Locomotion Skills

• Walking
• Running
• Horizontal Jump
• Hopping
• Skipping
Walking

Progressive alternation of leading legs and continuous contact with the supporting surface.

Walking cycle or Gait cycle involves to two phases:

- Swing phase
- Support phase
Immature Walk

Short stride,
Quick stride,
Rigid steps,
Toes pointed outward,
Flat footed contact with ground,
and Base of support is wide.
Interesting Facts

Walking solo typically begins between 9 and 17 months of age.
As balance improves, the base of support narrows. Degree of toe-out decreases as we become more efficient.
Toe-in foot angle is considered to be abnormal.
Until one gains sufficient neuromuscular control, he or she will take more steps per unit of time to increase walking speed.
Book bags or backpacks weight should not exceed 10% of body weight in young children.
Walking Criteria

Teachable Points
1. Head is up and eyes looking in the direction of walking
2. Body and limbs move in a straight line in the direction of the movement
3. Feet are straight when in contact with the ground
4. Arms are slightly bent at the elbow
5. Hands are relaxed.
6. Arms drive actively in opposition to the swinging leg.
7. Child or adult lands on the heel, then moves up onto the toes.

Walking Faults
1. Steps taken are too short.
2. Feet turned too far outward.
3. Walking on toes instead of heel-toe movement.
4. Landing too heavily.
5. Arms not moving in opposition to the legs.
6. Hands clenched in a fist.
7. Head moving and the eyes not facing forward.
8. Jerky walking action
Running

Has a period of flight when neither foot is touching the ground.

The patient or child needs lower limb strength both to propel themselves through the air and to when the foot strikes the ground.
Run

Consists of three phases:
1. The support phase
2. The flight phase
3. The recovery phase
Interesting Fact About Running

Boys run faster than girls at all ages.

Girls running speed peaks at 14 to 15 years of age whereas boys running speed continues beyond 17 years of age.

Children exhibit minimal running form 6 to 12 months after the onset of solo walking.

Insufficient hip flexion causes the thigh from forming a right angle with the body's trunk.
Running

Teachable Points
1. Head remains up, with eyes looking forward in the direction of the movement.
2. Feet and legs move in a straight line in the direction of movement.
3. Arms are bent 90 degrees at the elbow.
4. Arms drive actively in opposition to the legs.
5. Knee lift is close to right angles during the recovery phase.
6. Both feet are off the ground for a brief time.
7. Body is leaning slightly forward.

Running Faults
1. Poor drive and push off the forefoot.
2. Length of the step is too small.
3. Legs and arms not moving straight forward, but outward, or across the body, causing too much upper body movement.
4. Flat-footed running
5. The foot being placed on the ground pointing outward.
6. Non-support leg does not flex sufficiently toward the buttock; therefore the knee lift becomes too low.
7. Trunk too upright or too far forward.
8. The arms are not flexed enough.
9. Arms not moving in opposition to the legs.
10. Head moving and eyes not facing forward.
Jump

Fundamental movement that occurs when the body is projected into the air by force generated in one or both legs and the body lands on one or both feet.
Interesting Fact about Jumping

Preparatory movements are necessary for execution of horizontal and vertical jumps. Inexperienced jumper have very little extension of the body segments. The most effective angle of takeoff in horizontal jumps is 45 degrees. Experienced jumpers land with their heels where as inexperienced jumpers lands stiff-legged. By the age of 5 the child can perform the horizontal and vertical jumps.
Horizontal Jump

Teachable Points
1. Head up with eyes looking upward.
2. Arms extended behind the body as the knees and ankles bend.
3. At the same time, upper body bends forward at the hips.
4. Legs extend forcefully.
5. Jump is evenly off both feet.
6. The arm action is strong and synchronized with the leg action.
7. Body extended upward and forward.

Horizontal Jump Faults
1. On landing, head is up with eyes looking forward.
2. On landing, lean slightly forward at the hips.
3. Arms are held out in front or to side of body to assist balance.
4. Land on balls of both feet and then roll back onto flat feet.
5. Ankles, knees, and hips bend to absorb force.
6. Feet should be shoulder-width apart.
Horizontal Jumping Landing

Teachable Points of Landing
1. Jumping more off one foot than the other
2. Push with the legs is not quick or strong enough.
3. Not leaning forward prior to take-off.
4. Weak arm action.
5. Arms not swung up and forward.
6. Arms not synchronized with leg action.
7. Incorrect take-off angle
8. Head down and eyes not looking forward.

Landing Faults
1. Landing flat-footed
2. Feet too close together
3. Knees too straight
4. Dropping head causing rotation and loss of balance.
Hopping

Form of jumping in which one foot is used to project the body into space and subsequent landing is on the same propelled foot.
Interesting facts about hopping

Hopping is performed better on the preferred foot as opposed to the non preferred foot.

Girls are more developmentally advanced than boys

Mature hopping occurs after the age of 5
Hopping consists of two criteria:

Leg Action
1. Momentary flight
2. Fall and catch; swing leg inactive
3. Projected takeoff; swing leg assist
4. Projection delay; swing leg leads

Arm action
1. Arms inactive and held high and out to the side.
2. Arms pump up and down briefly
3. The arm on the side opposite the swing leg swings forward with the leg and back as the leg moves down.
4. The arm opposite the swing leg move forward and upward in synchrony with the forward and upward movement of the leg.
Developmental Sequences of the hopping

Teachable points of Hopping
1. Head remains up and still with the eyes looking forward.
2. Knee of the non-support leg swings to produce force
3. The foot is held behind the body.
4. Arms bent a 90 degrees more actively in opposition to the driving leg.
5. Take-off and landing are on the forefoot.
6. Weight moves from the forefoot to the heel on landing.
7. Hopping leg bends to absorb the landing force.

1. Hopping Faults
2. Landing flat-footed or staying on the toes.
3. Taking off flat-footed.
4. Non-support leg too low.
5. Poor leg drive.
6. Leaning too far forward and sideways.
7. Excessive upper body movement.
8. No arm drive.
9. Head moves or the eyes are looking downward
Skipping

Consists of forward step followed by a hop on the same foot. There is alternation of the lead leg with an uneven rhythmic pattern.
Interesting facts about skipping

If you cannot hop; you cannot skip.
Girls are more advanced that boys.
If you cannot balance; you cannot skip.
One usually skipping around 6 or 7 years of age.
Skipping is more difficult than galloping.
Skipping

Skipping consists of two criteria:
Leg action
Arm action
Skipping

Teachable Points of Skipping
1. Head remains up with eyes looking forward during the action.
2. Step-hop is evident.
3. Height and distance of steps and hops are consistent.
4. Body lean is correct.
5. Landing is on the forefoot.
6. Arms move in opposition to the legs.

Skipping Faults
1. Landing flat-footed and heavy.
2. Inconsistent heights and distances of hops and steps.
3. Swing leg too high off the ground.
4. Poor balance
5. Too much forward lean of the body.
6. Arms not synchronized in opposition with the legs.
7. Moving the head during the action
Locomotion Activities

Develop Analytical Rubrics for the:
1. Run
2. Horizontal jump
3. Skip

Divide into groups of 3 for each computer. Use Health star Manager to develop each rubric.
Developmental Sequence for Running

Using Table 13-3 of your text develop a analytical rubric of running.

Two performance criteria

Leg action Component
Arm action Component
Using Table 13-5 of your text develop an analytical rubric for horizontal jumping.

Two performance criteria

- Takeoff phase
- Flight and landing phase
Developmental Sequences of Skipping

Using Table 13-10 of your text develop an analytical rubric for Skipping.

Two performance criteria

Leg Action
Arm Action