

Bilateral Coordination

What is bilateral coordination?

- The ability to use both sides of the body together.

Types of Bilateral Coordination:

- **Symmetrical Movements** = each leg or each hand does the same action at the same time.
 - Examples: pulling up pants or socks, clapping, jumping rope
- **Reciprocal Movements** = using the arms and legs in alternating movements. These are actions where first one arm or leg moves and then the other carries out the same movement in a rhythmical way. Reciprocal movements are also called alternating movements.
 - Examples: marching, pedaling a bicycle, swimming
- **Leading Hand and Supporting Hand** = using one hand to perform a task while the other hand assists as needed. The hand that performs the action is the dominant hand, while the hand that assists during the task is the non-dominant hand.
 - Examples: cutting, writing, lacing

Why is bilateral coordination important?

- Shows that both sides of the brain are communicating effectively and sharing information during tasks.
- To be able to use both sides of the body to complete tasks such as:
 - Daily living activities = activities we do every day (dressing, tying shoes, self-feeding)
 - Fine motor activities = the ability to use the small muscles in the hands (buttoning, stringing beads, banging toys together)
 - Visual motor activities = the ability to see something and respond with a motor action (drawing, writing, cutting, catching a ball)
 - Gross motor skills = the ability to complete big body movements (crawling, walking, climbing stairs, riding a bike)

When should my child start completing some bilateral coordination tasks?

Fine Motor Skills

- Moves arms symmetrically between birth and 2 months old.
- Brings hands to midline between 1 and 3 months old.
- Reaches for object with both hands between 4 and 5 months old.
- Transfers object between 5.5 and 7 months old.
- Bangs two blocks held in hands between 8.5 and 12 months old.
- Uses both hands freely (may show preference for one) between 11 and 13 months old.
- Scribbles spontaneously between 13 and 18 months old.
- Uses both hands in midline (one holds, one manipulates) between 16 and 18 months old.
- Strings three one-inch beads between 23 and 25 months old.
- Starts to snip with scissors between 23 and 25 months old.
- Snips on a line using scissors between 28 and 35 months old.

Self-Help Skills

- Places both hands on bottle between 4.5 and 5.5 months old.
- Holds and drinks from cup with some spilling between 12 and 18 months old.
- Removes socks between 15 and 18 months old.
- Removes shoes when laces are undone between 18 and 24 months old.
- Unzips and zips a large zipper between 18 and 21 months old.
- Puts shoes on with assistance between 21 and 30 months old.
- Washes hands between 24 and 30 months old.
- Undresses with assistance between 26 and 32 months old.
- Dresses self with assistance between 28 and 32 months old.
- Buttons large buttons between 30 and 36 months old.
- Pours liquid from a small container between 30 and 36 months old.

Gross Motor Skills

- Kicks reciprocally between 1.5 and 2.5 months old.
- Crawls backwards between 7 and 8 months old.
- Crawls forward between 8 and 9.5 months old.
- Walks without support between 13 and 15 months old.
- Runs (hurried walk) between 14 and 18 months old.
- Throws ball forward between 15 and 18 months old.
- Walks upstairs and downstairs holding onto railing and with both feet on a step between 15 and 18 months old.
- Kicks ball forward between 18 and 24.5 months old.
- Jumps in place with both feet between 22 and 30 months old.
- Catches large ball between 24 and 26 months old.
- Rides tricycle between 24 and 30 months old.
- Walks upstairs alternating feet between 30 and 34 months old.
- Hops on one foot between 30 and 36 months old.
- Walks downstairs alternating feet starts around 34 months old.
- Climbs on jungle gyms and ladders between 34.5 and 36 months old.

Signs that my child is struggling with bilateral coordination:

- Clumsy or has difficulty completing gross motor movements.
- Frequently tries to use one hand for tasks that should require two hands.
- Struggles to complete fine motor tasks.

Home Activities for Bilateral Coordination

Animal Walks

- Walk around the house like different animals.
- Focus on using both arms and feet together.



Marching and Cross Crawls

- Encourage your child to march around the house or outside.
- Cross crawls are when you touch your right hand to your left knee and then your left hand to your right knee and then repeat these motions.
- You can even listen to music or sing songs such as The Ants Go Marching.



Jumping Activities

- Have your child do different jumping activities around the house or outside such as:
- Jumping jacks
- Jumping over or on a line (a crack outside, a rope, tape, etc.)
- Jumping onto items (pillows, blankets, etc.)



Hopscotch

- Playing hopscotch is a fun activity that can be done indoors or outdoors.
- Create your own hopscotch game by using materials in your home such as chalk, tape, cardboard, paper, rope, or anything else you may have.



Playing Ball

- Playing ball is a great way to work on bilateral coordination skills.
- Have your child practice throwing a ball, catching a ball, and kicking a ball.
- You can even try to encourage them to throw it or kick it in a target such as an empty box, bucket, or laundry basket.
- If you do not have a ball to do these activities with, try using other items in your home such as a pillow, pair of socks rolled up, empty containers or boxes, or anything else you may have that is safe.



Rip Paper, Paper Towels, or Cotton Balls

- Ripping paper, paper towels, or cotton balls is a great way to strengthen the hands while working on using two hands together.
- Give your child scrap paper, newspaper, wrapping paper, paper towels, or cotton balls and encourage them to rip it into small pieces.
- Try to focus on your child using both hands together.



Playing with Lids and Containers

- Placing and removing lids on containers is a great way to work on fine motor skills and practice using both hands together.
- Save your empty containers and cans for your child to play with. Here are some examples of containers or cans you can use:
 - Peanut butter jar
 - Puff's container
 - Water bottle
 - Formula can
 - Condiment container
 - Milk jugs
 - Wipe's container
 - Coffee can
 - Gum containers
 - Oatmeal can
 - Parmesan cheese
 - Tupperware
- Let your child explore how to open and close the different containers by lifting, twisting, and pushing with their fingers.
- Try to focus on your child using both hands to complete this activity.



String Objects

- Use a string, shoelace, yarn, or pipe cleaner to string objects on.
- Gather items to string such as beads, buttons, cereal (Fruit Loops, Cheerios, Apple Jacks, etc.), pasta noodles, cut up pool noodles, cut up toilet paper or paper towel rolls, egg cartons with holes cut into them, or anything else that has a hole in the center and can be strung.
- Encourage your child to string the items using both hands.
- The smaller the item is, the more difficult it will be for your child.
- Be sure to supervise your child at all times when using small items.



Lacing Boards

- Use cardboard or paper to create your own lacing board.
- You can use an entire piece of cardboard or paper or cut it into different shapes.
- Punch holes around the edges of the paper or cardboard.
- Use a string, shoelace, or yarn and have your child lace.
- Encourage your child to use both hands.



Shake Sensory Bottles

- Keep your empty water bottles or food containers – it is best if these are see-through bottles.
- Fill up your bottle with different objects such as:
 - Dry pasta
 - Popcorn kernels
 - Rice or sprinkles
 - Beans
 - Beads or buttons
 - Water
 - Hair gel or shampoo
 - Baby oil
- Glue or tape the bottle closed to ensure your child cannot open it.
- Allow your child to shake the sensory bottle to hear the different noises and watch the objects move around.
- Encourage your child to shake the bottles with both hands. You can even give your child two bottles and have them hold one in each hand and shake them at the same time.



Play with Playdough

- Playing with playdough is a great activity for children. If you don't have any at home, try using these ingredients to make your own batch!
 - 1 cup of flour
 - ¼ cup of salt
 - 1 teaspoon of cream of tartar
 - ½ tablespoon of vegetable oil
 - ½ cup of boiling water
 - Food coloring (15-20 drops for darker colors)
- Directions:
 - Whisk the flour, salt, and cream of tartar.
 - Make a small hole in the center and add the vegetable oil, boiling water, and food coloring.
 - Stir until the dough forms.
 - If the playdough feels runny or sticky, allow it to sit for a few minutes. If it still feels runny or sticky add a little more flour.
 - When dough is cool, use your hands to soften and form it.
- Store the playdough in a Ziploc bag and place the bag in a sealed container.
- Encourage your child to use both hands to play with the playdough:
 - Roll it between your hands to make a ball.
 - Roll it with both hands on the table to make a snake.
 - Use a rolling pin and both hands to flatten it.
 - Use both hands to push down on it on the table to flatten it.
 - Rip it with both hands.
 - Around 2 years old, your child can use scissors to cut it. Use scissors that are safe for children and supervise them at all times.



Drawing and Coloring

- Drawing or coloring on paper or cardboard is a great way to work on bilateral hand coordination skills.
- Let your child use a marker, crayon, or pencil to draw with.
- Encourage your child to hold their writing utensil in one hand and use their other hand to stabilize the paper or cardboard that they are drawing on.



Cutting with Scissors

- Around 2 years old, you can begin to expose your child to scissors.
- Remember to use scissors that are safe for children and be sure to supervise your child at all times.
- Have your child snip paper with the scissors and then progress to snipping on lines and cutting out simple shapes.
- Encourage your child to hold the scissors in one hand and the paper in the other hand.



Food Preparation

- Allow your child to help with food preparation tasks.
- Many food preparation tasks require both hands, which is a great way to practice bilateral hand coordination and self-feeding skills.
- Some ideas your child can assist you with are:
 - Stirring ingredients
 - Spreading foods such as frosting, peanut butter, or jelly



Singalong Songs

- Try singing some of these songs with your child to work on bilateral coordination skills.
- Encourage your child to sing along with you and to also complete the movements.

Itsy Bitsy Spider

The itsy bitsy spider climbed up the water spout.
Down came the rain and washed the spider out.
Out came the sun and dried up all the rain.
And the itsy bitsy spider climbed up the spout again.



Head Shoulders Knees and Toes

Head, shoulders, knees, and toes, knees, and toes
Head, shoulders, knees, and toes, knees, and toes
Eyes and ears and mouth and nose
Head, shoulders, knees, and toes, knees, and toes

If You're Happy and You Know It

If you're happy and you know it clap your hands
If you're happy and you know it clap your hands
If you're happy and you know it and you really want to show it
If you're happy and you know it clap your hands

If you're happy and you know it stomp your feet
If you're happy and you know it stomp your feet
If you're happy and you know it and you really want to show it
If you're happy and you know it stomp your feet

If you're happy and you know it nod your head
If you're happy and you know it nod your head
If you're happy and you know it and you really want to show it
If you're happy and you know it nod your head

Patty Cake

Patty cake, patty cake, baker's man.
Bake me a cake as fast as you can.
Roll it and pat it and mark it with a "b".
And put it in the oven for Baby and me.



The Wheels on the Bus

The wheels on the bus go round and round.
Round and round, round and round.
The wheels on the bus go round and round. All through the town.

The wipers on the bus go swish, swish, swish.
Swish, swish, swish, swish, swish, swish.
The wipers on the bus go swish, swish, swish. All through the town.

The driver on the bus goes move on back.
Move on back, move on back.
The driver on the bus goes move on back. All through the town.

The people on the bus go up and down.
Up and down, up and down.
The people on the bus go up and down. All through the town.

The horn on the bus goes beep, beep, beep.
Beep, beep, beep. Beep, beep, beep.
The horn on the bus goes beep, beep, beep. All through the town.

The baby on the bus goes whaa, whaa, whaa.
Whaa, whaa, whaa. Whaa, whaa, whaa.
The baby on the bus goes whaa, whaa, whaa. All through the town.

The mommy on the bus goes shh, shh, shh.
Shh, shh, shh. Shh, shh, shh.
The mommy on the bus goes, shh, shh, shh. All through the town.

References

- Amanda. (2014). Discovery bottles for baby [Photograph]. Messy Motherhood.
<https://messymotherhood.com/discovery-bottles-for-baby/>
- Angela. (2016). [Peanut butter spreading] [Photograph]. MOMtessori Life.
<https://momtessorilife.com/2016/08/10/food-prep-for-toddlers-peanut-butter-spreading/>
- Beck, C. (n.d.) *Bilateral coordination activities*. The ot toolbox.
<https://www.theottoolbox.com/bilateral-coordination-activities/>
- Bly, J. (n.d.). [Container play] [Photograph]. The Deliberate Mom.
<https://thedeliberatemom.com/opening-containers-an-activity-for-infants-and-toddlers/>
- Campbell, K. (n.d.). DIY indoor hopscotch [Photograph]. Momtastic.
<https://www.momtastic.com/family/diy-for-moms/378059-diy-indoor-hopscotch-game/>
- Chicago OT Theory. (2011). Animal walks [Photograph]. Chicago OT Theory.
<https://chicagooccupationaltherapy.com/ot-resources/gross-motor-exercise-worksheets/>
- Child's Castle. (2018). [Tearing paper] [Photograph]. Child's Castle.
<https://childscastle.wordpress.com/2017/09/12/3-stages-of-tearing-paper/>
- Child's Play Therapy Center. (2014, August 6). *What is bilateral coordination and why is it important?* Child's play therapy center. <https://www.childsplaytherapycenter.com/bilateral-coordination-important/>
- Currie, J. (2019). Indoor cardboard hopscotch [Photograph]. Happy Hooligans.
<https://happyhooligans.ca/indoor-cardboard-hopscotch/>
- Day, N. (2021, June 12). *Bilateral coordination – What it is, how to improve it*. He's extraordinary.
<https://hes-extraordinary.com/bilateral-coordination-challenges-and-strategies-to-improve-development>
- Greutman, H. (2016, July 12). *10 movement songs for preschoolers*. Growing hands-on kids.
<https://www.growinghandsonkids.com/movement-songs-for-preschoolers.html>

- Heffron, C. (2018). Beginner cutting skills for toddlers and young kids [Photograph]. The Inspired Treehouse. <https://theinspiredtreehouse.com/beginner-cutting-skills-for-toddlers-and-young-kids/>
- Jamie. (2021). [Tape jumping] [Photograph]. Hands on as We Grow. <https://handsonaswegrow.com/5-different-activities-for-6-lines-of-tape/>
- Jamie. (2020). Pool noodle stringing [Photograph]. Hands on as We Grow. <https://handsonaswegrow.com/threading-activities-kids/>
- Jamie. (2020). Threading egg cartons [Photograph]. Hands on as We Grow. <https://handsonaswegrow.com/threading-activities-kids/>
- Kate. (2017). Threading cardboard beads [Photograph]. Laughing Kids Learn. <https://laughingkidslearn.com/threading-activity-for-toddlers-using-large-cardboard-beads/>
- Kiley, C. (2015). Flatten it with hands on a rolling pin [Photograph]. Mama OT. <http://mamaot.com/12-simple-play-dough-activities-for-preschoolers/>
- Kiley, C. (2015). Roll a snake or ball [Photograph]. Mama OT. <http://mamaot.com/12-simple-play-dough-activities-for-preschoolers/>
- Kiley, C. (2015). Snip it with scissors and progress to cutting out lines and shapes in the play dough [Photograph]. Mama OT. <http://mamaot.com/12-simple-play-dough-activities-for-preschoolers/>
- Leigh, M. (2018). Lacing cards [Photograph]. Live Well Play Together. <https://www.livewellplaytogether.com/diy-lacing-cards/>
- McIlroy, T. (n.d.). *10 Fun clapping games for kids in preschool*. Empowered parents. <https://empoweredparents.co/clapping-games-for-kids/>
- McIlroy, T. (n.d.). [Hand clapping games] [Photograph]. Empowered Parents. <https://empoweredparents.co/clapping-games-for-kids/>
- McIlroy, T. (2020). [Toddler drawing] [Photograph]. Empowered Parents. <https://empoweredparents.co/child-development-drawing-stages/>

Meghan. (2020, October 8). *My 25 favorite songs with hand motions*. Woo therapy.

<https://wootherapy.com/my-25-favorite-songs-with-hand-motions/?v=f24485ae434a>

Meredith Corporation. (2020). [Toddler kicking a ball] [Photograph]. Parenting.

<https://www.parenting.com/activities/6-games-to-play-with-a-ball/>

Monique. (2020, March 20). *How to make homemade playdough*. Divas can cook.

<https://divascancook.com/how-to-make-homemade-playdough-recipe/#comments>

Mother Goose Club Playhouse. (2019, July 4). *Itsy bitsy spider: Mother goose club nursery playhouse*

songs & rhymes [Video]. YouTube. <https://www.youtube.com/watch?v=1A3bb3sd1tM>

Parks, S., & VORT Corporation. (1994). *HELP charts (birth to 3 years): Hawaii early learning profile*. VORT Corporation.

Robson, D. (n.d.). Pillow jumping. [Photograph]. And Next Comes L.

<https://www.andnextcomesl.com/2016/03/gross-motor-activities-for-kids.html>

Robson, D. (n.d.). Pillow throwing. [Photograph]. And Next Comes L.

<https://www.andnextcomesl.com/2016/03/gross-motor-activities-for-kids.html>

Roux, T. (n.d.). *Bilateral coordination*. OT mom learning activities. <https://www.ot-mom-learning-activities.com/bilateral-coordination.html#DevelopBilateralSkills>

Roux, T. (n.d.). *Bilateral integration activities*. OT mom learning activities. <https://www.ot-mom-learning-activities.com/bilateral-integration.html>

Your Therapy Source. (n.d.). How do you cross crawl [Photograph]. Your Therapy Source.

<https://www.yourtherapysource.com/blog1/2019/06/16/cross-crawl/>

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