

LESSON 2: TRAINING PRINCIPLES

Grade-Level Outcomes

Primary Outcome

Fitness knowledge: Identifies the different energy systems used in a selected physical activity (e.g., adenosine triphosphate and phosphocreatine, anaerobic glycolysis, aerobic). (S3.H8.L2)

Embedded Outcome

Movement concepts, principles & knowledge: Applies the terminology associated with exercise and participation in selected individual-performance activities, dance, net/wall games, target games, aquatics and/or outdoor pursuits appropriately. (S2.H1.L1)

Lesson Objectives

The learner will:

- review and apply the seven principles of exercise and sport training to selected multi-sport events.
- describe energy systems and their role in training for the triathlon.
- complete an activity to illustrate the use of the anaerobic energy system.
- complete an activity to illustrate the use of the aerobic energy system.

Equipment and Materials

- Chart paper or whiteboards
- Markers
- Gym gear
- Stopwatch

Introduction

Today, we will review essential training principles and energy systems for multi-sport events. We also will test what our bodies do and feel like when using different energy systems. Who can give an example of a training principle?

Instructional Task: Seven Training Principles

■ PRACTICE TASK

Divide the class into seven groups; assign one principle to each group. Have each group come up with their own definitions of what their principle means as applied to training for a multi-sport event.

1. Individuality
2. Specificity
3. Progression
4. Overload
5. Adaptation
6. Recovery
7. Reversibility

EMBEDDED OUTCOME: S2.H1.L1 This task is a good opportunity to review the terminology as well as the training principles. Have students write their descriptions on chart paper or whiteboards. Lead discussions on student responses. Create a form listing all principles of training. Students can fill in the characteristics and definitions of each principle during presentations.

Guiding questions for students:

- What examples can you give of the different principles as they apply to training for a multi-sport event?
- Does each of these principles play an equal role during training?
- Which of these principles plays a larger role than another when training for a triathlon?

Student Choices/Differentiation

Allow students to use a device to search for information if they need it.

What to Look For

- All students are contributing to the group activity.
- Students are able to define the principles correctly.
- Students are applying the principles appropriately to the selected multi-sport event.

Instructional Task: Anaerobic and Aerobic Energy Systems and Their Role in Training Programs

■ PRACTICE TASK

Have students perform two or three anaerobic activities.

Have students perform one aerobic activity.

Provide an overview of energy systems used in physical activity.

Guiding questions for students:

- How did you feel completing each of the activities?
- What roles do the heart, lungs, and muscles play during training?
- Does anaerobic training have a place in our multi-sport training plan?
- How does aerobic training fit into our event?

Student Choices/Differentiation

Provide examples of appropriate activities if students are struggling for ideas:

- Anaerobic activity:
 - 100-meter sprint or equivalent activity (swimming, spin bike, elliptical)
 - 200-meter sprint or equivalent activity (swimming, spin bike, elliptical)
 - 400-meter sprint or equivalent activity (swimming, spin bike, elliptical)
- Aerobic activity:
 - 800-meter run or equivalent activity (swimming, spin biking, elliptical training)
 - 1500-meter run or equivalent activity (swimming, spin bike, elliptical)

What to Look For

- Students are engaging in productive conversations.
 - Students are asking questions and giving correct examples.
 - Students are selecting appropriate activities for the energy systems identified.
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Formal and Informal Assessments

Principles of training definitions form

Closure

- Training for an event involves many different training principles and understanding your energy systems. You need to use this knowledge to gain maximal results.
- What are the primary energy systems?
- What are the seven training principles?
- In our next class, we will start developing our training plans and perform a sub-max test to assess your current levels of cardiorespiratory endurance, which will influence your plans.

Reflection

- Was I effective in communicating the importance of all the principles of training?
- Through class discussions, did students grasp the concepts of the principles and how to apply them to a program?
- Did the science challenge students to think of their own bodies during exercise?

Homework

Continue working on the abstract of the research article on training that you have selected.

Resources

National Strength and Conditioning Association: www.nasca.com

American College of Sports Medicine: www.ACSM.org

The Cooper Institute: www.cooperinstitute.org