



## Gross Motor

### Construct Progression

**DOMAIN:** Physical/Motor Development

**CLAIM:** Students can demonstrate competencies in motor skills and movement patterns.

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### Background

- Walking is a process of alternately losing balance and recovering it while moving forward in an upright position. While moving forward, the body should display little up-and down or side-to-side movement. Eventually, the arms and legs move in opposition.
- Running is an exaggerated form of walking. It differs from walking in that there is a brief flight phase during each step in which the body is not in contact with the supporting surface. Children identify and use appropriate pathways (straight, curved, zigzag) to manipulate space between self and others that include a variety of directions and levels.
- Galloping is the combination of two fundamental movements, the step and the hop, with the same foot always leading in the direction of movement.
- Skipping is the combination of two fundamental movements, the step and the hop, with the alternating feet leading in the direction of movement.

### Rationale

Piaget (1954) was one of many developmental psychologists who linked motor skill development with improvements in perceptual and cognitive development. Motor and cognitive functions tend to follow a similar timeline with intensified development between the ages of five and ten (Gabbard, 2008). Grismmer et. al. (2010) emphasize the importance of motor skill development in children. Recent research stresses the importance of facilitating both motor and academic development as the two continue to be linked in neuroscience research. When comparing gross motor skills of age matched children with and without learning disabilities, researchers found a specific relationship between reading and locomotor skills and mathematics and object control skills - the greater the learning delay, the poorer the motor skills (Westendorp, Hartman, Houwen, Smith, & Visscher, 2011). Sibley and Etnier (2003) conducted a meta-analysis showing a positive correlation between physical activity and seven categories of cognitive performance (perceptual skills, intelligence quotient, achievement, verbal tests, mathematics tests, developmental level/academic readiness, and other) among school-aged children. Crossing the midline is an important milestone of development, reflecting integration of the bodily midline which allows for bilateral coordination (Stilwel, 1987), as seen in walking, running, galloping and skipping. Difficulty crossing the midline has been linked to a cluster of sensory, perceptual and motor difficulties exhibited by some children with learning exceptionalities (Ayres, 1972; Michell & Wood, 1999; Stilwell, 1987; Murata & Tan, 2009). Previous research suggests that failure of child between the ages of three and four, to cross the midline could predict later potential problems in development (Michell & Wood, 1999).

## Gross Motor

Skills	Performance Descriptors	Example
A. Walks on a flat foot or walks on the toes.	When walking, child either places the entire foot flat on the ground (doesn't hit ground first with heel and then roll onto ball of foot) OR walks on the toes/ball of the foot (toe walks). Child may walk with feet held wide apart and appear unsteady while walking.	<i>When walking across the classroom, Malik places his entire foot flat on the ground. His foot doesn't hit ground first with his heel and then roll onto ball of foot. Malik's feet are wide apart and he walks unsteadily.</i>  <i>Jeni is regularly observed walking on her toes. As she walks, she appears unsteady.</i>
B. Walks by distributing weight from heel to toe WITHOUT arms and legs moving in opposition.	When walking, child's heel hits the ground first and then rolls onto the ball of the foot BUT child's arms DO NOT swing in opposition with the legs (arms may instead be used for balance or guarding).	<i>When walking, Kathy's heel hits the ground first and then rolls onto the ball of the foot. Her arms do not swing in opposition with her legs and instead are held out to the side to help her balance.</i>
C. Walks by distributing weight from heel to toe WITH arms and legs moving in opposition.	When walking, child's heel hits the ground first and then rolls onto the ball of the foot AND child's arms swing in opposition with the legs (when child takes a step forward with the left leg, the right arm swings forward; when child takes a step forward with the right leg, the left arm swings forward).	<i>When walking, Logan's heel hits the ground first and then rolls onto the ball of the foot. His arms swing in opposition with his legs.</i>
D. Maintains balance and control when running.	When running in an open space free of obstacles, child demonstrates balance and control (e.g., runs without falling).	<i>Thuy runs across the blacktop to meet her friend who just arrived at school. Her running is controlled and she doesn't lose her balance or fall.</i>
E. Maneuvers around objects and people while running.	When running, child moves in different pathways (e.g., changes directions, starts or stops) to avoid bumping into objects or other people.	<i>While playing tag on the playground with a group of children, Muhammad runs around the other children and playground equipment to avoid getting tagged.</i>
F. Emerging galloping skills.	Child demonstrates emerging galloping skills: holds arms stiffly, takes short steps, jumps high off the ground, and movements are stiff and arrhythmic	<i>Monique is showing emergent galloping skills. She takes short steps, jumps high off the ground, and holds her arms stiffly. Her movements are stiff and arrhythmic.</i>

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Skills	Performance Descriptors	Example
G. Gallops smoothly.	Child gallops smoothly: takes longer steps, does not jump as high off the ground, swings arms at sides freely, and movements are smooth and rhythmical	<i>When Ethan gallops around the playground, he takes long steps, jumps low off the ground, and swings his arms freely. His movements are smooth and rhythmical.</i>
H. Hops forward smoothly on one foot.	Child maintains balance and control while hopping forward on one foot: hopping is rhythmic, arms are held out to the side for balance, landing is balanced.	<i>When coming in from recess, Chun hops on one foot across the hopscotch grid painted on the blacktop. She hops smoothly and does not lose her balance.</i>
I. Skips smoothly.	Child skips smoothly: movements are smooth and rhythmical and the arms and legs move in opposition	<i>As Harrison skips around the playground, his arms and legs move in opposition with each other. His movements are smooth and rhythmical.</i>

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