

GRADE 6: LESSON PLAN 3

EXERCISE: WHAT KINDS OF ACTIVITIES ARE BEST?

Goals

Students will understand the benefits from involvement in daily physical activity and the factors that affect physical performance.

Instructional Objectives

Students will be able to

1. Describe selected long-term benefits of regular physical activity.
2. Classify activities as being aerobic or anaerobic.
3. Describe the effects of aerobic exercise on the heart and overall health.

Background Information

When you exercise, muscles contract because nerves send electrical signals to the muscles. The contracting muscles use increased amounts of oxygen and nutrients (such as glucose) and release increased amounts of waste (such as carbon dioxide). This activity results in an increased demand for blood flow to the muscles. People who regularly participate in exercise benefit from that increased circulation. Active people have a healthier heart and lungs, stronger muscles and bones, a leaner body, think more clearly, have better self-esteem, and maintain a more positive outlook on life.

Aerobic exercise, also known as cardiovascular exercise, uses the large muscles, makes your heart beat faster, and makes you breathe hard. It can be continued for long periods of time because the body is able to keep up with the oxygen demands of the activity. This type of exercise drives your body to use oxygen more efficiently and delivers maximum benefits to your cardiovascular system (heart and blood vessels) and pulmonary system (lungs), therefore improving exercise endurance. This type of exercise is very important for keeping your heart healthy and can be done by everyone without special training. Examples include: walking, jogging, biking, swimming, dancing, rollerskating or rollerblading, or jumping rope.

Anaerobic exercise is one that is done quickly for short periods of time. This kind of exercise is done at the maximum level (for example, running at top speed), with rapid deep breathing making speaking difficult. The body cannot keep up with the oxygen demands of the activity so it can only sustain short bursts. Anaerobic activity improves muscle and joint strength, improves agility, and increases muscle tone. Examples include engaging in team sports such as football, basketball, baseball, soccer, volleyball; individual sports such as tennis or track and field; and fitness activities such as strength training or weight lifting.

A balance of both kinds of exercise provides maximum benefits for heart health and overall physical fitness throughout life. Many activities incorporate elements of both aerobic and anaerobic exercise.

Introduction

This lesson is about teaching students the life-long benefits of exercising to improve their cardiovascular system, overall strength, agility, and wellbeing.

Procedures

1. Begin the lesson with a review of what happens in the body when we exercise. Define the terms aerobic and anaerobic as they pertain to exercise. Ask students to provide

GRADE 6: LESSON PLAN 3

EXERCISE: WHAT KINDS OF ACTIVITIES ARE BEST?

examples of aerobic and anaerobic exercise. During the discussion make a list of every exercise or activity they mention. Then divide the list into two categories: activities considered primarily aerobic and activities considered primarily anaerobic. Reinforce the differences between the two and clarify how some activities can have elements of both.

2. To help students quickly understand the difference, show a video of soccer players during a game. Ask students to determine when the players are performing aerobic exercise and when they are performing anaerobic exercise.
3. Discuss the principles of aerobic (cardiovascular) exercise. Explain what happens in the muscle during aerobic exercise. The muscle has a source of oxygen during aerobic exercise; the heart and lungs are able to keep up with the muscle's requirements. During a 60-minute walk, 40% of the muscle's energy comes from carbohydrates. Since protein and fat require oxygen for combustion, and aerobic exercise does not limit oxygen, 55% of the energy burned comes from fat, and 3-5% comes from protein. This is why people who want to lose weight and strengthen their cardiovascular systems walk or jog instead of sprint. Remind students that cardiovascular health is dependent on consistency: they must consistently eat a well-balanced diet, and consistently participate in physical activities to stay healthy and physically fit.
4. Discuss the principles of anaerobic exercise. Explain what happens in the muscle during anaerobic exercise. The muscle does not have a constant source of oxygen because the heart and lungs are not able to keep up with the requirements. During a sprint, 70% of the energy comes from glycogen (carbohydrate), 15% from fat, and 5-8% from protein. Glycogen is a type of carbohydrate stored in muscle cells and in the liver that provides quick energy to the muscles during extreme exercise. The body stores 1600–1700 calories of carbohydrates (glycogen). When stores run low they must be replaced or the person might "hit the wall," which is a term used when the muscles completely run out of glycogen and another fuel (usually carbohydrates) must be burned for energy. Trained long-distance runners can usually run for about 20 miles before hitting the wall and running out of glycogen stores.

Group activity

Divide students into research groups. Ask them to choose an activity from the list and research the following questions as they pertain to their choice of activity:

- a. Is it anaerobic or aerobic? Why?
- b. Which muscle groups does the exercise employ?
- c. What do you need to perform the exercise?
- d. What benefit does it provide for the body and, in particular, for the heart?

Students may prepare a live demonstration, a PowerPoint presentation, a slide show, or a video. The presentation should incorporate pictures or videos of children performing the exercise they've chosen, along with the research findings. Give students a guideline for how long the presentation should be, then plan class time during which each group can share their results with the class.

Independent practice

I. Define the following terms and then design a crossword puzzle using all of the terms.

- | | | |
|--------------|-------------------|--------------|
| 1. muscle | 6. cardiovascular | 11. fat |
| 2. exercise | 7. glucose | 12. water |
| 3. aerobic | 8. glycogen | 13. energy |
| 4. anaerobic | 9. carbohydrate | 14. calories |
| 5. heart | 10. protein | 15. oxygen |

II. Ask students to research and report on the following topics:

1. List and discuss 4 health benefits of aerobic exercise.
2. List and discuss 4 health benefits of anaerobic exercise.
3. What aerobic exercises can both young people and adults do together?
4. Why is aerobic exercise beneficial throughout life?

Adaptations

For those students who are physically challenged and can't walk, plan to have a parent volunteer or classroom aide available to assist with alternative exercises.

Extension

For those students motivated to learn more, ask them to write a report and present their findings to the class on one or both of the following questions (or questions they choose):

- Does the heart get tired during exercise?
- Can the heart run out of fuel or oxygen during exercise?

GRADE 6: LESSON PLAN 3

EXERCISE: WHAT KINDS OF ACTIVITIES ARE BEST?

Assessment

| Objective | Demonstrated lesson objective | Partially demonstrated lesson objective | Did not demonstrate lesson objective |
|---|--------------------------------------|--|---|
| Describe selected long-term benefits of regular physical activity. | | | |
| Classify activities as being aerobic or anaerobic. | | | |
| Describe the effects of aerobic exercise on the heart and overall health. | | | |