06_Characterization and Treatment of Thermal, electrical, and chemical burns

Content Area: **Science**
Course(s):
Time Period: **Full Year**
Length: **3-4 Weeks**
Status: **Published**

General Overview, Course Description or Course Philosophy

This course covers introductory information as it relates to the evaluation of individuals who have either critical
medical conditions or sustained acute injuries and their subsequent pre-hospital treatment. Students are
minimally expected to have the knowledge and skills to perform basic life support and elementary treatment to
stabilize a patient for transport to a hospital but not be proficient in utilizing complex life-sustaining
equipment. Students are expected to know first aid, understand when more experienced or sophisticated help
is needed, and prioritize the need for care. They also must do no harm. The first aid provider is not expected
to offer the same level of care as a licensed EMT. This course offers 3 Rutgers University credits with the passing of the final exam.

OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS

- First-degree burn: burn affecting the epidermis, skin is red but not blistered but might show mild swelling; pain and tenderness in the area
- Second-degree burn: burn affecting epidermis and dermis but not subcutaneous tissue; blisters are present and the color is white to red; severe pain
- Third-degree Burn: burn affects all skin layers and possibly the subcutaneous layers, muscle, bone, and internal organs. The area is dry and leathery and charred in color. Painless in area of third-degree burn
- Rule of Nines: the entire head is 9%, the front torso is 18%, the back is 18%, and each entire leg is 18%; the Entire palm including fingers is 1%.

CONTENT AREA STANDARDS

SCI.HS-LS1-2	Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
VHEL.9-12.9.4.12.H.1	Demonstrate language arts knowledge and skills required to pursue the full range of postsecondary education and career opportunities.
VHEL.9-12.9.4.12.H.3	Demonstrate science knowledge and skills required to pursue the full range of postsecondary education and career opportunities.
VHEL.9-12.9.4.12.H.5	Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.
VHEL.9-12.9.4.12.H.44	Demonstrate an understanding of the roles and responsibilities of all members of the healthcare team, including their ability to promote the delivery of quality healthcare.
VHEL.9-12.9.4.12.H.62	Demonstrate knowledge of technical skills required for career pathways in this cluster, including occupational safety techniques, OSHA Standard Precautions, and safety procedures designed to protect clients, co-workers, and self.

RELATED STANDARDS (Technology, 21st Century Life & Careers, ELA Companion Standards are Required)

LA.RH.11-12.3	Evaluate various perspectives for actions or events; determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain.
LA.RH.11-12.4	Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning of a key term over the course of a text (e.g., how Madison defines faction in Federalist No. 10).
LA.RH.11-12.8	Evaluate an author's claims, reasoning, and evidence by corroborating or challenging them with other sources.
LA.WHST.11-12.2.B	Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.
TECH.9.4.12.CT	Critical Thinking and Problem-solving

STUDENT LEARNING TARGETS

Declarative Knowledge

Students will understand that:

- Describe the three different types of burns.
- Describe how burns are evaluated.
- Evaluate thermal burns.

- Describe how to care for thermal burns.
- Evaluate and care for chemical burns.
- Evaluate and care for electrical burns.
- Identify thermal burns, arc burns, and true electrical injuries.

Procedural Knowledge

Students will be able to:

- Identify the types of burns
- Calculate the Rule of Nines
- Treat burns based on type and degree

EVIDENCE OF LEARNING

Formative Assessments

- Chapter reviews
- Worksheets
- Group activities

Summative Assessments

- Benchmarks – departmental benchmark given at the end of MP1, MP2, and MP3 based on lab practices

- Alternative Assessments
    - Lab inquiries and investigations
    - Lab Practicals
    - Exploratory activities based on phenomenon
    - Gallery walks of student work
    - Creative Extension Projects
    - Build a model of a proposed solution
    - Let students design their own flashcards to test each other
    - Keynote presentations made by students on a topic
    - Portfolio

RESOURCES (Instructional, Supplemental, Intervention Materials)

Textbook required by Rutgers University:

Advanced First Aid, CPR, and AED, Seventh Edition

Jones and Bartlett

ISBN-13: 978-1284105315
ISBN-10: 1284105318

INTERDISCIPLINARY CONNECTIONS

- Informal writing
- Data analysis
- Ethics

ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS

See link to Accommodations & Modifications document in course folder.