

Suggested Play Materials

Wrist Flexibility

- Hinged boxes to open and close
- Latch boards
- Padlocks and keys
- Paint and painting accessories (e.g., easels, paintbrushes, palettes)
- Shovels
- Trays to carry and balance objects on

Hand Strength

- Building toys to connect and take apart (e.g., bristle blocks, DUPLO blocks, linking cubes, star builders)
- Knob puzzles
- Playdough and clay
- Real tools that require a gripping, flexing, or squeezing motion to use (e.g., binder clips, hole punchers, plastic knives, rolling pins, rubber bands, scissors, spray bottles, tongs, turkey basters)

Finger Dexterity and Precision

- Aluminum foil and items to be wrapped (e.g., figurines, rocks, seashells)
- Beads and string (e.g., floss, shoelaces, yarn)
- Containers with a slit in the lid for items to be slotted into
- Embroidering, sewing, or weaving materials (e.g., embroidery hoops, fabric scraps, looms, plastic sewing needles, thread, yarn)
- Lacing cards
- Nuts and bolts
- Potato Heads
- Real tools that require a pinching motion to use (e.g., clothespins, eye droppers, pipettes, tweezers)
- Stencils and pencils (e.g., golf, standard, thicker width, triangular)

CHAPTER 15

Play Materials That Enhance My Fine Motor Skills

Our hands work every day to help us with tasks that require holding and manipulating objects, from eating to opening containers to turning book pages. Like any other muscle in the body, the small muscles that control these movements need to be exercised. Having a stable base of fine motor skills allows young children to do many things, including caring for their personal needs, such as buttoning or zipping their coats, and participating in literacy activities, such as drawing and writing. To develop these skills, children need a wide range of experiences using the different muscle groups of the wrists, hands, and fingers. Preschoolers are still developing the muscle structures to support the full range of motion in their hands (Huffman & Fortenberry 2011). With time and frequent use, children build up the precision and dexterity of these small muscles.

It is important to provide play materials that support a broad range of abilities and stages of muscle development. As you choose play materials with which children can practice their fine motor skills, consider their experiences at home. Sometimes, something as simple as the utensils families use to eat can affect development.

During self-guided play, preschool teacher Mr. Paz walks to the art center and sees 4-year-old Mina using colored pencils and some textured paper at the table. He takes note of how steady and secure the pencil is in her hand. She holds the pencil with a firm yet delicate grip, moving it smoothly across the page. *Mina has an exceptional amount of fine motor control for a 4-year-old*, Mr. Paz thinks.

At the end of the day, Mr. Paz shares his observation with Mina's mother. "She must have a lot of opportunities at home to draw and work with her hands," he comments.

Mina's mother nods and says, "Our family uses chopsticks to eat every meal. Mina's older brother helped her learn, and she has been using them to pick up her food since she was 2 years old."

Mr. Paz makes a mental note to review the play materials in the manipulatives center and make sure there are options available for children with different levels of ability in using their hands, including Mina's well-developed fine motor skills.

Engaging with fine motor play materials often requires hand–eye coordination, which has been linked to school readiness (University of Leeds 2018). Activities like lacing, buttoning, and cutting stimulate the brain and encourage higher levels of cognitive processing (Grissmer et al. 2010). Knowing the impact of physical development on learning, teachers can provide many play materials that help children develop the different muscle groups. Most children now enter preschool with the ability to point at and swipe a screen (Rideout & Robb 2020). While the isolation of one finger is beneficial, there is conflicting research on the positive and negative effects of touchscreen use. While some studies have shown that children who use touchscreens for more than 60 minutes per week have weaker fine motor skills (Lin, Cherng, & Chen 2017), others have shown that children who use touchscreens have slightly more advanced fine motor skills (Souto et al. 2020).

Padlocks and Keys

Take a moment and think about how your hand moves when opening a lock. This gripping and twisting motion can be unusual for young children who are not usually encouraged to move their hand in this way. A padlock and key provide an experience that has a positive effect on developing wrist strength. Since hand dominance (left-handed or right-handed) is mostly established by age 4 (Johnston et al. 2009), giving the wrist added exercises supports more intensive writing skills.

Introduce a collection of three or four padlocks with keys on individual rings. Padlocks can be placed in a basket with each key ring and children can use trial and error to unlock each lock. As they insert and twist the keys, ask "Can you explain how you are moving your hand to unlock the lock?" Drawing attention to this movement lets children know that you value their developing strength and skill.

To prevent children from becoming bored with padlocks, you might create games that incorporate them. Using easy-peel or erasable stickers, label each lock and key with a color or shape. Children can sort through the locks to find the matching keys. If colors and shapes become too simple, increase the challenge for children by using more complex matching or coding systems (e.g., written numerals on keys and the corresponding number of dots on locks; lowercase letters on keys and uppercase letters on locks). Children will enjoy the novelty of this experience while also practicing their fine motor skills.





Sewing Materials

Similar to lacing cards or stringing beads, the motion of pushing and pulling yarn or thread through a hole is an advanced skill for young children. To introduce the concept of sewing, read a familiar story such as *Corduroy* (by Don Freeman). Before finishing the story, ask the children, “How will Corduroy attach a new button?” Offer children fabric scraps with prepunched holes, burlap, mesh netting, buttons, and yarn or thread. Children whose fine motor skills are in the early stages of development will find it easier to use their fingers at first rather than plastic sewing needles, but have the needles available for them to try and then use more regularly when they’re ready.

Playful Problem Solving

Have you ever wondered what would happen if the doll clothes vanished from the dramatic play center? Would the children look to find where they went? What would happen if in their place there appeared fabric scraps with prepunched holes, yarn (or thread), and plastic sewing needles?

Providing these play materials as replacements for doll clothes will not only spark preschoolers’ creativity and collaboration skills but also develop their fine motor skills. As children practice their pincer grasp on the needle and lace thread through from hole to hole, they are strengthening the muscles in their fingers and increasing their precision.

As children develop more stability with their grip on the needles, encourage them to sew several pieces of fabric together to create something, such as clothing for a doll. Comment on how they are connecting the pieces of fabric and ask questions that prompt them to think more deeply about the play materials (“Have you ever seen anyone use a needle and thread like this before?” “What else do you think we could make with these sewing materials?”).

Nuts and Bolts

Nuts and bolts—whether large, colorful, and plastic or small and metallic—provide children with opportunities for fine motor learning and development. As children screw the nuts onto the bolts using their fingers or a wrench, they engage in motions that stretch and strengthen

NOW TRY THIS! Accommodations That Work

Children who have practice using the small muscles in their hands will have an easier time handling small objects. However, they may not yet have the coordination to use their hands in opposing movements at the same time. Support children in developing coordination skills with the following activity. On a section of smooth wood, glue down several bolts (plastic or real) with the head down and the threaded-end up. With the bolts steady, children can use one hand in a continuous motion to turn nuts on the threaded end of the bolts. This movement helps extend the dexterity of children's fingers and the range of motion and flexibility in their wrists, which also supports their ability to engage in writing tasks. Using a hand-over-hand approach, you can gently guide the child's hand into the motion you wish them to practice as needed.

the muscles of the wrist and develop the ability to flex their fingers. Additionally, the complex act of turning an object with one hand while using the other hand to hold a different object in place requires a coordination of skills and mental processes.

Younger preschoolers may begin exploring this play material before they can fully manipulate it by raking through a bin of plastic nuts and bolts and opening and closing their hand around them. Children may also attempt to fit the nuts and bolts together as they investigate the thread (that is, the spiral-ridged end of the bolt onto which nuts are twisted) on each piece. Support children at this stage by pointing out the threaded sections ("I see these little lines and grooves; I wonder what they are for"). Teachers may also notice that children try to put the nuts and bolts together by inserting and pushing on one end. Give children plenty of exploration time to discover if their solution works or not. If their trial and error results in frustration before they try other ways of making the nut and bolt fit together, you might ask them why they think the pieces are not connecting easily and help them come up with alternate solutions to try.

As older preschoolers gain control and precision over their hand movements, introduce real nuts and bolts. A woodworking center or makerspace is an ideal place to support children at this level as they engage in an engineering design or woodworking project where they have to link objects together. Discuss how the bolts can be used to connect various materials.

Conclusion

As children's fine motor skills increase over time, continue to challenge them by adding play materials that are more complex or require more refined precision and strength for children to succeed. Support children at all levels of fine motor development by observing them at play and crafting experiences that strengthen the developing muscles in their wrists, hands, and fingers.

TECH TIPS

- Search online with children for projects to build with LEGO bricks and encourage them to recreate them.
- Introduce a digital dynamometer, a device that measures force. Invite children to use the dynamometer to measure their handgrip strength, record the results, and compare them with those of their peers.
- Download game apps, such as the Scriba Snap, that require use of a stylus and respond to pressure.
- Cut a finger off an old glove for children to wear while using touchscreen devices, such as tablets. This helps children have an easier time focusing on using just one finger on the touchscreen.