Unit 3- Making the Athlete Safe

Content Area: **Science**
Course(s): **Sports Medicine**
Time Period: **November**
Length: **8 Blocks**
Status: **Published**

Transfer Skills

Making the Athlete Safe: Environmental Concerns and Protective Equipment

Enduring Understandings

Environmental stress can adversely affect an athlete's performance and pose serious health problems.

The proper selection and proper fitting of protective equipment are essential in the prevention and rehabilitation of many sports injuries.

All sports programs must carry out a plan for counseling, education, and management of exposure to bloodborne pathogens.

Essential Questions

What are the keys to preventing hyperthermia and heat-related illness?

What affects can air pollution have on athletic performance and personal illness?

How can the athletic trainer differentiate between good and bad features of selected protective devices?

What are the ways in which infectious diseases are transmitted from person to person?

Content

Hyperthermia, hypothermia, pronators, supinators, immune system, retrovirus

Skills

Describe the physiology of hyperthermia.

Review how an athlete should be protected from adverse environmental concerns.

Contrast the advantages and disadvantages of customized versus off-the-shelf protective equipment.

Rate the protective values of various materials used to make athletic equipment.

Explain what bloodborne pathogens are and how they can infect athletes and trainers.

Resources

Text: Essentials of Athletic Injury Management Copyright: 2010

PBS LearningMedia

Sports Protective Equipment : Sports Injury Prevention

Assessments

Assessments:

Class Discussions

Q&A

Vocabulary Quiz

Athetic Safety Lab

Unit Test

Standards

HPE.2.6.12.A.4	Compare and contrast the impact of health-related fitness components as a measure of

	fitness and health.
HPE.2.6.12.A.5	Debate the use of performance-enhancing substances (i.e., anabolic steroids and other legal and illegal substances) to improve performance.
SCI.9-12.5.4	Energy drives the cycling of matter within and between systems.
SCI.9-12.7.3	Feedback (negative or positive) can stabilize or destabilize a system.
SCI.9-12.CCC.7.1	students understand much of science deals with constructing explanations of how things change and how they remain stable. They quantify and model changes in systems over very short or very long periods of time. They see some changes are irreversible, and negative feedback can stabilize a system, while positive feedback can destabilize it. They recognize systems can be designed for greater or lesser stability.
SCI.9-12.SEP.7.f	Evaluate competing design solutions to a real-world problem based on scientific ideas and principles, empirical evidence, and/or logical arguments regarding relevant factors (e.g. economic, societal, environmental, ethical considerations).
SCI.9-12.SEP.8.b	Compare, integrate and evaluate sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a scientific question or solve a problem.
SCI.9-12.SEP.8.e	Communicate scientific and/or technical information or ideas (e.g. about phenomena and/or the process of development and the design and performance of a proposed process or system) in multiple formats (i.e., orally, graphically, textually, mathematically).
9-12.HS-LS4-6.2.1	students understand that empirical evidence is required to differentiate between cause and correlation and to make claims about specific causes and effects. They suggest cause and effect relationships to explain and predict behaviors in complex natural and designed systems. They also propose causal relationships by examining what is known about smaller scale mechanisms within the system. They recognize changes in systems may have various causes that may not have equal effects.
9-12.HS-LS4-6.LS4.C.1	Changes in the physical environment, whether naturally occurring or human induced, have thus contributed to the expansion of some species, the emergence of new distinct species as populations diverge under different conditions, and the decline–and sometimes the extinction–of some species.
9-12.HS-LS4-6.LS4.D.1	Humans depend on the living world for the resources and other benefits provided by biodiversity. But human activity is also having adverse impacts on biodiversity through overpopulation, overexploitation, habitat destruction, pollution, introduction of invasive species, and climate change. Thus sustaining biodiversity so that ecosystem functioning and productivity are maintained is essential to supporting and enhancing life on Earth. Sustaining biodiversity also aids humanity by preserving landscapes of recreational or inspirational value.