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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, & Security |
| **Course Name** | Firefighter II |
| **Lesson/Unit Title** | Emergency Services Communications |
| **TEKS Student Expectations** | **130.335. (c) Knowledge and Skills**(2) The student uses information technology applications as they pertain to fire management situations. (A) The student is expected to apply protocols for managing emergency situations using radio equipment, computer technology, and public address and warning systems(B) The student is expected to demonstrate use of word-processing and spreadsheet software in fire management services |
| **Basic Direct Teach Lesson**(Includes Special Education Modifications/Accommodations and one English Language Proficiency Standards (ELPS) Strategy) |
| **Instructional Objectives** | The student will be able to:1. Apply protocols for managing emergency situations using radio equipment, computer technology, and public address and warning systems.2. Use word processing and spreadsheet software in fire management systems. |
| **Rationale** | Fires and emergency service calls need to be handled expeditiously. It is vitally important that communications personnel can receive information, dispatch units, and maintain lines of communication between the command center, Incident Commander (IC), line personnel, and other agencies involved in the response. There are protocols involved in receiving and dispatching alarms, as well as NFPA and industry standards that have been adopted by many states throughout the country. Knowledge of those standards and expectations is essential for effective Emergency Services Communications. |
| **Duration of Lesson** | 4 hours |
| **Word Wall/Key Vocabulary***(ELPS c1a,c,f; c2b; c3a,b,d; c4c; c5b) PDAS II(5)* |  |
| **Materials/Specialized Equipment Needed** | * Apparatus radio or hand-held radio (props)
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| **Anticipatory Set**(May include pre-assessment for prior knowledge) | Engage your students in a discussion about the communication process as it relates to the fire service. Discuss some examples of communication, and ask for examples or stories when the students themselves may have caused or been the victim of miscommunication. Express the importance of not just being able to give messages or instructions, but also being able to effectively receive messages and/or instructions. Emphasize that the beginning of incident mitigation begins with effective communication. Use the Discussion Rubric for assessment. |
| **Direct Instruction \*** | 1. Communications Equipment
	1. Radios
		1. All components of the fire service can communicate with each other in emergency and non-emergency situations
		2. Radios can receive and transmit information between the units out in the field, the IC, and the communications center
		3. Be aware that all transmissions can be monitored by outside sources such as the news media
	2. Telephones
		1. Phone systems communicate voice messages, computer information, and documents through fax systems
			1. TDD/TTY text phones allow hearing and/or speech impaired individuals to communicate over the telephone system
		2. Cell phones can also send text information and pictures as well as computer information
		3. Phone systems are sometimes the only method of reliable, fast communication in rural areas
		4. Fax machines take images and text, convert them into a digital format, and transmit them over phone lines
	3. Public Alert Systems
		1. These systems can be used by anyone to report an emergency and include
			1. Telephones
			2. Two-way radios/circuit boxes
			3. Fire alarm boxes
			4. Call boxes
			5. Reports from walk-ins
		2. When receiving calls from public alert systems, the call taker must be able to acquire all the necessary information to dispatch personnel quickly and effectively:
			1. Name
			2. Call back number
			3. Location of the incident
	4. Computer Aided Dispatch Systems (CAD)
		1. Aid telecommunicators, call takers, and dispatchers by
			1. Selecting which units to dispatch using computer programs, GPS, etc.
			2. Using Automatic Vehicle Location (AVL) to determine the closest response vehicle
2. Communications Equipment Protocols
	1. Radios
		1. Radio equipment operators must effectively
			1. Process information under stressful conditions
			2. Pass on task-related information as well as direct orders
			3. Use proper terminology and be as concise and brief as possible without losing the message
			4. Know what they are going to say before keying the microphone
			5. Use proper radio discipline
				1. Radio operators must hold the “push to talk” button for a minimum of 2 seconds before speaking
				2. Keep the button depressed for at least 2 seconds at the end of the transmission
				3. This allows the entire message to be heard without “clipping” the beginnings or ends of messages
			6. Refrain from using fire service slang or jargon
			7. Keep from using individual’s names in radio messages (systems are monitored)
			8. Enunciate while speaking clearly and concisely
	2. Telephones
		1. Telecommunicators must effectively
			1. Answer 95% of all calls within 30 seconds, and respond to all alarms within 60 seconds
			2. Obtain the nature of the emergency
			3. Collect the address or location of the emergency, as well as a callback number
			4. Maintain composure
			5. Enunciate while speaking clearly and concisely
			6. Follow up on incomplete calls
			7. Can receive alarms from different source types
				1. TDD/TTV text phones
				2. Direct lines
				3. Commercial phone systems
				4. Cell phones
				5. Alarm boxes
				6. Emergency telephone systems
				7. Call boxes
3. Fire Management Systems
	1. Computer aided dispatch (CAD) is an automated system that assists in assessing dispatch information and aligning the initial response of personnel and equipment
	2. Automated vehicle location (AVL) uses global positioning satellite (GPS) technology to alert the closest available units to the emergency
	3. National Fire Incident Reporting System (NFIRS) is a collection of statistics and data about fires in the United States
		1. The data is collected and sent by local fire departments to the Texas Fire Incident Reporting System (TXFIRS)
		2. All information is forwarded to the United States Fire Administration (USFA)
		3. All fifty states participate in NFIRS
		4. Collected information helps establish and justify budgetary needs, including manpower and equipment
	4. Personal computer systems to collect and report information for NFIRS and TXFIRS
		1. Used to justify department and community needs related to the fire service
	5. Computers are used for records keeping, including
		1. Spreadsheets for inventory
		2. Map information
		3. Hazardous materials storage facilities and/or permitting
		4. Prefire planning (preplans)
		5. Departmental policies and procedures
		6. Mutual aid agreements
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| **Guided Practice \*** | Emergency Service Communications Listening Activity. Have each student go to the front of the room (one at a time). Each student will be asked 3 questions about themselves (a personal attribute or something that they like or dislike) by three other students. Do not let the same three students ask all the questions. All the students should get involved.Take notes as to which students ask which questions and what the answers were. After all the students have been asked and answered 3 questions, inform the class that there will now be a quiz about the class’ responses. This is when the class discovers if they really listened to each other. Members of the class must recall who asked what questions to whom, and what the answers were. Use the Individual Work Rubric for assessment. |
| **Independent Practice/Laboratory Experience/Differentiated Activities \*** | Call Taker Intake Form. Have each student design a Call Taker Intake Form. The form should be designed for use by a 911 dispatcher to record pertinent information from a caller reporting an emergency. It should include the following information: the caller’s name, the caller’s address, the location of the incident and the nature of the incident. Use the Individual Work Rubric for assessment.Portable Radio Use Activity. Have students demonstrate the proper method of using a portable radio during routine and emergency traffic. Use the Portable Radio Use Checklist for the activity and for the assessment. |
| **Lesson Closure** |  |
| **Summative/End of Lesson Assessment \***  | * Emergency Services Communications Quiz
* Portable Radio Use Checklist
* Discussion Rubric
* Individual Work Rubric
* Writing Rubric

**Accommodations for Learning Differences:** For reinforcement, students will work as partners and practice receiving and placing mock emergency calls. Each student will create a minimum of 3 imaginary emergency scenarios with the following information for each of the scenarios: the caller’s name, the caller’s address, the location of the incident and the nature of the incident. The students will then take turns acting as the emergency services personnel. Use the Individual Work Rubric for assessment.  |
| **References/Resources/****Teacher Preparation** | * ISBN: 0135151112, *Essentials of Firefighting* (5th Edition)**,** International Fire Service Training Association (IFSTA), 2008
* ISBN: 1428339825, *Firefighter's Handbook: Firefighter I and Firefighter II* (1st Edition), Delmar Cengage Learning, 2008
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| **Additional Required Components** |
| **English Language Proficiency Standards (ELPS) Strategies** |  |
| **College and Career Readiness Connection[[1]](#footnote-1)** |  |
| **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, students will interview an emergency services employee and write a short paper describing the experience. Use the Writing Rubric for assessment. |
| **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)