

Early Intervention Every Day!

Embedding Activities in Daily Routines for Young Children and Their Families

by

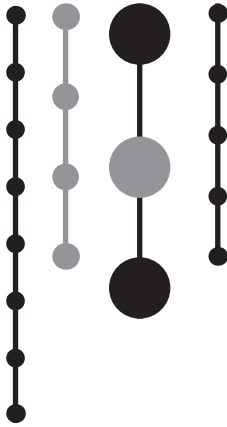
Merle J. Crawford, M.S., OTR/L, BCBA, CIMI

and

Barbara Weber, M.S., CCC-SLP, BCBA

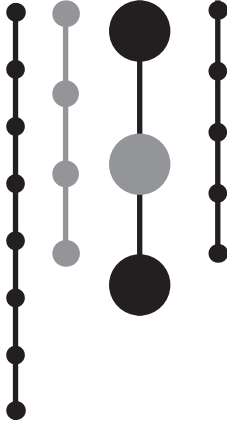


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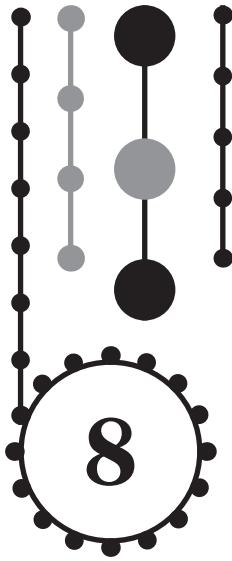
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About the Authors

Merle J. Crawford, M.S., OTR/L, BCBA, CIMI, is an occupational therapist who has a private practice in central Pennsylvania. She has a bachelor of science degree in special education and elementary education and a master's degree in occupational therapy. In addition, Ms. Crawford has graduate certificates in applied behavior analysis and autism. She has extensive training in relationship-based interventions and is a Board Certified Behavior Analyst and a Certified Infant Massage Instructor. Ms. Crawford works primarily with infants and toddlers in early intervention, integrating strategies from her varied training when coaching families and working with young children.

Barbara Weber, M.S., CCC-SLP, BCBA, is a speech-language pathologist who has a private practice in central Pennsylvania. She received her bachelor of science degree and master's degree in communication disorders. Ms. Weber has a graduate certificate in applied behavior analysis. She holds the Certificate of Clinical Competence from the American Speech-Language-Hearing Association and is a Board Certified Behavior Analyst. She has worked with children and adults with a variety of disabilities for more than 30 years in school, clinic, and home settings. Ms. Weber works with infants and toddlers as her primary clinical focus and concentrates on collaborative processes to help families integrate routines-based intervention.



Fine Motor Skills

Fine motor skills are those that require small muscle movements, and they are generally hand skills. Fine motor skills are very much influenced by the larger muscles, which provide a stable base from which the smaller muscles can work (Case-Smith, Fisher, & Bauer, 1989). For example, for the hands to work best, the shoulder muscles must be working well. Posture also very much influences the smaller muscles. If a child is expending a great deal of effort to hold himself or herself up in a chair or on the floor, the hands may not be free to manipulate items well. Even if the child is not propping on the arms, the arms may not be in an ideal position. For example, if a child does not have adequate sitting balance, he or she may compensate by retracting the shoulder blades, which may result in elbow flexion and difficulty reaching forward. When working on new fine motor skills, it is helpful to have the child positioned as stably as possible so he or she can work on the hand skills without having to work hard at maintaining an upright position.

Fine motor skills are very much influenced by visual skills. For most fine motor skills, the eyes direct the hands. Visual attention, visual tracking, and visual pursuits greatly affect fine motor skill acquisition. Cognitive skills also very much influence fine motor skills, and one can find the same type of activity, such as stacking blocks, in both the cognitive and the fine motor sections of developmental assessments. The understanding that blocks can be stacked is a cognitive skill in terms of understanding the function of objects, and the fine motor skill is the ability to use the eyes and upper extremity together. The higher the block tower, the greater the coordination needed. Shoulder, arm, and hand stability; grasping patterns; visual skills; direction following; imitation skills; and, of course, impulse control greatly affect the ability to stack blocks.

One particular child comes to mind to further illustrate the complexity of fine motor development. A physical therapist and a teacher of the deaf and hard of hearing were providing services to a young child who has a diagnosis of Down syndrome. During the annual evaluation, they found that the child did not release items into a container, and they requested a consultation from an occupational therapist to recommend activities to help the child learn to use his hands better to release. The occupational therapist found that the difficulty was not with the child's hand skills, per se, but were more related to difficulties with his cognitive skills. He could actively let go of objects, as he dropped his bottle when done and he dropped objects to pick up other objects. He did not see a purpose in releasing into a container. This child was at a sensory level of play, and it was found that when releasing resulted in sensory feedback he was more likely to release into a container. The occupational therapist helped him release into a container and then made

the objects in the container spin to stimulate and reward the child's visual and auditory systems, along with enthusiastically cheering him for his great effort. Over time, this behavior was shaped until the child became independent and was able to put a variety of objects into a variety of containers. Though those working in the field of child development often classify skills in one of the developmental domains, many skills have components of more than one domain.

Many times EI providers who are working on skills in other domains can also address a child's fine motor skills. Sometimes, however, consultation or direct service from an occupational therapist may be needed. If a child has a very strong hand preference and uses the nonpreferred hand very little or not at all, such as when a child has hemiplegia or a brachial plexus injury, the assistance of an occupational therapist and/or a physical therapist should be sought. If an older toddler has difficulty sequencing fine motor actions such as using a fork, playing with toys that have multiple steps, or imitating complex actions, an occupational therapist should evaluate the child's motor planning skills.

This chapter presents milestones in the area of fine motor skills. Each skill is described and its importance discussed. Ways for providers to coach caregivers to facilitate the skill's development in daily routines and activities are also presented, as are tips and hints for furthering the development.

VISUAL FIXATION AND ATTENTION

Visual fixation occurs when the eyes focus on an object or a person.

Importance: Visual fixation is one of the first visual skills to develop and is a prerequisite for tracking and coordinated reach and grasp. As discussed by Columbo (2001), visual attention includes four functions: alertness, spatial orientation, attention to object features, and attention to one stimulus while inhibiting attention to another. It is easiest for some children to focus on and attend to reflective objects such as mirrors or aluminum foil.

How to Incorporate into Routines: During all routines, when using objects such as the washcloth during bathtime, pajamas when getting ready for bed, the bottle during mealtime and snack time, the brush during grooming, and the rattle during playtime, present the item in front of the child's eyes, shaking it to draw attention to it. In addition, during all routines, talk to the child in a sing-song cadence to encourage him or her to look at your face.

Tips and Hints

If it is difficult for the child to pay attention to faces, make silly sounds and funny faces to help get his or her attention. Wearing brightly colored lipstick, funny glasses, or a sticker on the nose may also help draw attention to a caregiver's face. Minimizing distractions helps the child to focus on specific visual targets.

Some children attend very well to visual stimuli but have difficulty shifting their attention from one stimulus to another. Children with autism sometimes appear to "get stuck" on patterns or forms. Eye movements involving quick shifts from one stimulus to another, known as saccades, are good to practice by having a child look from one person or object to another. To facilitate this, it is helpful at first to use shaking or other movements or auditory cues such as silly sounds to encourage shifting of attention.

VISUAL TRACKING

Visual tracking, called *smooth pursuits* in some developmental assessments, is characterized by the eyes following visual stimuli such as toys or faces that are moving. Tracking skills include tracking to mid-line, across mid-line, and up and down.

Importance: Tracking helps a child understand what is going on in the environment. Following people who walk into and out of a room, grasping a toy that is moving, and grabbing a ball that is rolling are most successful when good tracking skills exist.

How to Incorporate into Routines: Tracking can be incorporated into any routine or activity. With the child in supported sitting such as in a swing, on a lap, or in a bath seat, move toys slowly from one side to another, several inches in front of his or her eyes. Once the child is able to watch the objects without losing focus, try moving toys up and down. When talking to the child, move your face slowly in front of the child to encourage the eyes to follow you. At mealtime, encourage the child to watch you move the bottle or spoon.

Tips and Hints

A child can best use his or her eyes when the head is stable. For children who have difficult tracking, first practice with them lying on their backs and progress to supported sitting.

BATTING AND REACHING

Reaching toward or batting at toys with the hands typically occurs before a child is able to grasp. In sitting, children usually reach using both hands and then later usually use just one hand, the one closest to the object.

Importance: Batting and reaching help develop eye–hand coordination and are often some of the first movements that begin the process of learning about cause and effect. When the child discovers that when he or she hits a toy and it moves or makes a sound, he or she begins to understand that hand movements make things happen, an important cognitive skill. Reaching requires control of the shoulder, and practicing these movements strengthens shoulder muscles, which give a stable base for more refined movements of the hands, which develop later. Reaching in all positions is important for functional skill development.

How to Incorporate into Routines:



Bath Time: Hold out toys for the child to bat at so they will fall in the water and splash.



Bedtime: Present books, your face, and bedtime comfort objects nearby for a child to touch.



Diapering and Dressing: Place a clean diaper or clothing item above the child's eyes to bat away to play Peekaboo. Tickle or rub the child's arm or hand and then stop with your hand near the child's. When the child reaches and touches your hand, begin again.



Mealtime/Snack Time: Playfully encourage the child to reach for the bottle or the cup as well as snack foods.



Playtime: Place toys that make sounds within the child's reach when the child is on the floor.

Tips and Hints

If the child uses one hand more than the other—for example, a child who has a brachial plexus injury or hemiplegia due to cerebral palsy—place highly desired objects near the nonpreferred side to encourage the child to move that hand.

PVC pipe or cardboard wrapping paper tubes can be used to suspend spoons, rattles, or other objects using short pieces of ribbon during close supervision.

GRASPING

Grasping occurs when the fingers are used to hold a toy, a finger, or another object. At first the grasp is reflexive, and later it comes under voluntary control. A child is able to hold a toy for only a short length of time when grasp is first developing. Children first grasp objects placed on or near their hands, and once they are able to do this, they are able to combine reaching and grasping. When the wrist is in an upward position (extended), grasping is easier, as the fingers are more likely to close on an object. Children are first able to grasp lightweight, narrow, or thin objects such as plastic links, bracelets, and socks. They will be more likely to grasp items that make sounds they like, those they find visually appealing, and/or those that have a texture they like.

Importance: Grasping is important for the development of play skills, thinking skills, and self-care skills such as eating, dressing, grooming, and practicing hygiene. After a child can grasp, he or she can explore objects in various ways.

How to Incorporate into Routines:



Bath Time: Provide sponges, washcloths, empty small plastic bottles, and toys such as rubber duckies for the child to grasp.



Diapering and Dressing: Have the child reach for your hands, a diaper, or a toy after diaper changes.



Mealtime/Snack Time: Gently help the child hold the feeder's fingers as he or she is bottle fed or breast fed. For babies who take a bottle, encourage them to hold the bottle by gently and playfully taking their hands to the bottle. As the child begins to finger feed, place soft pieces of food on his or her tray.



Playtime: Provide a variety of shapes and sizes of toys for the child to hold, starting with lightweight and thin rattles and rings, and progress to heavier and more varied shapes.

Tips and Hints

For children who have increased muscle tone, it is helpful to relax the child's body before working on grasping activities. Rhythmic movements and gentle stretching performed before presenting the item to be grasped may assist the child.

Having the child's forearms on a surface such as a highchair tray often helps provide stability, which makes grasping easier.

For children who have visual impairments, using colors that contrast with the surface on which the items rest will help the child find the objects to be grasped.

TRANSFERRING FROM HAND TO HAND

Transferring refers to moving an object from one hand to another. Before children transfer hand to hand, they often transfer from one hand to their mouth and then to their other hand.

Importance: Very young children often practice transferring from one hand to another as they explore an object using vision, touch, hearing, and taste. Transferring from one hand to another also occurs if one hand gets tired, if it is necessary to push a hand through a sleeve and a large item is being held, if one hand is more skilled than the other and the nondominant hand needs to hold while the dominant hand performs a skilled movement, or if the dominant hand needs to reach and it is holding an object. Transferring helps a child refine grasping, releasing, and coordinated use of two hands.

How to Incorporate into Routines:



Diapering and Dressing: Have the child hold a relatively small toy (but not so small that it is a choking hazard). When it is time to push the child's hand through a sleeve, help the child move the toy to the other hand.



Mealtime/Snack Time: Give the child two food items, presented one at a time to the same hand to facilitate a transfer. Present both items to the right hand and then later to the left, or vice versa.



Playtime: Place a bowl, basket, or box of easily held toys in front of the child. At times place the container near the right hand and at other times, near the left hand. As the child takes them out, he or she may move the items to the other hand.

Tips and Hints

Children who have a strong hand preference, such as those who have a brachial plexus injury or hemiplegia, often transfer from the nonpreferred to their preferred hands long before they transfer in the other direction. Practice transferring into the nonpreferred hand helps the child practice grasp and release in a way that is meaningful for him or her.