Assist	Able to safely perform task with therapist providing hands-on contact, but no assistance
Min-A	Minimum Assistance	Able to perform task safely with therapist providing < 25% of effort
Mod-A	Moderate Assistance	Able to perform task with therapist providing 25 – 50% of the effort
Max-A	Maximum Assistance	Able to perform task with therapist providing 50 – 75% of the effort
D	Dependent	Able to perform task with therapist providing > 75% of the effort
VC	Verbal Cues	Assistance provided by therapist was in form of verbal prompts, reminders and/or guidance
PP	Physical Prompt	Assistance provided by therapist was in form of physical guidance and/or hand over hand assistance

Perpetual Play

Possible Goals:

Cognitive	Physical	Social/Emotional
Attention	Dynamic Sitting or Standing Balance	Self-Exploration
Concentration	Bilateral Integration	Social Conduct
	Cardiovascular Endurance	
	Gross Muscle Coordination	
	Motor Control	
	Active Range of Motion	
	Speed	
	Visual Motor Integration	

Staff Requirement: One therapist

Group Size: Individual Session

Setting: Private area with limited distractions. Virtual Reality (VR) environment set up with room to move around comfortably. A chair will be necessary if activity is to be performed from a seated position. Chairs without arms are recommended to limit movement restrictions.

Duration: Will depend on participant (see procedure below).

Music Suggestions:

>Faster Tempo Songs: Magic Carpet, Rock Anthem, Wild Rider
>
>Medium Tempo Songs: Blue Notes, Funk or Famine, Jamboree, Nouveau Maestro
>
>Slower Tempo Songs: Healing Waters

Additional Supplies Needed: Timer/stopwatch, session forms relevant to participant goals (See recommendations below in Suggested Clinical Measures and Session Forms).

Procedure:

1. Set up the Virtual Reality (VR) equipment in a private area with limited distractions. Ensure the participant has adequate space to move comfortably. Set up participant in either a seated or standing position, then assist in arranging the VR headset and the hand-held controllers so they are comfortable for the individual.

2. Once in the virtual environment, instruct the participant to choose a song of their liking. As an alternative, the therapist can select a specific song for the individual. Faster tempo songs are recommended for greater challenges to speed, balance, and acceleration of heart rate. Medium and slower tempo songs are recommended for individuals working to improve muscle coordination, motor control and/or visual motor integration.

3. Explain to participant that their goal is to play continuously without a break for as long as they can. The suggested duration for the first session is five minutes, but this may vary depending on participant and their baseline abilities (Note: See Baseline Assessment below).

4. Encourage the participant to play along with the accompanying music. The individual will do this by selecting various instruments on the panel and extending their arms to touch the instruments of their choice. The duration of participation (perpetual play) will be measured by timing each interval as soon as the participant begins to move their arms. If participant pauses at any time, ask "Can you continue playing?" or "Do you feel you need to stop?" This will cue the individual to continue/reengage in playing or identify whether they are fatigued or disinterested.

5. When the individual indicates they are choosing to stop, record total length of play. If the client chooses to stop before meeting the targeted goal for time limit, the total time of participation should be recorded as well as the reason for discontinuing play. Explain to the individual that the goal of the activity is to increase play time over a number of sessions, and that they can work towards building up the time in which they play in future sessions.

Baseline Assessment

- The initial session can be used for a baseline assessment. Rather than setting an established time/duration goal, ask the participant to play as long as they can and record baseline duration. The goal can then be set to increase this time in subsequent sessions.

- Depending on specific participant goals, other baseline clinical measures can also be obtained including pre/post activity heart rate, number of cues needed to re-engage, assistive devices needed/used, level of assistance required, use of right vs. left arm, etc. (see Suggested Clinical Measures below for more details).

Perpetual Play Adaptations

- Allow participant to take breaks as needed. Set a specific duration of time as the goal and record the number of breaks and duration of each break the individual needs during that time frame (goal would then be to reduce the frequency and duration of breaks).

- Involve the participant in keeping a record of the length of their perpetual play sessions and music selected.

- To increase challenges to cardiovascular endurance, dynamic balance (sitting or standing), gross muscle coordination, bilateral integration, and/or active range of motion have the individual march/dance with their feet while simultaneously playing instruments with their hands.

- Individuals at more advanced levels may want to change songs multiple times when playing for a longer period of time.

Suggested Clinical Measures Based on Participant Goals

For all goals, it is recommended that therapist record duration of Perpetual Play (minutes/seconds).

In addition to this outcome measure, the following clinical measures can be considered for the goals noted below.

Attention & Concentration: Number of cues needed to re-engage or stay on task.

Dynamic Balance (Sitting or Standing): Level of assistance needed to maintain balance, assistive devices used to maintain or support balance.

Bilateral Integration: Percentage of time participant utilizes both upper extremities, number of cues required for use of impacted limb (if applicable).

Cardiovascular Endurance: Number of cues to re-engage, heart rate pre- and post- session, respiration rate pre-and post- session, number of breaks required and duration of each break.

Gross Muscle Coordination/Motor Control/Visual Motor Integration: Accuracy of contact with instrument panel (number of missed contacts or percentage of accurate contacts).

Active Range of Motion: Number of contacts with instruments in high/low rows requiring greater range of motion (depending on participant positioning).

Speed: Number of instrument hits per specified time period (suggest tally for random 15 or 30 second intervals).

Self-Exploration: Total number of different instruments on the panel utilized during the session. Level of variety and experimentation with different rhythmic patterns during play.

Social Conduct: Number of episodes of unsafe behavior and/or improper use of equipment, number of cues necessary to re-direct behavior to designated task.

**Perpetual Play
Session Form**

Use this form to record session progress over time. The first four columns have been coded for key data for all Perpetual Play participants. Four unlabeled columns follow. Use the Suggested Clinical Measures Based on Participant Goals page to identify additional measures applicable for this participant and enter the measure as the heading of one of the unlabeled columns. Measures not included on this list can also be used. General session notes can be recorded in the far right column.

Participant Name: _____

Date	Goal Time	Actual Time	Breaks					Notes
			Frequency: Duration:					
			Frequency: Duration:					
			Frequency: Duration:					
			Frequency: Duration:					
			Frequency: Duration:					

Conductor Callistenics

Possible Goals:

Cognitive	Physical	Social/Emotional
Attention	Dynamic Sitting or Standing Balance	Self-Exploration
Concentration	Gross Muscle Coordination	Listening Skills
Directionality	Cardiovascular Endurance	Social Conduct
Following Directions	Visual Motor Integration	
Problem Solving	Active Range of Motion	
	Bilateral Integration	
	Crossing Midline	
	Grasping	
	Fine Muscle Coordination	
	Motor Control	
	Speed	

Staff Requirement: One therapist

Group Size: Individual Session

Setting: Quiet space with limited distractions. Virtual Reality (VR) environment set up with room to move around comfortably. Chair will be necessary if activity is being performed in a seated position. A chair without arms is recommended for greater range of motion.

Duration: 10-20 minutes with rest periods as needed per each individual.

Music Suggestions:

> Faster Tempo Songs: Magic Carpet, Rock Anthem, Wild Rider
>
> Medium Tempo Songs: Blue Notes, Funk or Famine, Jamboree, Nouveau Maestro
>
> Slower Tempo Songs: Healing Waters

Procedure:

1. Before beginning this activity, check with each individual's physician or physical therapist regarding any physical restrictions and/or safety precautions.

2. Set up the Virtual Reality (VR) equipment in a private area with limited distractions. Allow plenty of space around the individual, as they will be moving their arms and legs throughout the session. Remove any safety hazards and ensure VR cords will not pose tripping hazard.

3. Review the list of suggested Conductor Calisthenics movements and highlight or place a star or other notation next to those that are appropriate for the participant.

4. Determine if the VR environment needs to be adapted at all for the participant. This might include minimizing the number of instruments on the panel and/or rearranging them so they will be within reach for the individual given functional capabilities. Instruments can be moved to the rear of the VR environment so they are not visible and/or lowered if the individual will be participating in a seated position or unable to reach all items as typically arranged.

5. For individuals who have difficulty with verbal instructions only, it is recommended that you review and model the movements for the participant before they enter the VR environment. Having the computer monitor off to the side to remind the participant what they will be seeing will assist with this.

6. Begin the session with the rhythm track turned off so the individual can first learn the movements without additional distraction. This will also enable them to better hear directions from you.

7. Give instructions for Conductor Calisthenics movements that you identified as aligning with the participant's goals. Each movement can be repeated multiple times.

8. Throughout the session, monitor for fatigue and provide rest periods as needed.

9. Once the individual has gained familiarity with the movements, add the rhythm track and repeat the movements. Consider if a slower tempo, medium tempo or faster tempo music best aligns with the participants goals and/or functional capabilities.

Conductor Calisthenics Adaptations

- If the participant is having difficulty understanding the movements in the VR environment, have them remove the headset and practice the movements outside of the VR environment. It will be helpful to also point to the computer screen and show them how this movement will be different in the VR environment.

- For individuals who are able to learn the names of the movements, work up to a point where you call out various movements for them to do. They will need to listen for instructions to switch movements and remember how to do the movement that is called out.

- Encourage participants to create new moves and name them for future sessions.

Select movements from the list below or create your own.

Encourage participants to make up their own moves!

Movement	Description/Instructions
Play the Panel (Horizontal)	Reach up and play the instrument in the upper left corner of the panel. Work your way across the top row playing each instrument one time progressing left to right. When you get to the end of the row, move to the instrument below and work your way across the row from right to left playing one instrument at a time. Continue this progression until you have played all instruments on the board. For additional challenge, reverse the order, starting on the bottom row and working your way back up to the top moving horizontally (side to side). This can be done with one hand, or alternating hands.
Play the Panel (Vertical)	Reach up and play the instrument in the upper left corner of the panel. Work your way down the left column playing each instrument one time progressing top to bottom. When you get to the bottom, move over to the next column and play the instrument on the bottom row and begin playing one instrument at a time working your way upwards. Continue this progression until you have played all instrument on the board. For additional challenge, reverse the order, starting on the far right and working your way back moving vertically (top to bottom). This can be done with one hand, or by alternating hands.
Band Bopper	Place both hands in front of you and start playing instruments one at a time with a "bopping" or punching motion alternating right and left. Start slow and work to speed up your punches. Start in the center of the panel and gradually work your way out, up, and down for more challenge.
High V, Low V	Extend both arms upwards in the shape of a V and play the instrument as high and to the right and left as possible simultaneously. Once that is completed, drop both arms down and play the instruments as low and to the right and left as possible simultaneously. Alternate back and forth between "High V" and "Low V".
Vertical Scissors	Play an instrument to your right on the top row with your right hand and an instrument to your left on the bottom row with your left hand simultaneously. Switch your arms in a scissor motion to then play an instrument to your left on the top row with your left hand and an instrument to your right on the bottom row with your right hand. Continue back and forth.
Speedy Sounds	Select an instrument on the panel and begin playing a rhythm pattern as fast as you can on the same instrument. Start with one hand, then switch to the other. Next, play two instruments simultaneously by moving your right and left hand together to play a rhythm pattern as fast as you can.

Stack'Em Up	Using your right hand, start stacking instruments on top of each other until all the instruments are in one pile. Switch to your left hand and unstack them all, placing them one by one back in the instrument panel. Repeat the sequence stacking with your left hand and unstacking with your right. Next, stack and unstack by alternating hands (e.g. stack first instrument with right hand, second instrument with left hand, etc.).
Figure Eights and Waves	Pick up and instrument icon in your right hand. Holding on to it, make figure eights or wave designs in front of you. Put the instrument back in the panel and pick up a different instrument with your left hand. Holding the instrument, make figure eights or wave designs in front of you (Variations: Spell your name or other words in the air while holding the instrument; Draw a picture in the air while holding the instrument).
Ceiling Symphony	Pick up an instrument and raise it up over your head like you are trying to touch the ceiling (or sky). Return the instrument to the panel and pick up another instrument and repeat this movement. Continue with one arm or alternate between right and left.
Body Beats	Pick up an instrument from the instrument panel. Bring it over and tap it to different parts of your body. Suggestions: Knee, Hip, Thigh, Calf, Shin, Toes, Shoulders, Head, Ear, Heart, Back. Put the instrument back and pick up another with your other hand doing the same actions. Progress to picking up two instruments simultaneously (one with right, one with left) and tapping them on your body.
Swivel Serenade	Position feet facing forward and keep them stationary. Start with your right hand and reach across your body to play and instrument on the left side of the panel. Now take your left hand and reach across your body to play an instrument on the right side of the panel. You should be twisting (swiveling) at the waist while you do this. Continue to alternate back and forth aiming to pick up the pace for a challenge.
Arm Circle Accompaniment	Pick up an instrument from the instrument panel. With your arm out in front of you, complete arm circles (small then larger). Gradually move your arm to your side so it is parallel to the floor. Continue your arm circles here (small then larger). Return the instrument to the panel and pick up an instrument with your other arm. Repeat the sequence. Finally, pick up an instrument in each hand and complete arm circles to the front and side moving both arms simultaneously (small then larger).
Dance and Play	Start by stepping your feet back and forth like you are marching or dancing. Keep your feet moving while you start playing musical patterns on the instrument panel with your hands. Increase the challenge by moving at a faster pace or raising knees higher.
Movement Maestro	Make music while you move anyway you like. Show your musical and movement creativity.

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