

Motor planning fact sheet and activity ideas

What is motor planning?

Motor planning is the ability to conceptualize, plan, and execute an unfamiliar movement from start to finish. In order to be successful in motor planning, an individual must integrate sensory information correctly to generate coordinated movements. This can be especially difficult for students with visual impairment, as underlying sensory functions that underlie motor planning are often impacted by visual impairment or loss.

When students have difficulty with motor planning, the most important teaching tool is consistency – regular and frequent opportunities for practice, using the same technique every time, with appropriately modified tools in an environment suited to their specific needs. Through consistent repetition, the goal is to develop efficient “motor habits” that no longer necessitate the amount of energy, assistance, or time that was required before, and that can be generalized to other similar tasks.

What are the building blocks to develop motor planning?

- **Sensory Functions:**
 - **Body Awareness (Proprioception):** Information that the brain receives from our muscles and joints to make us aware of our body position and body movement, so we can accurately control our movements.
 - **Awareness of movement (Vestibular sense):** Information that the brain receives from receptors in the inner ear that indicate

movement (direction and speed) and position of the head to support balance, posture, and coordination.

- **Crossing the Midline:** The ability to use arms, legs and eyes across the midline of the body. (MIDLINE = imaginary line drawn vertically dividing the body into two equal parts).
- **Motor Skills:**
 - **Calibrates:** Uses movements of appropriate force, speed, or extent when interacting with task objects (e.g. not crushing task objects, pushing a door with enough force that it closes)
 - **Flows:** Uses smooth and fluid arm and wrist movements when interacting with task objects
- **Process Skills:**
 - **Paces:** Maintains a consistent and effective rate or tempo of performance throughout the entire task
 - **Initiates:** Starts or begins the next action step without hesitation
 - **Terminates:** Brings to completion single actions or single steps without inappropriate
 - **Navigates:** Moves the arm, body, or wheelchair without bumping into obstacles when moving in the task environment
 - **Accommodates:** Prevents ineffective task performance

Motor planning activity ideas

1. **Ball Bounce:** Bounce a ball on a flat surface, set a goal at the start of the activity (i.e. bounce 10 times in a row, 10 seconds and then stop, etc.). Experiment with size, weight, inflation, etc. Try a modified game of foursquare or basketball!
2. **Ball/Bean Bag Toss:** Ball/bean bag toss to specified target/across body, or following directions (left, right, up, down, over, under, etc.).
3. **Bowling:** To create pins, fill empty water bottles with beads, rice, beans, or sand. Try to knock down the pins by rolling a ball on the ground, away from body, or an underhand throw.
4. **High Fives/Clapping Games:** This can be as simple as a high five or as complicated as a clapping rhyme. Experiment with different heights and directions (cross body, above head, etc.) and discuss force being used: soft, medium, hard.
5. **Hula Hoop:** Experiment by holding the hula hoop horizontally with a partner, and turn your body in different directions. Try to get “untangled”.

Or, stand in a circle with a few peers and try to pass the hula hoop around the circle from one person to another while holding hands.

6. **Marching/Bouncing:** Test out different surfaces: concrete, grass, a small trampoline, or even sitting on a yoga ball. Practice marching with different amounts of force, talk about the feedback each surface provides.
7. **Obstacle course:** Navigate an obstacle course with a partner giving you spatial directions. Or, set up an obstacle course for a partner.
8. **Reaching games:** Reach for preferred items displayed at various heights/directions, or drop items in a targeted bin across body or at various locations within reach. For students with limited vision, follow verbal directions or auditory cues to find the targeted item/bin.
9. **Scooter:** Use a floor scooter to navigate a small obstacle course. Try sitting, or laying on your stomach. Experiment by pushing with hand, feet, or another tool. Follow spatial directions to avoid obstacles!
10. **Simon Says:** Play a game of Simon Says that challenges reaching across the body at different heights, turning, spinning, jumping, or transitioning from one position to another.

11. **Swings:** Encourage self-propelling on swings, hammocks, or gliders.
Experiment with different patterns of movement.

12. **Tracing:** Trace a tactile maze or path on different surfaces. Can be a large scale chalk tracing, or small pencil and paper tracing. Test out different surfaces like the floor, a wall, or a slant board.

13. **Twister:** Work on following directions and taking your time to maintain balance. This can be adapted according to physical needs, and modified into a tactile activity (i.e. apply bumpy material to red circles, apply soft material to blue circles, etc.)!

14. **Yoga:** Experiment with new or familiar yoga positions. Play a game of explaining the pose to a partner while trying to follow the directions with your body. This is a great resource for yoga ideas: <https://www.blindalive.com/>

Strategies and functional motor planning practice opportunities in daily routines:

Just about everything we do involves motor planning. Remember that the most important motor planning teaching tool is consistency! The following are some strategies that can help develop and integrate appropriate motor plans more effectively:

- **Consistency:**
 - Use explicit instruction and consistent language to continue developing good motor plans when learning new skills and sequencing novel tasks.
- **Break down task:**
 - Break down new skills into steps and give the student multiple opportunities through practice and repetition to master each of the steps before building on them.
- **Errorless learning:**
 - Introduce novel tasks with initial hand-over-hand assistance and an errorless learning approach with multiple opportunities for repetition to learn and integrate correct motor patterns and avoid over-learning incorrect patterns.
- **Fading support:**
 - Gradually fade physical support over time as the student masters each step of the skill with the given level of physical assistance.
- **Repetition:**
 - Provide multiple and consistent practice opportunities for habituation before expecting the student to generalize school skills to less structured environments.