

FirstSteps Help: General

Written by Diane Brauner

Goal Of The FirstSteps App

The FirstSteps app is designed to help children with visual impairments develop essential technology skills so they can start kindergarten on an equal footing with their sighted peers. Through structured interactive lessons and games, children systematically learn to use an iPad with VoiceOver gestures and digital navigation.

- Designed specifically for: Children ages six and under
- Age-appropriate educational content
- Focus areas:
 - Mastering VoiceOver gestures
 - Developing spatial awareness and mental mapping
 - Understanding digital concepts for low vision & blind users

What Is VoiceOver?

VoiceOver is Apple's built-in screen reader, which enables blind and low-vision users to navigate an iPad by reading aloud on-screen content before selection. It modifies standard gestures so users can hear descriptions before interacting with items.

Basic VoiceOver Gestures

1-Finger Drag – Explore the screen and hear item descriptions.

Split Tap – Drag with one finger to find an item, then tap with a second finger to select.

1-Finger Swipe Left/Right – Move to the previous/next item.

1-Finger Double Tap – Select an item.

2-Finger Tap – Pause/resume reading.

2-Finger Swipe Up – Start reading from the top.

2-finger Swipe Down – Start reading from current position

2-Finger Scrub – Exit a menu or “go back”

3-Finger Swipe Left/Right – Scroll pages left/right,

3-Finger Swipe Up/Down – Scroll pages up/down.

Rotor Gesture – **Two-finger twist** to switch rotor settings; **one-finger swipe up/down** to adjust settings.

Technique Tips

- Use a gentle touch and small movements.
- Keep fingers relaxed & slightly apart when using multiple fingers.
- Hover palm above the iPad for better control.

- Encourage good posture
- The iPad should be on a flat surface.

Who Benefits From VoiceOver?

Children who are blind or have significant vision loss rely on screen readers for digital access. Additionally, children with low vision can benefit from developing strong listening and screen reader skills early on. While some low-vision children may see print well enough to develop reading skills comparable to their peers in early school years, they may struggle to keep up with the extensive reading demands of high school, college, and careers. For children with low vision, prolonged reading can lead to eye fatigue and headaches, making alternative reading methods mandatory.

Both blind and low-vision children can greatly benefit from learning effective listening skills and mastering fundamental VoiceOver gestures, which the FirstSteps app teaches.

Indicators That The Child Will Benefit From A Screen Reader

- Emerging or potential braille or dual media reader
- Need text magnification that requires scrolling
- Must hold the iPad close or exhibits poor posture
- Has scotomas (holes) in his/her vision
- Has a field loss
- Demonstrates eye fatigue
- Has double vision
- Has nystagmus (rapidly moving eyes that can cause double vision and/or eye fatigue)
- Has fluctuating vision
- Reading causes headaches or migraines
- Has a progressive eye condition

Key Tech Concepts For Low Vision And Blind Children

Besides learning how to physically create gestures and what each gesture does, children must also understand key digital concepts. Then, children can independently apply these skills to new apps that are used in general education classrooms and beyond. These unique tech concepts are specifically taught in the FirstSteps lessons and are applied in the games. To support these key tech concepts, caregivers should reinforce these three things with every activity:

1. Explore Every Screen To Build Spatial Awareness

A touchscreen device offers a significant advantage over a traditional computer. The iPad's touchscreen enables visually impaired children to develop spatial awareness by helping them understand where their fingers are physically located on the screen. Children can also associate their finger positions with digital concepts, enhancing their navigation and interaction within digital environments. The ability to explore the screen by dragging a finger across the physical space while listening to VoiceOver announce the item under their fingers is highly motivating and an effective way to learn the screen's spatial layout.

- Use **spatial terms** (left, right, middle, top, bottom) to describe object locations.
- Encourage children to **build a mental map** of the screen layout.
- Teach children to anticipate **predictable button placements** (e.g., "Back" button is usually in the top-left corner).

The FirstSteps games allow players to explore the screen before playing. This helps reinforce spatial concepts & mental mapping.

2. Listen To VoiceOver Announcements

Children low vision or blindness rely heavily on listening skills both in the classroom and beyond. The FirstSteps lessons are designed to strengthen these skills by providing age-appropriate verbal instructions and adaptive hints based on the child's interactions with the lesson.

Mirroring screen reader announcements, the lessons intentionally offer a brief overview of the screen's contents, helping children begin forming a mental map before touching the screen. For example, a lesson might initially announce that there are three rows of animals. With this information, the child can start mentally mapping out three horizontal rows, prepare to listen to the earcon that indicates when moving to the next row, and plan how to navigate across these rows.

Encourage children to **actively listen** to VoiceOver descriptions.

- Ask them to describe their mental map of the screen.
- Use tactile models to reinforce screen layouts.

3. Using Earcons (Sound-Based Hints)

Icons are visual symbols that represent or convey information without words, such as a gear symbol for Settings or an envelope with an arrow for the Send button.

Earcons are the auditory equivalent of icons—brief, distinctive sounds that indicate specific events or provide information. Common examples include the “ping” of an incoming email or the “whoosh” of a sent message. VoiceOver uses additional earcons to help blind or low vision users navigate the screen, such as a “click” sound when focus moves to the next item.

When introducing a new gesture, the FirstSteps Help document explains the corresponding sound it produces. All activities and games incorporate earcons, which are covered in detail in Chapter 7.

As the child plays each new game, encourage them to listen for these “secret sounds” and describe what is happening on the screen. Ask them which earcons they heard while playing and what they represent.

Prerequisites For The FirstSteps App

Each child should have an interest in touching and interacting with the screen and should have the necessary fine motor skills to use one finger to drag and tap.

For children who are yet ready to physically create the VoiceOver gestures, try alternative self-voicing apps that introduce simple touch interactions that allow any number of fingers to touch anywhere on the screen. Recommended apps include:

- **Bubble popping games:** Fun Bubble, Baby Balloons, and Bubbles.
- **Sound-based apps:** Baby Musical Hands, and Cause and Effect Sensory Sound Box.
- **Simple tap gesture apps:** Infant Zoo and Peek-a-Boo Barn.

The Gesture Forest Game

Gesture Forest is the only FirstSteps game that has game play driven by the child. *Gesture Forest* is an interactive sandbox-style game where children freely explore, or practice learned gestures without following specific instructions. The child can touch in five different locations (four corners and middle of the screen) to activate different sounds. *Gesture Forest* reinforces these gestures:

- **One-finger drag** – Announces animal names.
- **One-finger tap** – Plays sound effects.
- **One-finger double tap** – Plays additional sounds.
- **One-finger swipe right or left** – Changes day and night.
- **One-finger swipe up or down** – Changes the weather.
- **Split tap** – Provides animal fun facts.
- **One-finger double tap and hold** – Plays a fun song.

Children should revisit this game as they progress through new gestures.

Positioning And Modeling for Success

Proper Positioning of the iPad and child will maximize the child's success.

Positioning the iPad

- The FirstSteps app typically requires the iPad to be in Landscape Mode.
- Place the iPad flat on a table.
 - Placing the iPad in a stand or at an angle in the case can make the iPad unstable, making it harder to physically produce the Voiceover gesture correctly.
- Ensure proper posture: feet flat on the floor, elbows at 90 degrees and hands just above the tabletop.
 - If the child's feet do not touch the floor, place a sturdy box under his feet.
 - If the table is too high or too low, the child may lean on the table, making it challenging for the child to produce gestures correctly, especially the left or right swipe gesture.
- If the child is sitting in the adult's lap, the adult should hold the iPad flat.
 - Note: Many young children are not ready to sit still in a chair and may be more attentive when sitting in an adult's lap.
- Introduce tech rules (e.g., handle the iPad gently).

Modeling

A child with a visual impairment cannot learn by watching others drag, tap, or swipe. Instead, caregivers should physically model the gestures as needed.

When demonstrating a gesture on the iPad, use **hand-under-hand** guidance (placing the adult's hand under the child's hand) to help the child understand the movement. Some children may benefit from hand-over-hand modeling (placing the adult's hand over the child's hand), but this should only be used if the child is willing to touch the screen. Never force the child!

Always pair the action with a clear, simple verbal description. As the child's skills improve, gradually reduce physical prompts and verbal prompts. The ultimate goal is to support the child's learning process and help them become a confident, independent user.

Screen Curtain

The goal of the FirstSteps project is to teach VoiceOver gestures and concepts. Children with low vision may try to use their residual vision instead of listening to the announcements. The games have the Curtain option, which makes the screen dark (removes the visual information) so that a low vision child is not distracted by the visuals and can focus on the auditory information. If the child is leaning over the iPad trying to see the screen, not paying attention to the auditory information, or you simply want to challenge the child's screen reader skills, select the Curtain option. Caregivers with vision can also use the Curtain to enhance their VoiceOver skills!

In the Lessons, the Curtain option is in the Pause menu, which is accessed using a **3-finger double tap**. In the Games, the Curtain option is located at the bottom, center of the screen.

FirstSteps App

Accessibility Option

When the app opens, an announcement explains how to use a **two-finger swipe left or right** to toggle the **Accessibility** feature on or off.

The FirstSteps app includes a unique "Accessibility" feature that mimics VoiceOver by announcing menu items and mirroring VoiceOver gestures for navigation and selection. However, this feature does **not** interfere with the interactive lessons and games that teach VoiceOver skills.

While using FirstSteps, Apple's **VoiceOver screen reader should be turned off**.

The app is designed to be used by sighted caregivers who do not yet know VoiceOver, along with visually impaired caregivers and visually impaired children who need accessibility features.

- Users with vision who do not know VoiceOver gestures can toggle Accessibility off.
- Users with vision who want to practice their screen reader skills can turn Accessibility on.
- Blind and low-vision users can turn Accessibility on for additional support.

This ensures that the app is accessible to both experienced and new VoiceOver users.

FirstSteps Home Screen

The **Home screen** of the FirstSteps app features a menu with the following options:

- **Chapters** – Displays a list of skills and their corresponding lessons.
- **Training Room** – Contains a list of all games.
 - The Training Room enables users to jump directly to playing a game; however, each game is linked to specific skills and lessons and should only be played after completing the associated lessons.
 - A Game will unlock after the associated lesson is completed.
- **Settings** – Lessons and Games should be played in order and are intended to be used in order. However, caregivers can unlock Lessons and Games if needed.
 - Unlock All Lessons
 - Unlock All Games
 - Land Acknowledgement
- **Quit** – Exit the app.

The app is designed for users to select a **Chapter**, choose a **Skill**, and then pick a **Lesson** within that skill. These Skills and Lessons are in progressive order and will unlock the next Lesson upon completion.

The chapters, skills, lessons, and games are designed to be completed in sequential order.

The next skill, lesson, or associated game remains **locked** until the user successfully completes the required lessons.

Chapters

Remember, children need to learn not only how to perform the physical gesture and understand its function, but also grasp essential technology concepts. Do not skip chapters! These chapters include both gestures and concept development.

There are seven chapters:

Chapter 1: Explore and Touch

Chapter 2: Drag and Split Tap

Chapter 3: Rows and Columns

Chapter 4: Swipe and Double Tap

Chapter 5: Reading Gestures

Chapter 6: Rotor Skills

Chapter 7: Practice Application

Overview

Once a **Chapter** is selected, the screen displays a list of **Skills** associated with that chapter. Each **Skill** represents a gesture or concept to be learned, with numbered **Lessons** listed below that teach that skill. The Lessons are bite-sized, fun, and interactive activities designed to reinforce learning. These **Skills** and **Lessons** follow a progressive order, with each new skill, lesson, or game remaining **locked** until the child successfully completes the prerequisite skills and lessons.

Note: Some Skills intentionally repeat previous Lessons, as these foundational lessons support the learning of new gestures or concepts. Providing opportunities for young children to repeat lessons is essential, as repetition helps **build muscle memory**, making it easier for them to learn and perform gestures automatically.

- Example: The 1-Finger Double Tap Skill has two Lessons: 1-Finger Tap and 1-Finger Double Tap.

To get started, select Chapter 1, select the Horizontal Dragging Skill, and finally open the numbered lesson, Horizontal Dragging (Sonified) to begin learning.

Lessons

Once a Skill is selected and a numbered Lesson is activated, three additional options are available: Back, Start Lesson, and Help Documentation.

- **Back** – Closes the selected Lesson.
- **Start Lesson** – Opens a **video tutorial** for that lesson and then starts the interactive lesson.
- **Help Documentation** – Opens a web page with detailed teaching strategies for caregivers, explaining the importance of the gesture/concept, **warm-up activities**, and offers additional instructional support. This will take you out of the FirstSteps app.
 - **Warm-up activities** – Designed to help children prepare for making the physical gesture correctly. Repeating the related activities before each lesson is highly recommended. Since mastering VoiceOver gestures requires repeated practice, these warm-up exercises play a crucial role in helping children develop muscle memory to perform gestures smoothly and confidently during gameplay.

Note: If needed, turn on VoiceOver to access the Google document.

Caregivers should review both the Help Document and play the interactive Lesson before introducing it to the child. If unfamiliar with VoiceOver, caregivers can also use these lessons to learn VoiceOver gestures and concepts themselves.

Pause Menu

When the child is in the interactive Lesson, the adult can make a **3-finger double tap** to bring up the Pause menu. The Pause Menu has these options:

- **Resume** – Goes back to the interactive Lesson.
- **Options** – Toggles Accessibility on or off.
- **Main Menu** – Exits the Lesson and goes back to the Main Menu on the FirstSteps Home screen.
- **Curtains** – Toggles the Screen Curtain on or off.

Conclusion

The FirstSteps app is an essential tool for helping children with vision impairments build foundational tech skills. By combining structured learning with engaging gameplay, it fosters independence, confidence, and digital literacy. Caregivers play a critical role in reinforcing these skills, ensuring children are equipped to navigate technology efficiently.

For easy reference, print the **Basic VoiceOver Gesture Commands**. Use the **iOS Skills Checklist** below to track your child's progress.

Basic VoiceOver Gesture Commands

Action	VoiceOver Gesture
Move focus to any item on the screen	Touch item with one finger
Move focus to next item	One-finger swipe right from anywhere on the screen
Move focus to previous item	One-finger swipe left from anywhere on the screen
Activate the item that has focus	One-finger double tap anywhere on the screen
Drag and Split tap	One-finger drag, stopping on desired item; tap with another finger to activate the item
Read All starting from the top of the page	Two-finger swipe up
Read All from current position	Two-finger swipe down
Pause or resume reading at current location	Two-finger single tap
Scroll down to the next page	Three-finger swipe up
Scroll up to the previous page	Three-finger swipe down
Scroll right to the next page	Three-finger swipe left
Scroll left to the previous page	Three-finger swipe right
“Scrub” gesture (exit a menu, cancel or go back to previous screen)	Two-finger scrub back and forth
Rotor gesture clockwise (moves to the next item in the popup rotor menu)	Two-finger twist clockwise
Rotor gesture counter-clockwise (moves to the previous item in the popup rotor menu)	Two-finger twist counter-clockwise
Performs the action or adjusts the value defined by the current rotor setting	One-finger swipe up or down
Drag-and-Drop	Double tap and hold, then drag
Turn VoiceOver Screen curtain on or off	In the ABCs of iOS app, three-finger triple tap will open the Pause menu. (Normally, Three-finger triple tap will turn the screen curtain on/off)

iOS Skills Checklist

Child's Name:

Date:

Age:

Add the date when skill was introduced. As the student makes progress, add the percentage and date. (Example: 50% of the time performed the gesture correctly.) Add the level of independence by writing "PP" (physical prompt), "VP" (verbal prompt), or "I" (independent). Add the date when mastered.

The numbers, such as 01, refer to the corresponding Chapter in the FirstSteps app. Example: One-finger tap gesture, 1/15/24, 50% VP, 1/30/24.

Skill	Date Introduced	Independence Level & Progress %	Date Mastered
01 Explore the Screen			
Appropriately handle the iPad (gentle touch)			
One-finger tap gesture			
Drag gesture			
Drag in a straight horizontal line with sonification			
Drag in a straight horizontal line without sonification			
Drag to the desired item			
Intentionally explore the screen			
Intentionally tap screen for cause-and-effect			
Understands spatial terms (top, middle, bottom, right, left, corner)			
Understands the spatial corners			
Demonstrates spatial understanding: intentionally tapping in appropriate area to activate app			
02 Drag and Split Tap			
Drag and split tap gesture			
Demonstrate grouping concept			
Demonstrate same and different concept			
Demonstrate matching concept			
Use age-appropriate speed to complete task			

Skill	Date Introduced	Independence Level & Progress %	Date Mastered
03 Rows and Columns			
Navigate to a row			
Understand the concept of a row and navigate the row			
Drag in a straight vertical line with sonification			
Drag in a straight vertical line without sonification			
Navigate to a column			
Understand the concept of a column and navigate the column			
04 Swipe and Double Tap			
One-finger swipe right gesture			
One-finger swipe left gesture			
One-finger double tap gesture			
05 Reading Gestures			
Two-finger tap gesture			
One-finger swipe up gesture			
One-finger swipe down gesture			
Two-finger swipe up gesture			
Two-finger swipe down gesture			
Three-finger swipe right gesture			
Three-finger swipe left gesture			
Three-finger swipe up gesture			
Three-finger swipe down gesture			
Demonstrate when to use which three-finger swipe gestures to navigate to the desired screen/page			
06 Rotor Gestures			
Rotor gesture: Two-finger twist clockwise			
Rotor gesture: Two-finger counter-clockwise			
Navigate to the desired item on the rotor			
Adjust the desired rotor item using a one-finger swipe up gesture			

Skill	Date Introduced	Independence Level & Progress %	Date Mastered
Adjust the desired rotor item using a one-finger swipe down gesture			
Demonstrate efficient rotor gestures: when to move clockwise or counter-clockwise and when to use one-finger swipe up/down			
07 Practical Application			
Actively listen for and use sonification to follow lines			
Drag in a straight diagonal line with sonification			
Drag in a straight diagonal line without sonification			
Drag-and-Drop gesture			
Actively listen for and identify Earcons			
Use Earcons to understand what is happening			
Actively listen for and use VoiceOver Hints as needed			
Independently find and navigate a menu			
"Scrub" or Back gesture (two-finger back and forth)			
Demonstrate understanding the concept of a grid			
Independently complete activities that require swipe, double tap, drag and split tap			
Initiate self-familiarize (exploring screen) with new screens or new games			
Successfully problem solve			

iOS Skills Checklist for the FirstSteps App

Observation Notes: