

## UNIT 5 - MUSCULAR SYSTEM

### ACTIVITY - Muscle Mania

#### **Objectives:**

Students will learn the three different types of muscles and their functions. They will learn basic anatomy and how muscles, particularly the bicep and tricep, function in relationship to bones. Students will perform an experiment on the relationship between muscle size and muscle fatigue.

#### **Materials Needed:**

Students will work in groups of three

Markers

Crackers or something simple to eat

Gallon milk jugs filled with water - weight approx. 8 lbs.

Tape measures for each group

#### **Strategy:**

Student groups will demonstrate movements that the three types of muscles cardiac, smooth and skeletal enable the body to perform.

One student-demonstrator will jump up and down (skeletal-large muscles), frown (skeletal-small muscles), and swallow (smooth).

Discuss the continuous beating of the heart (cardiac), and introduce the concept of voluntary (skeletal) and involuntary (cardiac, smooth) control.

Discuss contraction and relaxation and have each student perform different types of contraction (tonic, isotonic, isometric).

Students should have a basic understanding of muscle anatomy, they will perform an experiment on the relationship of muscle size to muscle fatigue.

Remaining in their groups, students will measure each other's bicep muscle by making a muscle, palpating the boundaries, and measuring between the boundaries. Chart the measurements.

One student will pick up the gallon jug with his/her dominant hand, hold it by the handle, and lift the jug up and down, keeping the elbow as close to the waist as possible. To ensure uniformity, the student will recite, "Mary had a little lamb, little lamb, little lamb, Mary had a little lamb who's fleece was white as snow," while lifting the weight to the shoulder on "little" and bring the weight down towards the thigh on the word "lamb". This should be done in a rhythmic manner. Be sure to tell the students not to rest between flexion and extension.

Muscle fatigue will occur when the person is unable to lift the jug. Another student will count and chart the number of lifts, and measure the muscle after exercise.

When all the groups have finished charting and exercising, they will discuss and decide if larger muscles fatigue more or less quickly than smaller muscles. They should also note the change in muscle size before and after exercise.

Come together as a class and discuss the results. Ask questions concerning factors which make muscles stronger, e.g. diet, general physical condition, etc.

Muscles fatigue and change in size when a person exercises. Muscle size may/may not have anything to do with strength.