

<b>COURSE:</b> Health	<b>GRADE(S):</b> 10 <sup>th</sup> Grade
<b>UNIT:</b> Emergency Situations	<b>TIMEFRAME:</b> 5 Lessons

<p><b>NATIONAL STANDARDS:</b></p> <p><b>STANDARD 1:</b> Students will comprehend concepts related to health promotion and disease prevention to enhance health.</p> <p><b>STANDARD 2:</b> Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.</p> <p><b>STANDARD 3:</b> Students will demonstrate the ability to access valid information and products and services to enhance health.</p> <p><b>STANDARD 4:</b> Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.</p> <p><b>STANDARD 5:</b> Students will demonstrate the ability to use decision-making skills to enhance skills.</p> <p><b>STANDARD 7:</b> Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>
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<p><b>STATE STANDARDS:</b></p> <p><b>10.1. Concepts of Health</b>  10.1.12.B. Evaluate factors that impact the body systems and apply protective/preventive strategies.  10.1.12.E. Identify and analyze factors that influence the prevention and control of health problems.</p> <p><b>10.2. Healthful Living</b>  10.2.12.E. Analyze the interrelationship between environmental factor and community health.</p> <p><b>10.3. Safety and Injury Prevention</b>  10.3.12.A. Assess the personal and legal consequences of unsafe practices in the home, school or community.  10.3.12.B. Analyze and apply strategies for the management of injuries.</p> <p><b>Reading Assessment Anchors:</b></p> <p><b>R11.A.2 Understand nonfiction appropriate to grade level</b>  R11.A.2.1 Identify and apply the meaning of vocabulary in nonfiction  R11.A.2.4 Identify and explain main ideas and relevant details</p>
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<p><b>UNIT OBJECTIVES:</b></p> <p>Define first aid and identify its value.</p> <p>Assess consequences of laws against unsafe practices.</p>	<p><b>CONTENT:</b></p> <p>I. Introduction to First Aid</p> <ul style="list-style-type: none"> <li>- Basic definition of First Aid.</li> <li>- Importance of First Aid <ul style="list-style-type: none"> <li>o Can mean the difference between life and death.</li> <li>o Can mean the difference between a permanent and temporary disability</li> </ul> </li> <li>- Laws and Terms: <ul style="list-style-type: none"> <li>o <u>Good Samaritan</u>: Good Samaritan laws in the United States and Canada are laws protecting from blame those who choose to aid others who are injured or ill. They are intended to reduce bystander's hesitation</li> </ul> </li> </ul>
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Demonstrate the ability to apply the emergency action principles.

to assist, for fear of being prosecuted for unintentional injury or wrongful death. In some jurisdictions, Good Samaritan laws only protect those that have had basic first aid training and are certified by the American Heart Association, American Red Cross, American Safety and Health Institute or other health organizations. In other jurisdictions, any rescuer is protected by the Good Samaritan law.

- o Implied Consent: Consent may be implied if the patient is unconscious, delusional or intoxicated — or if the responder had a reasonable belief that this was so. Consent may also be implied if the legal parent or guardian is not immediately reachable and the patient is not considered an adult (no matter what the patient claims).
  - o Parental Consent: If the victim is not an adult (warning: definitions vary), consent must come from the legal parent or guardian. However, if the legal parent or guardian is absent, unconscious, delusional or intoxicated, consent is implied (with the same caveat as above). Special circumstances may exist if *child abuse* is suspected.
- II. Emergency action principles: These are the steps to follow when faced with an emergency.
- Check:
    - o The scene for safety.
    - o The victim for life-threatening conditions.
    - o Ask yourself these 4 questions.
      - Is the scene safe?
      - What happened?
      - How many victims?
      - Can bystanders help?
  - Call: your local emergency number or 911.
    - o Exact location
    - o Telephone number you are calling from
    - o Callers name
    - o What happened
    - o Number of victims
    - o Victims condition
    - o Help being given
  - Care: for life-threatening conditions until trained professionals take over.
    - o Primary Survey
      - No Breathing
      - No Pulse
      - Severe Bleeding
      - Poisoning
    - o Secondary Survey
      - Interview the victim
      - Check vital signs

Show steps for checking an unconscious adult victim.

Demonstrate how to Clear an airway obstruction for a conscious victim (adult).

- Determine Breathing
- Determine skin Appearance
- Do the Head-to-Toe Exam

### III. Check Steps

- Determine responsiveness:
  - o Tap and shout to see if the person responds. If no response, call 911 and yell for help.
  - o Look, listen and feel for breathing (about 10 seconds).
  - o If the person is not breathing or you can't tell; position victim on back, while supporting head and neck.
  - o Open airway using head tilt and chin lift.
  - o Look, listen and feel for breathing for about 10 seconds.
  - o If no breathing, give 2 slow breaths.
  - o Check pulse (carotid) for about 10 seconds.
  - o Check for severe bleeding.

### IV. Choking is a common breathing emergency that occurs when the airway becomes blocked due to a solid object, fluids, or the back of the tongue.

- Common Causes of Choking:
  - o Trying to swallow large pieces of poorly chewed food.
  - o Drinking alcohol before or during meals.
  - o Wearing dentures.
  - o Eating while talking excitedly or laughing, eating too fast.
  - o Walking, playing, or running with food or objects in mouth.
- Two types of airway obstructions:
  - o Partial airway obstruction (conscious victim)
    - Can get air in and out of lungs or cough or make wheezing sounds between breaths.
    - May also get enough air to speak. Can quickly become a complete blocked airway.
    - Clutching the throat with one or both hands is the universal sign for choking.
    - First aid for partial airway obstruction: Stay with victim and encouraging them to continue coughing.
  - o Complete airway obstruction (*conscious* victim) person cannot cough forcefully, speak, or breathe; may make high-pitched noises which indicates not getting enough air.
    - o First aid for complete airway obstruction:
      - Ask victim, "Are you choking?"

Apply the steps for adult rescue breathing to an emergency situation.

Demonstrate how to Clear an airway obstruction for an unconscious choking victim (adult).

- Heimlich Maneuver, is performed. This forces air in the lungs to push the object out of the airway.
- For a pregnant victim or obese victim use chest thrusts.

V. Rescue breathing (artificial respiration) is breathing air into someone's lungs when natural breathing has stopped or a person cannot breathe on their own.

- Causes of Breathing Emergencies:
  - o Airway obstruction
  - o Damage to muscles or bones of the chest
  - o Electric shock
  - o Drowning
  - o Reactions to poisons, drugs, insects, food
  - o Anxiety, excitement (hyperventilation)
  - o Asthma
- Signals of Breathing Emergencies:
  - o Can't catch breathe
  - o Gasp for air
  - o Breathe faster or slower than normal (normal breathing rate is 12 breaths per minute)- unusual noises (wheezing, gurgling, high-pitched)
- Steps for Rescue Breathing:
  - o Open airway and pinch nose shut.
  - o Make a tight seal around victim's mouth with your mouth.
  - o Give 1 breathe every 5 seconds (12 in a minute)
  - o After 1 minute, recheck breathing/pulse.
  - o If victim is not breathing but has a pulse, continue with rescue breathing.
  - o If you cannot make a tight seal around victim's mouth, breathe into the victim's nose.

VI. Clearing Airway Obstruction

- If a conscious choking victim becomes unconscious or you can't get air into the victim (the chest does not rise or fall) after re-tilting the head of the victim and attempting 2 slow breaths you must clear the airway.
- Steps for clearing airway obstruction on an *unconscious* adult:
  - o Position shoulders over hands, and perform 30 chest compressions at a rate of 100 times per minute.
  - o After performing chest compressions, check the mouth for an object, if you see one take it out. Do not perform a blind finger sweep.
  - o After checking the mouth, if you do not see an object give 2 slow breaths

Describe signs and symptoms of heart attack.

Apply the steps for adult CPR

- o Continue with this cycle until the object comes out, check for breathing and circulation. If no breathing, continue with rescue breathing, if no breathing and no circulation continue with CPR.
- o If the person regains consciousness; place him/her in the recovery position.

#### VII. Heart

- Heart Attack: When one or more of the blood vessels that supply blood to the heart becomes blocked. The heart stops working effectively.
- Cardiac Arrest: The heart stops beating due to not getting enough oxygen rich blood.
- Heart Disease
  - o Leading cause of death for adults in USA... Has dropped over 30% due to Americans leading healthier lifestyles.
  - o Develops slowly, victims may not be aware of it for many years.
  - o Fatty deposits build up in inner walls of arteries, narrowing the arteries, causing less oxygen rich blood to flow to heart.
- Risk Factors for Heart Disease
  - o Those that cannot be changed: heredity, sex, (males are at greater risk) and age.
  - o Those that can be changed: smoking, high blood pressure, high blood cholesterol, obesity, physical inactivity.
- Signs of a Heart Attack:
  - o chest pain
  - o breathing difficulty
  - o sweating
  - o irregular pulse rate
  - o nausea
  - o general ill feeling
- Facts on Heart Attack
  - o About 1 million people suffer a heart attack each year.
  - o Many lives are lost because people deny they are having a heart attack and delay calling for help.
  - o Recognizing the signals of a heart attack and calling for help (ambulance) before the heart stops are critical elements in saving lives.

#### VIII. Adult CPR

- "The heart of the matter facts"
  - o Over 66 million suffer some form of heart disease.
  - o Nearly 1 million deaths each year are attributed to heart disease.
  - o In the past 20 years deaths due caused by heart attacks have dropped over 30% and deaths caused by strokes have

Analyze the significance of the AED and its importance to preserve life.

dropped 50% due to people becoming more health conscious.

- o An increased awareness of what it means to lead a healthier life has prompted many Americans to make heart healthy changes in their lives. These changes include:
  - Stop smoking
  - Eating right- less fats
  - Getting regular exercise
- CPR
  - C* = cardio = heart
  - P* = pulmonary = lungs
  - R* = resuscitation = revive
  - o CPR is a holding action for sudden cardiac arrest until more advance life support care can be made available.
  - o No pulse/no breathing is the victim's condition in order for CPR to be performed.
  - o Purposes of CPR:
    - Keeping lungs supplied with oxygen (rescue breathing).
    - Keep blood circulating and carrying oxygen to brain, heart, and other parts of body (chest compressions).
- Steps for CPR:
  - o Find hand position on breastbone.
  - o Position shoulders over hands. Compress chest 30 times.
  - o Give 2 slow breaths.
  - o Continue 30 compressions and 2 breaths until victim revives or help comes.
- When to stop CPR
  - o Exhausted
  - o Doctor or coroner pronounces victim dead
  - o Relieved by another person who knows CPR
  - o Victim revives
  - o Scene becomes unsafe

#### IX. AED

- *Definition:* An automated external defibrillator (AED) is a computerized medical device that can check a person's heart rhythm. It can recognize rhythm that requires a shock, and it can advise the rescuer when a shock is needed. The AED uses voice prompts, lights, and text messages to tell the rescuer the steps to take.
- Placement of the AED: Targeted public areas, such as sports arenas, gated communities, office complexes, shopping malls, etc.
- Defibrillation Programs: People are strongly encouraged to take part in community

Compare different health emergencies and identify how health emergencies can be treated.

Contrast different health emergencies.

defibrillation programs, which include:

- o Persons that acquire an AED notify the local EMS office.
- o A licensed physician or medical authority provides medical oversight to ensure quality control.
  
- o Persons responsible for using the AED are trained in CPR and how to use an AED.

\*Note: Rescuers are advised to use only one shock before resuming CPR, rather than three, as previously recommended.

#### X. Health Emergencies

##### - Unintentional Injuries

- o Motor Vehicle Crashes- Estimated 75% of motor vehicle crashes occur within 25 miles of home at speeds less than 40 m.p.h.
  - Top 5 reasons for crashes
    - Excessive speed
    - Aggressive driving
    - Driver distraction
    - Alcohol and other drugs
    - Improper use of safety equipment
- o Injuries in the Home
  - Falls
  - Fires
  - Poisonings
  - Suffocation and Choking
  - Unintentional Discharge of Firearms
- o Recreational Injuries:
  - Keys to Prevention
    - Proper use of safety and protective gear.
    - Avoid use of alcohol and other drugs.
    - Be aware of your action and the actions of others.
- o On-the-Job Injuries: Most common reasons:
  - Stress
  - Fatigue
  - Unsafe environmental conditions
- o Floods
  - Preparing for a Flood
    - Plan and practice a flood evacuation route.
    - Gather emergency contact phone numbers.
    - Inform local authorities about any special needs, i.e., elderly or bedridden people, or anyone with a disability.
  - If ordered Not to evacuate:

- Monitor the radio or television for weather updates.
- Prepare to evacuate to a shelter or to a neighbor's home if your home is damaged, or if you are instructed to do so by emergency personnel.

○ Tornadoes

- Taking Shelter- Flying debris causes most deaths and injuries during a tornado. Although there is no *completely* safe place during a tornado, some locations are much safer than others.
- At home, stay away from windows and protect your head.
- In a car, stop the car and get out. Do not lie under the car. Avoid trees. Lie down in a ditch or low spot.

○ Winter Storms

- *Indoor Safety:* Stay indoors and dress warmly, conserve fuel, close off unused rooms, and seal drafts from doors and windows.
- *Outdoor Safety:* Dress warmly, wear mittens rather than gloves. Cover your mouth to protect your lungs from extremely cold air, drink water to avoid dehydration.
  - Watch for signs of frostbite: Feeling of "pins and needles" followed by numbness (no feeling). Skin may freeze hard and look white or skin is red and painful. Very bad frostbite may cause blisters or gangrene (black, dead tissue).

○ Hypothermia

- Signs and Symptoms:
  - uncontrolled shivering,
  - slow speech
  - memory loss
  - stumbling
  - sleepiness
  - extreme tiredness
- Treatment: Drink warm liquids that do not contain caffeine or alcohol. Do not eat snow. Wrap your body and head with extra clothes, blankets.

○ Allergic Reactions

- Signs and symptoms:
  - difficulty breathing
  - skin pale or red, sweaty or dry
  - confusion
  - anxious

	<ul style="list-style-type: none"> <li>➤ unconscious</li> <li>▪ Treatment <ul style="list-style-type: none"> <li>➤ Self-care at home is not enough in the case of severe reactions.</li> <li>➤ Do not treat the reaction. Go immediately to the emergency room. If no one is available, call 911 for an emergency transport.</li> </ul> </li> <li>▪ Small reactions with mild symptoms <ul style="list-style-type: none"> <li>➤ Treatments: oral histamines, such as Benadryl, and for rashes an anti-inflammatory steroid cream, such as hydrocortisone may be used.</li> </ul> </li> <li>○ Electrical Storms <ul style="list-style-type: none"> <li>▪ Safety Procedures: <ul style="list-style-type: none"> <li>➤ Look for dark towering and clouds, distant lightning or thunder.</li> <li>➤ Check for things that may be hazardous, like dead trees or possible fire hazards.</li> <li>➤ Take shelter in a building or a car. If no structure is available, reach an open, low area and squat down.</li> <li>➤ Stay away from metal equipment and bodies of water.</li> </ul> </li> <li>▪ If a person is stuck by lightning they may have a charge that can shock another person. <ul style="list-style-type: none"> <li>➤ If the victim is burned, provide First Aid treatment and contact emergency services.</li> <li>➤ Provide CPR if the person stops breathing or if their heart stops.</li> </ul> </li> </ul> </li> </ul>
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<p><b>ACTIVITIES:</b></p> <p>Overhead: Definition of first aid.</p> <p>Write a brief paragraph on the value of first aid.</p> <p>Video: American Red Cross Community CPR- "Introduction" section.</p> <p>Brainstorm: Students compile a list of unsafe scenes and life-threatening emergencies. (Analyzing Internal and External Influences)</p> <p>Video: American Red Cross Community CPR- "Emergency Action Principles" section.</p> <p>Video: American Red Cross Community CPR-</p>
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<p><b>ASSESSMENTS:</b></p> <p>Define First Aid and identify its value.</p> <p>Students demonstrate "check, call, care" steps in a journal entry.</p> <p>Individual skill testing of eight check steps. Describe consequences of laws against unsafe practices in a journal entry.</p> <p>Individual skill testing on abdominal thrusts (Heimlich maneuver) for a conscious choking adult.</p> <p>Individual skill testing on steps to clear an airway obstruction (abdominal thrusts) for an unconscious choking adult.</p>
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<p>"Checking an Unconscious Victim" section.</p> <p>Actar II practice (Self-management)</p> <p>Partner practice(Self-management) Skill Sheet: American Red Cross Community CPR on eight check steps.</p> <p>Partner skill testing of eight check steps using Actar manikins.</p> <p>Brainstorm: Causes of choking</p> <p>Actar II practice(Self-management)</p> <p>Partner practice(Self-management) Skill Sheet: American Red Cross Community CPR conscious and unconscious choking adult.</p> <p>Partner skill testing on the Heimlich maneuver. (Self-management)</p> <p>Partner skill testing of unconscious choking adult using Actar Manikins. (Self-management)</p> <p>Video: American Red Cross Community CPR- "Conscious Choking Adult" section. Brainstorm: Causes of breathing emergencies and signals of breathing emergencies.</p> <p>Actar II practice(Self-management)</p> <p>Partner practice(Self-management) Skill Sheet: American Red Cross Community CPR on adult rescue breathing.</p> <p>Partner skill testing of adult rescue breathing using Actar manikins. (Self-management)</p> <p>Video: American Red Cross Community CPR- "Adult Rescue Breathing" section.</p> <p>Lecture: The heart and how it works, heart attack, cardiac arrest and heart disease.</p> <p>Video: American Red Cross Community CPR- "Signs and Symptoms of a Heart Attack".</p> <p>Brainstorm: Reasons why an adult heart may stop beating.</p> <p>Discussion: How and why does CPR work? (Interpersonal Communication)</p> <p>Actar II practice(Self-management)</p>	<p>Differentiate between health emergencies and their treatments.</p> <p>Analyze the importance of the AED in preserving life. Interview someone who has experienced a heart attack and discussing its signs and symptoms write a reaction paper to it.</p> <p>Individual skill testing on adult rescue breathing.</p> <p>Written exam: Individual success at answering questions (?? to ??) on standardized American Red Cross Community CPR exam.</p> <p>Individual skill testing on adult CPR.</p> <p>Standardized written exam of 84% or higher for BLS adult certification plus card.</p> <p><b>REMEDICATION:</b></p> <ul style="list-style-type: none"> <li>✧ Extra practice on the manikin.</li> <li>✧ Teacher assistance.</li> <li>✧ Peer helpers.</li> <li>✧ CPR simulator website on the computer.</li> </ul> <p><b>ENRICHMENT:</b></p> <p>Interview an EMT, fire personal, or volunteer ambulance worker. Ask them about the psychological and medical concerns associated with rendering CPR, such as catching an infectious disease.</p> <p>Create a pamphlet on other emergency situations not covered in the unit. I.e. Bio-terrorism, earthquakes.</p> <p>Construct a report on FEMA.</p> <p>Create a poster informing the class about the history and origin of the American Red Cross and American Heart Association.</p>
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Partner practice(Self-management)  
Skill Sheet: American Red Cross Community CPR-  
"Steps for Adult CPR".  
Partner skill testing of adult CPR. (Self-  
management)  
Video: American Red Cross Community CPR-  
"Steps for Adult CPR" section.

*Teacher directed differentiated instructional  
projects and activities are ongoing and based on  
student need.*

**RESOURCES:**

<http://www.americanheart.org>

L. *Essentials of Health & Wellness* (2005),  
Robinson, J., McCormick, D, & Haroun,  
Thompson Learning Inc. Clifton Park, NY.

Wikipedia, the free encyclopedia

<http://www.bt.cdc.gov/disasters/>

<http://www.emedicinehealth.com/allergicreaction/page6em.htm>

<http://library.thinkquest.org/03oct/00758/text-only/disaster/lightning/safety.html>