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| **TEXAS CTE LESSON PLAN**  [www.txcte.org](http://www.txcte.org) | |
| **Lesson Identification and TEKS Addressed** | |
| **Career Cluster** | Law, Public Safety, Corrections, and Security |
| **Course Name** | Firefighter I |
| **Lesson/Unit Title** | Rescue |
| **TEKS Student Expectations** | **130.334.(c) Knowledge and Skills**  (12) The student demonstrates confidence in performing firefighting skills while wearing a self-contained breathing apparatus.  (G) The student is expected to demonstrate rescue procedures without compromising the rescuer's respiratory protection such as rescuing a firefighter with functioning respiratory protection, a firefighter without functioning respiratory protection, or a civilian without respiratory protection  (15) The student demonstrates the proper testing and operation of a personal alert safety system device.  (A) The student is expected to explain the proper operation of a personal alert safety system  (B) The student is expected to demonstrate the proper testing of a personal alert safety system  (17) The student recognizes common types of accidents and injuries and their causes.  (A) The student is expected to describe the elements of a personnel accountability system and the application of the system at an incident  (D) The student is expected to demonstrate techniques for action when trapped or disoriented in a fire situation or in a hostile environment  (18) The student describes the handling of different types of accidents and hazards.  (C) The student is expected to describe the safe handling and operation of hand and power tools  (D) The student is expected to describe safety procedures for fire service lighting equipment such as power supply (portable or mounted), lights, cords, and connectors  (E) The student is expected to recognize the procedures for the use of safety equipment such as seat belts, ear protection, eye protection, and other safety equipment provided for protection while riding on apparatus.  (19) The student identifies safety procedures for ensuring a safe environment.  (C) The student is expected to identify structure fire and roadway emergency scene potential hazards  (E) The student is expected to describe procedures for safe operation at emergency scenes. |
| **Basic Direct Teach Lesson**  (Includes Special Education Modifications/Accommodations and  one English Language Proficiency Standards (ELPS) Strategy) | |
| **Instructional Objectives** | |  | | --- | | The students will be able to: | | 1. Explain the proper operation of fire service safety devices. | | 2. Demonstrate the proper testing of fire service safety devices. | | 3. Describe the elements of a personnel accountability system and the | | application of the system at an incident | | 4. Demonstrate techniques for action when trapped or disoriented in a | | fire situation or in a hostile environment | | 5. Safely demonstrate ten types of tools used for forcible entry, rescue, | | and ventilation | | 6. Identify potential hazards of structural fires and roadway emergency | | scenes | | 7. Describe procedures for safe operation at emergency scenes | |
| **Rationale** | It is critical that firefighters understand the proper use and importance of rescue devices within the fire service. Firefighting is an inherently dangerous job, but understanding how to properly don rescue apparel, use rescue tools, maintain rescue equipment, and utilize personnel accountability systems can reduce these dangers. Firefighters who understand these precautions may reduce the risks to their own safety while improving their ability to rescue fellow fighters and others.  (Note: According to National Fire Protection Association (NFPA) data, from 1976 to 2006 the fire service experienced a 58 percent reduction in firefighter line-of-duty deaths. Over the same period, the country also saw a 54 percent drop in the number of structural fires, therefore reducing firefighters’ exposure to risk.) |
| **Duration of Lesson** | 6 hours |
| **Word Wall/Key Vocabulary**  *(ELPS c1a,c,f; c2b; c3a,b,d; c4c; c5b) PDAS II(5)* |  |
| **Materials/Specialized Equipment Needed** | * Rescue Equipment Worksheet and Key * Rescue Facts Worksheet and Key * Primary Search/Rescue Practice Drill handout * Paper and writing utensil * Full Complement of Personal Protective Equipment (PPE) * Two Rescue Ropes * SCBAs * Radios * Mask black out material (wax paper is recommended) * Facility capable of housing a rescue drill * Rescue Quiz and Key * Rescue Equipment Worksheet Key * Rescue Facts Worksheet Key * Discussion Rubric * Individual Work Rubric * Research Rubric * Writing Rubric |
| **Anticipatory Set**  (May include pre-assessment for prior knowledge) | Have a class discussion about firefighters’ day-to-day operational risks, including the various environments in which firefighters may work and the specific dangers unique to each location. Have the students list the safety preparation activities that firefighters can do before going on a rescue call and the actions that firefighters can take during a rescue call to decrease their chances of work related injury. Use the students’ lists to enhance the class discussion. Use the Discussion Rubric for assessment. |
| **Direct Instruction \*** | I. Rules of Engagement (Pulled from NFPA Standards 1500 and 1561)  A. Rules for Firefighters  1. Size up the scene  2. Determine whether people are known to be inside, assumed to be inside, or their location is unknown, and whether individuals Do not risk your life for property. Do not risk your life for individuals that cannot be saved  4. Extend limited risk only if property or lives are savable  5. *Always* remember: two in, two out; never leave your partner  6. Maintain awareness of your surroundings  7. Constantly monitor the radio for updates and size-ups  8. If you see a dangerous situation it is up to you to report it  immediately  9. Declare a MAYDAY the moment you think that there is trouble  B. Rules for Incident Commanders  1. Size up the scene and report findings to all companies and  dispatch  2. Determine whether people are known to be inside, assumed to be inside, or unknown, and whether individuals could survive the current environment  3. Conduct an action plan  4. Decide if the action plan is an offensive attack or a defensive  attack. Do not make an offensive decision until you have all of  the staff and the equipment on the scene  5. Do not risk firefighters’ lives for property. Do not risk lives for individuals that cannot be saved  6. Extend limited risk only if property or lives are savable  7. Monitor that two go in and two go out  8. If you see a dangerous situation it is up to you to report it  immediately  9. Maintain frequent communications with dispatch and companies at the location. Designate one channel for fire ground communications and another channel for dispatch  10. Relay frequent updates and revised size-ups. Change the plan as needed  11. Ensure accurate accountability of all the staff on the scene  12. If a primary search has been completed and the fire is not under control (or if the situation is dangerous) do not hesitate to revise the strategy to a defensive attack  13. Have a rapid intervention team (RIT) and a rehab team available  II. Search – looking for victims that need assistance to leave a dangerous  area; this goes hand-in-hand with rescue  A. Search-and-Rescue Size-Up  1. Develop a search-and-rescue plan based on what is known, not on what is assumed  2. Conduct a risk-benefit analysis  a) Consider the risks and benefits of the operation  b) In some situations, operations must be limited or cannot be performed because they pose a high risk to firefighters  3. Evaluate the occupancy factors  a) Firefighters should first rescue occupants who are in the most immediate danger, followed by those who are in less danger  b) Risk to occupants is determined by:  (1) Location of the fire  (2) Direction of the spread  (3) Volume and intensity of the fire  (4) Smoke conditions in different areas  c) Occupants at greater risk include those who are:  (1) Close to the fire  (2) Above the fire  (3) In the path of the fire  (4) Asleep, unconscious, incapacitated, or trapped  (5) Children and the elderly  (6) Confined to a bed or to wheelchairs  (7) In residences at night  (8) In offices on weekdays  (9) In bars/clubs on Friday and Saturday nights  (10) In unprotected, wood-frame buildings  4. Make observations  a) Look for clues that indicate whether a building is occupied and how many people are likely to be present  (1) Are there cars in the driveway?  (2) Are there toys in the front yard?  (3) Is the mailbox full?  (4) Is the parking lot empty?  (5) Are the windows boarded up?  5. Consider the occupant information  a) Obtain accurate information from occupants who have escaped  (1) Can those outside verify that everyone is out?  (2) Ask specific questions  (3) Be sure that you know who you are looking for and where you should be looking  6. Consider the building size and arrangement  a) Larger buildings may require more teams  b) Knowing the floor plan is useful (though unlikely)  c) Pre-incident plans include valuable information such as:  (1) Corridor layouts  (2) Stairway locations  (3) Special-function rooms or areas  d) Note the floor numbering and apartment numbering system  B. Search Coordination  1. The Incident Commander (IC) makes assignments and serves as the search coordinator  2. Notify the IC when the search is complete  3. Notify the IC if a victim is located while performing other tasks  4. Keep track of those victims who may have already escaped but still need assistance  C. Search Priorities  1. The search begins where victims are at the greatest risk  2. Search assignments should be based on a system of priorities:  a) First, search the fire area, then the rest of the fire floor  b) Second, search the area directly above the fire  c) Next, search the top floor, then work your way down to the floor above the fire  d) Areas below the fire are a lower priority but should be searched before the “all clear” is given  D. Introduction to Search/Rescue Techniques  1. Searchers should always operate in teams of two  2. Partners must remain in visual, voice, or physical contact  3. Mayday must be given if partners are separated  4. At least one team member must have a radio and maintain  contact with the incident commander  5. Teams must notify the IC when each search area is completely searched  E. Types of Searches  1. Primary search – a quick attempt to locate any potential victims who are in danger  a) The objective is to find any potential victims as quickly as possible and remove them from danger  b) The phrase “primary search complete; all clear” is used to report that the primary search is complete  c) Time is critical, and speed is important during the primary search  d) Check all areas where victims have a high probability of being located, such as  (1) Beds, cribs, and chairs  (2) On the floor next to doors and windows  (3) In closets, bathtubs, or showers, and under beds  e) Firefighters must rely on their senses  (1) Eyes (Can you see anything?)  (2) Ears (Can you hear someone calling for help?)  (3) Feel (Do you feel a victim’s body?)  f) Use a hand tool to extend your reach  g) Use a safety line secured at the point of entry so that your location may be found in the event of a mayday  h) Follow the walls. Make note of obstacles, doors, and other landmarks in case you get stuck  i) Once the search is complete, the search team should retrace its path to the entry point  j) Identify secondary escape routes for emergencies  k) Note locations of stairways, doors, and windows  l) Remain in contact with the IC and give frequent updates on the situation and location  2. Secondary search – a thorough search conducted after the  situation is under control  a) Should be conducted by a second team, if possible  b) Used to locate victims that might have been missed during the primary search  c) Is more detailed and thorough than the primary search  d) Is completed when the building conditions have improved  but some hazards may still exist  (1) Levels of carbon monoxide and other toxins may be above normal limits  (2) The fire may rekindle during a secondary search  (3) The structure may be unstable  e) Is conducted slowly and methodically  f) Must include all areas of the building  F. Search Patterns  1. In small rooms, searchers should follow walls around the  perimeter and sweep toward the center with hand tools, looking for a victim  2. In large rooms, one member should be in contact with the wall while the other moves toward the center in search of individuals. Both rescuers must remain in visual/oral contact throughout the entire search  a) Clockwise search (left-handed search)  (1) Turn left at the entry point  (2) Keep the left hand in contact with the wall  (3) Use the right arm (or tool held by right arm) to sweep the room  (4) Turn right at each corner until you return to the entry point  b) Counterclockwise search  (1) Move around the room in the opposite direction of the clockwise search, but follow the same steps  3. Practice and use the standard system pattern adopted by the department  4. Check the temperature of closed doors before opening them to determine if there is active fire on the other side  a) Do not open a hot door unless there is a hose line ready to douse the fire  5. Keep track of your position relative to the entry door  a) Always enter and exit through the same door  6. Mark rooms to show if they have been searched  G. Search Equipment  1. Thermal Imaging Devices  a) Like a small camcorder, but used to show heat images rather than visible light images using Infra-red technology  b) Can “see” an image of the room’s contents or a person through smoke and darkness; the warmer an object, the brighter it shines in the camera  c) May be used to determine whether fire is on other side of a door  2. Search Ropes  a) Used to search large, open areas when it is impossible to cover the interior by following the walls  b) Used to search interconnected rooms or spaces  c) Used to search areas with multiple aisles  d) Provide a reliable return path to the entry point  e) Should be preloaded in easy-to-carry bags with quick  connects for point of entry and fire personnel  III. Rescue Techniques  A. Introduction to Rescue Techniques  1. Rescue is the removal of a person who is unable to escape from a dangerous situation  2. Rescue techniques include:  a) Assists  b) Drags  c) Carries  3. Types of rescues range from very basic techniques, such as  directing occupants toward an exit, to very demanding, complex operations, such as extricating a trapped, unconscious victim  4. Always use the safest and most practical means of removal  B. Shelter-in-Place  1. Consider this option when occupants are conscious and in a part of the building that is protected from the fire  2. Occupants may be exposed to more risk if they attempt to exit  3. The incident commander must make this decision  C. Exit Assist  1. Simplest type of rescue  2. Used when the victim is responsive and able to walk with little or no assistance  3. Firefighters should take the victim’s arm or use a walking assist to ensure the victim does not fall or become lost  D. Simple Victim Carries  1. Used to move a victim who is conscious and responsive but  unable to stand or walk  2. Four simple carries can be used:  a) Two-person extremity carry  b) Two-person seat carry  c) Two-person chair carry  d) Cradle-in-arms carry  E. Emergency Drags  1. The most efficient method to remove an unconscious or  unresponsive victim  2. Five emergency drags can be used:  a) Clothes drag – used to remove a victim who is on the floor and is too heavy for one rescuer to lift and carry  b) Blanket drag – used to move a victim who is not dressed or is dressed in flimsy clothing  c) Webbing sling drag – provides a secure grip around the upper part of a victim’s body for a faster removal  d) Firefighter drag – can be used if the victim outweighs the rescuer  e) Emergency drag from a vehicle – performed when the victim must be removed quickly from a vehicle to save his or her life; often violates c-spine precautions  F. Removal of Victims by Ladders  1. Ladder rescues involve a considerable risk of injury to firefighters and occupants  2. Ladder rescues require proper technique and physical strength and stamina  3. Proper placement ensures that the occupant can easily mount the ladder  4. Ladders used for rescue must be heeled or tied in  5. Ladders should be used only when it is impossible to use interior stairways or fire escapes  6. Aerial ladders have several advantages over ground ladders:  a) Stronger  b) Have a longer reach  c) Wider and more stable  d) Reduce the risk of slipping and falling  IV. Personnel Accountability System – establish a procedure to effectively  account for personnel at the scene of an emergency incident  A. NFPA Guidelines  1. All units will remain together, work as a team, and will operate under the direction of the IC  2. All officers shall be aware of the position and function of all  members under their command. This is done at the command  center  3. All members will have a personnel accountability tag that allows the IC to know who is on scene and working in what capacity  4. An absent member of any unit will automatically be assumed lost or trapped in the hazard zone until otherwise determined safe  5. A Personnel Accountability Report (PAR) will be called when needed to make sure all members are accounted for  6. Accountability will only work with a strong personal commitment to the Safety Systems by all personnel involved at the incident  7. Personnel who may become trapped, disoriented, or otherwise unable to respond to the IC’s call for a PAR should immediately activate his or her Personal Alarm Safety System (PASS)  V. Roadway Hazards  A. In the past unnecessary risks were taken and thought of as “part of  the job.” This cultural perspective needs to change  1. Injuries and deaths are not “part of the business”  2. The only acceptable level of injury and death is zero  B. Apparatus occupant safety  1. Seatbelts are nonnegotiable. Do not move until all occupants are seated and wearing seatbelts (NFPA 1500)  2. All vehicles need to be checked every morning. Any unsafe  conditions need to be reported and the apparatus needs to be  taken out of service until it is repaired  3. All driver operators need to undergo formal training. Requiring driver operators to have a CDL is a good idea  4. Do not store loose tools in the cab area. They can become  dangerous in the event of a collision  C. Roads, highways, and interstates are dangerous locations. Never  turn your back to traffic and always wear easily visible clothing  D. Five most common causes of fire apparatus collisions  1. Failure to safely traverse intersections  2. Apparatus backing operations  3. Excessive speed  4. Failure to keep apparatus wheels on the road surface  5. Failure to negotiate curves  E. NFPA 1500 gives guidelines on when an apparatus must make a  complete stop. Know them, and when in doubt come to a complete  stop. There are very few instances when an emergency vehicle can  legally run intersections, stop signs, and red lights  F. When parking an apparatus on a roadway for an emergency call:  1. Shut down at least one lane in addition to the lanes occupied by the incident.  2. Keep front wheels turned away from any citizens, vehicles, or patients so that if the apparatus were to roll or be hit it would roll away from the scene and not into it.  G. Parking on scene  1. Take up one additional lane in addition to the lane(s) containing the collision or incident  2. Park in a manner that protects fire personnel from oncoming  traffic  3. Do not block access to late arriving emergency apparatuses 4. Park the vehicle at a 45-degree angle with front wheels away from the emergency scene  5. Park additional apparatuses at 100’-200’ intervals  6. When placing flares, do so while walking backwards and facing oncoming traffic so that you have additional time to react  7. Do not be afraid to call for the assistance of allied agencies  (police, department of transportation, cranes, hazmat, etc.)  VI. Common Rescue Equipment in the Fire Service  A. Hydraulic rescue tool  B. Halligan tool  C. Window punch  D. SCBA  E. Thermal Imaging Device  F. Rope/webbing  G. Door spreader  H. Ax/maul  I. K12 Saw  J. Ladder  K. Cutting torches  L. Pinch/pry bars |
| **Guided Practice \*** | *Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:*  NONE |
| **Independent Practice/Laboratory Experience/Differentiated Activities \*** | 1. Rescue Equipment Identification. Have students identify various rescue equipment using the Rescue Equipment Worksheet. Use the Rescue Equipment Worksheet Key for assessment. 2. Primary Search/Rescue Practice Drill. Have students complete the Primary Search/Rescue Practice Drill. Use the Primary Search/Rescue Practice Drill handout as a guide. Use the Discussion Rubric and/or the Writing Rubric for assessment.   *Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:*  NONE |
| **Lesson Closure** |  |
| **Summative/End of Lesson Assessment \*** | Rescue Quiz  Rescue Equipment Worksheet  *Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:*  NONE |
| **References/Resources/**  **Teacher Preparation** | * ISBN: 0135151112, *Essentials of Firefighting* (5th Edition), International Fire Service Training Association (IFSTA). * Dallas Fire Department Manual of Procedures Revision 01/2013 National Incident Management System Manual of Procedures Dallas Fire Department Standard Operating Procedures Dallas Fire Station 19A shift personnel * www.usfa.gov * www.fema.gov * http://safetyandhealthweek.org/ |
| **Additional Required Components** | |
| **English Language Proficiency Standards (ELPS) Strategies** |  |
| **College and Career Readiness Connection[[1]](#footnote-1)** | Cross-Disciplinary Standards   1. Foundational Skills   C. Research across the curriculum   * + 1. Understand which topics or questions are to be investigated.     2. Explore a research topic. |
| **Recommended Strategies** | |
| **Reading Strategies** |  |
| **Quotes** |  |
| **Multimedia/Visual Strategy**  **Presentation Slides + One Additional Technology Connection** |  |
| **Graphic Organizers/Handout** |  |
| **Writing Strategies**  **Journal Entries + 1 Additional Writing Strategy** |  |
| **Communication**  **90 Second Speech Topics** |  |
| **Other Essential Lesson Components** | |
| **Enrichment Activity**  (e.g., homework assignment) | For enrichment, have students research the following then write a four-paragraph paper summarizing their research (one paragraph each):   * Give a brief synopsis of a line-of-duty death * State the cause of the death * Clarify if NFPA standards/rules violations led to the death or injury * Describe what can be done in the future to ensure that the same tragedy does not happen again   Use the Individual Work Rubric, the Research Rubric, or the Writing Rubric for assessment.  (Activity introduction notes: Regardless of how much safety is in place, the very act of firefighting is inherently dangerous and line-of-duty deaths will occasionally occur no matter how many precautions are taken. Rescues are very often the most dangerous part of the job.  By looking at past injuries and line-of-duty deaths, it is possible for future firefighters to make changes to their own actions/responses so that the same mistake does not happen twice.) |
| **Family/Community Connection** |  |
| **CTSO connection(s)** | SkillsUSA |
| **Service Learning Projects** |  |
| **Lesson Notes** |  |

1. Visit the Texas College and Career Readiness Standards at <http://www.thecb.state.tx.us/collegereadiness/CRS.pdf>, Texas Higher Education Coordinating Board (THECB), 2009. [↑](#footnote-ref-1)