

## **Grade 4: Muscles and Self-Esteem**

### **Lesson 9: Feeling Strong: Your Muscles**

#### **Objectives:**

- ✓ Students will identify physical activities that make us feel strong.
- ✓ Students will identify strength-building activities.
- ✓ Students will formulate a plan for healthy exercise to increase muscle strength.
- ✓ Students will define muscles and building muscles.

#### **Materials:**

- Pictures of different forms of exercise
- Paper and pencil
- Weekly Exercise Training Plan (**See Figure 1**)
- Activity Tracking Chart (**See Figure 2**)

**Note to the Teacher:** This activity builds on the Exercise lesson and is best done after the Exercise lesson has been completed. Because this activity asks students to track information over time, you may wish to continue the activity in the Evaluate section beyond the close of the unit.

#### **Activity Summary:**

Students will examine what physical activities make them feel strong and will create a personal exercise plan for building muscle strength, endurance, and flexibility.

#### **Background Information for the Teacher:**

Students often equate **strength** primarily with activities like lifting weights, and may not appreciate the health benefits of some of their everyday activities such as running, jumping, and playing sports. All of these activities contribute to overall strength and coordination. The point of this lesson is to help students think about the benefits of engaging in strength-building exercise throughout their lifetimes.

Exercise falls into several categories in terms of the way it contributes to overall strength and health. Exercises such as push-ups, pull-ups, and lifting weights increase the force with which the muscles operate. These are the classic “strength” exercises that we think of when we see weight lifters or muscular gymnasts.

Overall strength also includes flexibility and endurance.

**Flexibility** measures the degree to which our muscles can stretch easily. Exercises such as yoga, gymnastics, and other stretching exercises increase flexibility.

**Endurance** measures the ability of our muscles and cardiovascular system to engage in high levels of activity over a period of time. This kind of exercise makes the heart muscle work hard. Exercise such as running, jogging, walking, swimming, and dancing builds endurance and helps the cardiovascular system.

Exercises such as swimming and dancing actually help **all** areas—**strength, flexibility, and endurance.**

This lesson will help students focus on the ways in which they can increase their own strength and feel strong and healthy. If you are dealing with students who are differently-abled—especially those in wheelchairs or with other physical challenges, you can still find ways that each person can build their own strength. For example, students who are confined to a wheelchair may be able to do arm strengthening exercises. Always check with the health-care provider and parent or guardian in these cases. Help each student develop a plan for their own personal strength goals. The point is to help each student feel as strong and healthy as they can.

Also, if students are able to practice strength-building activities consistently for at least a month, they may be able to retain that habit into adulthood. It takes approximately 30 days of daily repetition for something to become a habit.

**Vocabulary:**

Muscles  
Strength  
Flexibility  
Endurance

**Engage** (7-10 minutes):

Give each student a piece of paper. On the piece of paper have the students write a physical activity that they enjoy. Tell them to crumple up their piece of paper and play “snowball.” Let the students throw their “snowballs” around the room for about 30 seconds, then have each student pick up a “snowball” (it does not necessarily have to be the one they had or

Ask the students to help define the difference between an endurance, flexibility, and strength activity. Write a brief definition on an overhead or directly on the board, then have students take turns standing up and reading what the physical activity is on their “snowball.” Next, have the students identify what category of activity (endurance, flexibility, or strength) each activity falls under and why. Write the activities under the appropriate headings on the board.

**Explore** (20-25 minutes):

Have the students work in groups of four. Have each group pick a physical activity (such as playing softball, volleyball, dancing, bicycling, running, etc.). Tell each group they are going to coach another student to be the most fit in that activity. Students are to create a Weekly Exercise Training Plan which includes the **type** of physical activity (endurance, strength, and flexibility), the **frequency** and the **amount of time** they want their student to do that activity.

Have the students create their own Training Plan format or use this table (**See Figure1**):

**Weekly Exercise Training Plan  
for (name of physical activity)**

	<b>Endurance Activity &amp; Time</b>	<b>Strength Activity &amp; Time</b>	<b>Flexibility Activity &amp; Time</b>
<b>Monday</b>			
<b>Tuesday</b>			
<b>Wednesday</b>			
<b>Thursday</b>			
<b>Friday</b>			
<b>Saturday</b>			
<b>Sunday</b>			

Each group should discuss and record 1) their rationale for the activities in their Plan; and 2) why their Plan will best prepare someone to do the physical activity.

Have each group present their Training Plans to the class and explain why they chose that plan.

**Explain** (10-15 minutes):

Help students understand the effects of different kinds of exercise movement on muscle development and health. Ask: **“Why should we do DIFFERENT kinds of exercise?”**

Put the outline of this table on the board, leaving the spaces under the three top row headings blank. Ask questions so students give you the information that you write in the boxes. If they give information that is not correct, provide instruction so they have an accurate understanding.

	<b>Endurance</b>	<b>Strength</b>	<b>Flexibility</b>
<b>Impact on muscles and the body</b>	Increases oxygen consumption. More blood to the cells	Muscle cells increase in size; more blood to the cells.  Strengthens heart muscle.	Muscle filaments lengthened.
<b>Benefit</b>	Strengthens the bones. Helps with weight control.	Improves overall heart rate, promotes better breathing.	Promotes balance and ease of movement at the joints.

**Evaluate**

1. Each day during the course of the unit or during a particular time period (a minimum of two weeks) have students record the physical activities they have engaged in. Also, have students create an Activity Tracking Chart (or print **Figure 2**--example below.) This is similar to the Weekly Training Plan charts they made in the Explore section. Add rows to record: **Total Time, Goal, and Progress.**

**Activity Tracking Chart**

	<b>Endurance</b> Activity & Time	<b>Strength</b> Activity & Time	<b>Flexibility</b> Activity & Time
<b>Monday</b> (date)			
<b>Tuesday</b> (date)			
<b>Wednesday</b> (date)			
<b>Thursday</b> (date)			
<b>Friday</b> (date)			
<b>TOTAL TIME</b>			
<b>GOAL</b>			
<b>PROGRESS*</b>			

\*Met Goal, Exceeded Goal, Did Not Meet Goal

2. Every day have the students record their activities for the previous day on the chart. At the end of the week have the students review their Tracking Charts to see if they are meeting or exceeding their own goals.
3. Discuss with the students the usefulness of goal setting, adjusting goals when necessary, and continuing to work on goals to make positive change and progress.
4. Have the students re-evaluate their goals, then set up a new tracking chart for the following week. Review again at the end of the second week. As appropriate, continue this activity throughout the unit.

## **Missouri Standards:**

### **Health:**

- I. Functions and Interrelationships of Systems
  - A. Body System
 

What all students should know:

    5. The Muscular System provides humans with the ability to move and perform a variety of tasks.

What all students should be able to do:

    - a. Plan effective oral and written communications regarding the body systems, their structure and functions for parents and other students.

- V. Physical Activity and Lifetime Wellness
  - A. Personal Fitness/Wellness

What all students should know:

1. Gaining basic knowledge of the components of health-related fitness is essential to understanding that exercise contributes to good health.

What all students should be able to do

- a. Identify the components of health-related fitness and relate their importance to individual well-being.

What all students should know

3. There are physiological signs associated with engagement in rigorous physical activity.

What all students should be able to do

- b. Recognize the physiological indicators that accompany moderate and vigorous physical activity.

What all students should know:

4. Health-related fitness testing is conducted for personal fitness assessments.

What all students should be able to do:

- a. Demonstrate an improved or acceptable level of performance on a health-related fitness test.
- b. Associate results of fitness testing to personal health status and the ability to perform various activities.

**Figure 1**

**Weekly Exercise Training Plan**  
For *(name of physical activity)*

	<b>Endurance Activity &amp; Time</b>	<b>Strength Activity &amp; Time</b>	<b>Flexibility Activity &amp; Time</b>
<b>Monday</b>			
<b>Tuesday</b>			
<b>Wednesday</b>			
<b>Thursday</b>			
<b>Friday</b>			
<b>Saturday</b>			
<b>Sunday</b>			

**Figure 2**

### Activity Tracking Chart

	<b>Endurance</b> Activity & Time	<b>Strength</b> Activity & Time	<b>Flexibility</b> Activity & Time
<b>Monday</b> (date)			
<b>Tuesday</b> (date)			
<b>Wednesday</b> (date)			
<b>Thursday</b> (date)			
<b>Friday</b> (date)			
<b>TOTAL</b> <b>Time</b>			
<b>GOAL</b>			
<b>PROGRESS*</b>			

\*Met Goal, Exceeded Goal, Did Not Meet Goal