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Children develop basic grasp-and-release patterns in the early years. These skills are further refined as children use their hands in play and self-care. Between the ages of 2 to 6, children manipulate and adjust objects within the hand. These movements are foundations for activities such as handwriting, managing fasteners, and manipulating coins. Research indicates that children with inefficient in-hand manipulation skills take more time and lack dexterity for handwriting tasks.

There are four in-hand manipulation skills children develop. They include the ability to:

1) Pick up objects with thumb and index fingers and then transfer objects into one’s palm.
2) Transfer objects from palm to tips of thumb and index fingers.
3) Rotate fingers to manipulate objects to do tasks such as remove a jar lid or flip a pencil over to erase.
4) Shift objects using fingertips to do such tasks as separate two sheets of paper.

Suggestions to develop in-hand skills

1. Move objects from finger to palm
   (translation—without assistance from other hand)
   • Have child pick up object using thumb and index fingers of one hand and then transfer it to the palm, usually under the ring and little fingers (“hide it”). It is held there while child picks up additional items. The child should learn to do this without assistance from the other hand or any surface (table, body).
   • Pick up dry cereal or popcorn
   • Gather all objects of one color to sort
   • Get object from within a bag or coin purse
   • Depending upon the size of the object, start with one or two objects for younger children and increase to 6-10 objects for 4- to 5-year-olds.

2. Move objects from palm to fingers
   (translation—without assistance from other hand)
   • Have child transfer object from palm to thumb and index finger. The child should learn to do this without assistance from the other hand or any surface (table, body).
   • Put coins in a bank
   • Count and place objects into a small cup
   • Hold game pieces during a game
   • If child has difficulty, place object in the palm between thumb and index fingers.
3. **Move objects around on their axis (rotation)**
   - Turn over coins (e.g., heads to tails)
   - Pick up object such as puzzle pieces and rotate it to fit in puzzle
   - Pick up a pencil and rotate it around to use eraser

4. **Movements that occur at the finger and thumb pads (shift)**
   - Hold bead in one hand and push tip of lace through the opening. Fingers perform this skill only.
   - Hold crayon in middle, and then move fingers down to the writing point. No assistance from other hand, body, or table surface.
   - Move a coin from fingers to fingertips to put into a bank.

Since many of the activities we perform use many of these movements together, the following materials and activities can be used to develop hand skills in general, as well as working on various components of in-hand manipulation skills.

**Suggested Materials / Activities**

- Short crayons or pencils in writing centers
- Crafts using pipe cleaners, stringing small beads, tearing paper, crumpling tissue paper into balls
- Finger plays and finger puppets
- Coloring pages/books (outline pictures or shapes before coloring them)
- Playdough factory
- Small balls of playdough to flatten between pads of fingers
- Small lock and keys
- Ziploc bags
- Spray bottles
- Children “tool chest” (screwdriver)
- Hammer golf tees into firm foam block
- Magnetic wands
- Paper-punch card stock and then lace it
- Sort items into mini-muffin tins
- Serve popcorn on napkin so children can pick up individual pieces
- Hide object in hand for others to guess
- Write on chalkboard
- Colorforms, flannel boards, and velcro books/boards
- Trace pictures taped to windows
- Make letters or shapes using buttons or beans
- Draw using tiny (1/4") sponges dipped in paints or water
- Finger plays
- Fasten buttons, snaps
- Sort items using tweezers or sugar tongs
- Find objects hidden in tray of beans or rice (match to pictures)
- Unscrew and screw jar lids (store various items inside)
- Games that include dice, marbles, tweezers, small objects to move (e.g. Mancala, Mr./Mrs. Potato Head, Perfection, Operation, card games, Lincoln Logs, Lite Brite)

Contact your school or AEA Occupational Therapist for further assistance, if needed.

Compiled by:
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<td>12</td>
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<td>13</td>
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<td>14</td>
<td><strong>Green Valley AEA 14</strong>&lt;br&gt;1405 N. Lincoln&lt;br&gt;Creston, IA 50801&lt;br&gt;Ph 515/782-8443; Fax 515/782-4298</td>
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