

LESSON 2 : MAKING THE MOST OF YOUR MOVEMENT



OVERVIEW

In this lesson, students learn about four recommended aerobic and anaerobic physical activity types including cardiovascular-strengthening, muscle-strengthening, bone-strengthening, and flexibility. They are also provided with supporting resources on how food is converted into energy to fuel physical activity for further exploration.

TIME

One 45-minute class

OBJECTIVES

In this lesson, students will:

- Describe four types of physical activity;
- Categorize different physical activities by type; and
- Reflect on their own levels and types of physical activity.

STANDARDS

NGSS

MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.

MS-LS1-7. Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.

MS-LS1-3. Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.

CASEL FRAMEWORK

SELF-AWARENESS: The abilities to understand one's own emotions, thoughts, and values and how they influence behavior across contexts. This includes capacities to recognize one's strengths and limitations with a well-grounded sense of confidence and purpose. Such as:

- Having a growth mindset

SELF-MANAGEMENT:

- Setting personal and collective goals
- Using planning and organizational skills

CDC NHES

1.8.1 Analyze the relationship between healthy behaviors and personal health.

1.8.3 Analyze how the environment affects personal health.

MATERIALS

This lesson requires no additional materials beyond common classroom materials and an Internet connection.

PREPARATION

No advance preparation is needed.

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INTRODUCTION

Explain to students that they will be exploring different types of physical activity and the ways in which each affects your body. Take an anonymous poll with students. Give each student a slip of paper. Ask them to describe their own perceived level of weekly physical activity on a scale of 1 to 5, with 5 being the most active and 1 being the least active. Then, have them identify a physical activity they do at least weekly. Collect and tally the responses. List each type of physical activity the students participate in at least weekly.

1: LEAST ACTIVE	2: SOMEWHAT ACTIVE	3: MODERATELY ACTIVE	4: VERY ACTIVE	5: MOST ACTIVE

LESSON PROCEDURE

Step 1

With the students, discuss the list of physical activities the class participates in. (Note: At this point, many of the activities will be sports which you will focus on first). Ask students to think about the Olympics. Ask them to add to the list any Olympic events that they can think of.

Step 2

Explain to the students that Olympic athletes, while all very healthy and fit, have different skills based on their training and sport. Some athletes focus on building strength. Others focus on building speed or endurance. Some train to build flexibility and balance.

Step 3

Explain that physical activities can be either aerobic (making use of oxygen) or anaerobic (does not require oxygen). Explain that you will be exploring four types of physical activity that can be aerobic or anaerobic: Muscle-strengthening, Bone-strengthening, Cardiovascular-strengthening, and Flexibility.

Explain:

- **Muscle-strengthening activities** use resistance to build muscle and increase strength. Resistance can be in the form of a weight, stretchy band, bicycle

pedals, or even a hill when hiking. Muscle-strengthening activities help your muscular system by maintaining muscle mass.

- **Bone-strengthening activities** are usually weight-bearing exercises such as jumping, climbing, and hiking while carrying a backpack. Bone-strengthening activities help your skeletal system by increasing bone density.
- **Cardiovascular-strengthening activities** are those that get your heart rate up and make you breathe more heavily. These include running, biking, swimming, or dancing. These activities help your cardiovascular system and increase speed and endurance.
- **Flexibility activities** are those that involve stretching and lengthening your muscles. These include yoga, stretching, and tai chi. Flexibility activities help many systems and can improve your balance and help protect you from injury.

Step 4

Ask students to look at the list of Olympic events. Ask them which type of activity each event is. Allow them to debate each event (for example, some students may think that bicycling is a muscle-strengthening type of activity while others think it is an aerobic activity). Explain to students that most physical activities

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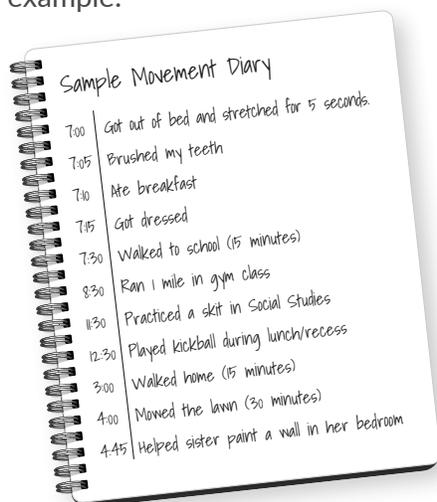
actually target more than one body system. Continue through the list of activities previously mentioned.

Step 5

Revisit the list of activities that the students participate in at least weekly. Ask the students if they can think of any other physical activities that are muscle-strengthening, bone-strengthening, cardiovascular-strengthening, or develop flexibility. Tell students that physical activity comes in many different forms. You don't have to be an Olympic athlete to strengthen muscles, strengthen bones, build endurance or speed, or increase your flexibility. Similarly, you don't have to play a sport to improve your health through physical activity.

Step 6

Ask students to think about yesterday. Ask them to list every time they moved their bodies (except for walking very short distances). Have them start with when they woke up and continue until they went to bed. For example:



Step 7

Then, have students go through each item on their list and determine if the activity could be considered a muscle-strengthening, bone-strengthening, cardiovascular-strengthening, or flexibility type of activity. For example, when the student above helped to paint

a wall, she may have also been stretching and increasing flexibility. When she mowed the lawn, she was using resistance (the lawn mower) and building muscle strength. If her heart rate increased during her walk to or from school, she was performing a cardiovascular-strengthening activity.

Step 8

Discuss with the whole class:

- Do you think any of the four types of activities are more important than the others?
- Why is it important to take part in a variety of physical activities?
- Are some activities more challenging to you than others?
- How do the four types of activities affect human growth?
- Think of the body as many different interacting systems. How might not doing one type of activity affect your body's systems?

ASSESSMENT

Ask students to think of four activities that they could do for 10-15 minutes each week (in addition to their other activities) to increase their muscle strength, bone strength, cardiovascular strength, and flexibility.

EXTENSIONS

- Encourage students to participate in student-organized activity clubs.
- If students are interested in the science behind how food converts to energy in the body, have them explore these resources:
 - [This Is How Your Body Turns Food Into Energy](#)
 - [Cellular Respiration](#)
 - [ATP: Adenosine triphosphate \(video\)](#)