

Drag and Drop

Action

- Pick and move an item from one location to another on the screen.

Why Is This Gesture Important?

- **Drag and drop** is a common interaction in educational apps.
- It allows children to select answers by dragging items to designated areas.

Prerequisites

- Drag, tap, and double tap gestures
- Spatial awareness and mental mapping—the ability to remember item locations on the screen.
- Ability to identify the desired item to move
- Screen exploration skills - Children must first explore the screen and locate the start and end points before performing the gesture efficiently.
 - Unlike tactile graphics, where two hands can be used (one to hold the endpoint), the iPad allows only one touch at a time, requiring children to rely on mental mapping and auditory feedback.

Warm Up Activities

- Tickle Touch Activity (review)
- Knock-Knock Activity (review)
- Expanded Coin Hockey Activity (introduce)

Physical Gesture

- Drag to find the desired item.
- **Double tap and hold** (listen for the **triple tone** indicating the item is captured).
- Drag to the destination.
- Release the finger to drop the item.

Key Movement Tips:

- Before starting, explore the screen to build a mental map of item locations.
- Use a light touch (tickle touch) and quick movement.
- Keep the hand relaxed and hover just above the iPad screen.
- After double tapping, hold the finger on the screen until the confirmation tone plays.
 - Drag the finger to the drop location – **do not lift** the finger until reaching the drop location.

Listening is crucial:

- Hear the item name when selecting it.
- Listen for the triple tone when capturing the item.
- Confirm the drop location is announced before releasing.

Common Issues

- **1-finger tap is interpreted:**
 - **Cause:** Double tap is too slow.
 - **Fix:** Practice making a quick double tap.
- **Double tap or triple tap: (Double tap and hold not recognized):**
 - **Cause:** Lifting the finger after the second tap (two taps instead of a double tap and hold) - this is a challenging gesture and requires practice to build muscle memory!
 - **Cause:** Tapping three times instead of two and hold.
 - **Fix:** Practice double tap and hold movement – do not lift finger after two taps.
 - **Fix:** Listening for the triple tone helps the student hold and not release.
 - **Fix:** Until muscle memory is developed, many children will tap twice and release (double tap gesture) instead of double tap and hold.
- **Dropping object:**
 - **Cause:** Lifting the finger while dragging or before finding the destination.
 - **Fix:** Do not lifting the finger while dragging.
 - **Tip:** Discuss that your finger is “sticky” and must stay “glued” to the screen! Do not lift your sticky finger from the hold until the triple tone is heard. (Lifting the finger will drop the item.)
- **Unable to find the destination:**
 - **Cause:** Not knowing where to drag the item.
 - **Fix:** Explore the screen first and build that mental map before dragging.
 - **Fix:** Use spatial terms to help remember the drop location.
 - **Fix:** Do not release the finger until the desired end location is announced.
 - When the item is released in the correct location, a two-part tone plays.

If the item is dropped before reaching the destination, the item will automatically go back to its original location and the child will have to start the process over again.

Earcon

- When dragging over an item, a click sound plays.
- When an item is successfully captured, a triple tone sound plays.
- When an item is successfully dropped, a two-part tone plays.

Lessons

Lesson 1: Drag in a straight line with sonification (Horizontal)

Lesson 2: Drag in a straight line without sonification (Horizontal)

Lesson 3: 1-finger tap

Lesson 4: 1-Finger Double Tap

Lesson 5: Double tap, hold, listen, and drag

- **Goal:** Learn the double tap, hold and listen movements, which is the first part of the Drag and Drop gesture.
- **Screen Layout:**
 - An airplane is located halfway down on the left side of the screen.
- **Breakdown:**
 - Drag down the left side of the screen until you hear “click”, indicating the airplane.
 - Double tap and hold (listen for the triple tone).
 - Drag the airplane a short distance to the right.
 - Repeat three times to complete the lesson.

Lesson 6: Drag and drop

- **Goal:** Learn the full Drag and Drop gesture.
- **Screen Layout:**
 - A rubber duck is located halfway down on the left side of the screen.
 - A bathtub is three-fourths down the right side of the screen.
- **Breakdown:**
 - Drag down the left side of the screen until you hear the “click” indicating the duck.
 - Double tap and hold (listen for the triple tone).
 - Drag the rubber duck in a straight line to the bathtub.
 - Lift your finger when “bathtub” is announced.
 - Repeat three times to complete the lesson.

This structured approach helps children develop essential navigation and interaction skills used to interact with educational apps, while practicing the drag and drop gesture.