

# Kinesiology: Core Concepts

## Task Sheet for Learning about Force

### Definitions:

Force may be increased by:

- Increasing the range of movement of the body segments imparting force
- Utilizing sequential movement of the muscles of the body
- Utilizing a follow-through
- Increasing the distance through which the force is applied
- Using the strongest muscles and all possible muscles available for a task
- Maintaining firm contact with the base of support.

### Learning Activities:

- Throw a softball in each of the following ways and *note how far it goes*:
  - With only wrist action, no arm or body action
  - From a sitting position with your legs in a stride position, no trunk twist
  - From a kneeling position with a good twist of the trunk
  - Standing still, face the direction of the throw
  - Step forward on the right foot and throw the ball
  - With the body weight on the right foot to begin with, shift to the left foot as the ball is thrown (right-handed throw)
  - Stand with the left side toward the direction of the throw, with feet apart; step into the throw, using a full arm swing and body twist and a follow-through
  - Jump and throw the ball.

**Question:** Which throw went the farthest? Why?

- Stand still and kick a soccer ball. Note how far it goes.
- Kick the soccer ball by stepping into the kick. Note how far it goes.

**Question:** Which ball went farther? Why?

- Do a standing broad jump without using the arms. Note the distance of the jump.
- Do a standing broad jump using the arms. Note the distance of the jump.

**Question:** Which jump was farther? Why?

- Jump as high as possible with both hands held above the head. Note the height of the jump.
- Stand next to a wall. Jump as high as possible holding both hands against the chest and then reach with one hand. Note how high the one hand was able to reach.
- Jump throwing both arms upward with the jump. Note the height achieved.
- Step into the jump and simultaneously throw the hands upward. Note the height.

**Question:** Which method resulted in the highest jump? Why?