

Parent information on

In-hand manipulation skills

Description

The term in-hand manipulation refers to the movement of objects within or by the hand. In-hand manipulation skills are required for handwriting, tool use (e.g. scissors), dressing, eating, and constructive play. Signs of poor in-hand manipulation include frequent dropping of objects, using two hands to complete activities that normally only require one hand, and slow fine motor task completion. In such cases, it is important that the muscles of the hand are strengthened through the repetitive practice of activities that require the in-hand manipulation skills of translation, shift and rotation.

Translation

Translation refers to the movement of objects between the fingers and palm of the hand. The two types of translation are therefore finger-to-palm and palm-to-finger. Think of how you manipulate money at a coin vending machine, and when picking up lots of coins from a table to collect in one hand and this is the movement plan of translation.

Activity ideas to develop translation:

-  *Vending machines / parking meters:* starting with a handful of coins, get your child to wriggle and push the coins forward to their "pinching fingers" one at a time.
-  *Purse:* periodically ask your child to dig out the 5c coins from your wallet or purse, collecting several in the palm of their hand. Then...
-  *Piggy bank:* ask them to transfer the 5c pieces into a piggy bank, one at a time.
-  *Necklaces:* thread beads, buttons or fruit loops onto a piece of string, starting with several items in the palm of the hand.
-  *Board games:* such as Connect 4 or Checkers, which require the child to move a counter from the palm of their hand to their finger tips for placement.
-  *Constructive play:* moving blocks, lego etc from the palm to the fingers and vice versa.

Shift

Shift involves the adjustment of an object in the hand after it has already been grasped. This is an important skill in the use and adjustment of pencils, scissor skills, cutlery, bead threading and many functional day to day tasks, eg opening a slide phone.

Activity ideas to develop shift:

-  *Pencils:* creeping the fingers and thumb up and down a pencil before starting a drawing or writing activity.
-  *Cards:* fanning playing cards in the hand by sliding the thumb across the fingers.

 *Finger games:* Learning how to drum fingers on a table top, clicking fingers, finger actions and rhymes such as “here is the church and here are the people”, knitting, threading, Cat’s cradle and holding a superball or tennis ball in your hand and rotating it with just the one hand.

 *Tricky fingers:* this is a game that is commercially available and great for dexterity.

 *Musical Instruments:* playing the piano, saxophone, flute, guitar or the recorder all use shift.

 *Hobbies - Kites:* holding the string to let in or out, Fishing: with a hand line.

Rotation

Rotation occurs when an object is turned in or by the hand. For example when you pick up a pen at the wrong end and you turn it around in your hand so the nib is the correct way.

Activity ideas to develop rotation:

 *Jars:* unscrewing and re-screwing jar lids.

 *Nuts and bolts:* have races to see how many they can screw on and off in a given period of time.

 *Twist ties:* undoing and re-tying the twist ties on bread and other food packets.

 *Pipe cleaners:* creating shapes, animals or bubble-blowers

 *Pencils:* using a pencil with an eraser on the end, so that your child needs to rotate the pencil in their end to alternate between the writing and erasing ends. Play helicopters with a pencil to warm up before writing (see below).

 *Spinning tops:* spin in an outward direction using the index (or middle) finger and thumb.

 *Finger games:* teaching them to twiddle a paper clip, eraser or small object, holding a baton and twisting it like a helicopter blade.

Strategies to use during activities

You can use the prompt, “wriggle, wriggle and push” during translation activities.

Using differently textured objects in in-hand manipulation activities gives your child greater sensory input, and this helps them to develop their fine motor skills. Different textures also make a difficult task more fun.

Likewise, use heavier objects to start off with, as they are easier to manipulate and gives your child greater sensory feedback.

If your child persists with using both hands to manipulate an object, get them to hold onto something else with their non-dominant hand (e.g. ask them to hold onto the piggy bank with their “helper hand” while their “boss hand” wriggle and pushes a handful of coins into it). Alternatively, you can hold their non-dominant hand so they can’t use this hand to help.

