Fire Safety for Texans

Fire and Burn Prevention
Curriculum Guide Developed by
Texas State Fire Marshal's Office
Texas Department of Insurance

Fourth Grade

Fire Safety: Stop the Heat

Fire Safety for Texans

The complete series from the State Fire Marshal's Office

Kindergarten
Fire Safe Together

First Grade
Fire Safety: Any Time, Any Place

Second Grade
Making Me Fire Safe

Third Grade
Positively Fire Safe

Fourth Grade
Fire Safety: Stop the Heat

Fifth Grade
Charged Up For Fire Safety

Sixth Grade
Fire Safety Power

Seventh Grade
Responsible For Fire Safety

Eighth Grade
Fire Safety's My Job

Health (High School)
A Lifetime For Fire Safety

Economics (High School)
Fire Safety For Consumers

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Introduction

Introduction

Why teach fire and burn prevention?

Each year during the past decade, about 300 Texans have died in fires. The State Fire Marshal's Office is committed to reducing this alarming statistic. Analysis of fire statistics shows that the vast majority of fires — and the resulting fire deaths — could have been prevented. Regretfully, most people do not know or practice even simple actions that can prevent fires and burns.

The State Fire Marshal's Office believes the key to reducing fires and fire deaths is education. Fire safety education has traditionally been concentrated in elementary school observances of Fire Prevention Week. While these observances can produce effective results, thoughtful analysis of the fire problem and fire safety educational programs shows that a more comprehensive, age-appropriate approach to fire safety education can multiply its benefits.

Recognizing the limits of classroom instruction time, the State Fire Marshal's Office has examined the Texas essential elements of instruction to determine the most appropriate topics with which to integrate fire prevention and fire safety. Teachers from across the state have provided feedback on topics appropriate for each grade level.

The result of this extensive research is "Fire Safety for Texans," a series of curriculum guides teaching fire and burn prevention. Each grade-level program has been coordinated with essential elements in that grade and with the unique specific fire safety needs of that age group. The lesson plans have been field tested in classrooms across the state. On average, students who have been taught using these materials score 26 percent higher than students in control groups.

As you use this guide, you and teachers in other grade levels will be part of a continuum of fire safety education spanning all grades. The State Fire Marshal's Office believes this continuum will help create a generation of Texans who will be fire-safety aware. In turn, all Texans can benefit from a decrease in the number of needless fire deaths and an increase in safer homes and worksites — a benefit we all deserve.

This Booklet

This booklet, **"Fire Safety: Stop the Heat,"** is specifically designed for fourth-grade students. The following sections give specific information on the essential elements applicable to fire and burn prevention and on the age-specific needs of fourth-grade students related to fires and burns. You will also find additional information on the format and materials found in this booklet.

This booklet has three sections:

- **Lesson Plans.** This section includes all steps in the lesson cycle.
- **Teacher Materials.** This section includes all teaching aids and tests.
- **Student Materials — Duplicating Masters.** This section includes master copies of materials to be used by students.

General Objectives: To understand principles of extinguishing fires

To investigate issues related to peer pressure related to fire setting

To develop self-motivation to effect changes with family involvement

To explore the role of the fire service in the community

Essential Elements: The student will be provided opportunities to:

§75. 26 (e) 3B. recognize interdependence of people and the environment, and recognize personal responsibility for protecting the environment.

§75. 29 (e) 1A. accept the responsibilities of membership in various groups.

§75.25 (e) 4B. describe objects, organisms, and events from the environment.

§75.25 (e) 6A. predict the outcomes of actions based on experience or data.

§75.25 (e) 7B. relate classroom objects, science principles, and activities to daily life.

§75.25 (e) 8B. state relationships among objects, organisms, and events using operational definitions.

§75.26 (e) 1F. practice general emergency procedures.

§75.26 (e) 1G. recognize hazards in the environment, and acquire knowledge and skills needed to avoid injury and to prevent accidents.

§75.26 (e) 2A. recognize benefits and limits of advertising as it relates to selection of health ... products.

§75.26 (e) 2C. recognize the health of the family depends upon contributions of each of its members.

§75.26 (e) 3A. recognize scope of services provided by community health agencies.

§75.29 (e) 1C. explain how groups influence individual behavior.

Science Content: Content from the sciences that shall be emphasized at the grade level shall include:

Life Sciences

1.4 structure and function of the human body.

1.6 ecology ... interdependence of living things.

1.7 application of life science to careers and everyday life.

1.8 human responsibility regarding life science phenomena.

Background: Age Profile

Stage of industry vs. inferiority, which means the child needs to stay constructively busy. Because many differences in abilities are becoming more evident, comparisons among children should be avoided.

Areas of development include neuromuscular and social. The child is developing many new physical skills, both gross and fine motor skills. He is making a social move from the home into peer groups and school. He is developing his own self-attitudes and seeks significant human relationships.

Operating under the morality of cooperation, the child sees rules as mutual agreements made by those affected and involved in the situation. She tends to obey rules out of respect. The child can understand causes and consequences of actions.

The child is capable of concrete operations, which means he can solve a variety of problems using concrete objects, and may be capable of formal operations, in which concrete objects are no longer needed for problem solving. He must be active in the instructional process, and activities and materials must be relevant to the child's life or environment. Instruction will be more effective if it involves both the affective and cognitive domains.

Fourth-graders are interested in social, occupational and civic matters and are becoming able to move from the simple to complex, concrete to abstract, undifferentiated to differentiated, discrete to organized.

Fire And Burn Hazards

Curiosity about fires — playing with matches, lighters, candles, fireplace, heaters, other locations where a flame can be observed; overconfidence in dealing with fires.

Scalds — cooking; tap water; hot foods, especially heated sweet foods.

Appliances — cooking at stoves or with microwave ovens, especially unsupervised; overconfidence in using appliances, such as irons, toasters, etc.

Clothing ignition — playing with matches; flammable clothing and costumes; walking or sleeping too close to heater or other open flame; knowing how to reduce injury.

Outdoor hazards — campfires and barbecues; mini-bikes and lawn mowers; fireworks; high-tension wires.

Other — flammable liquids; fires caused by parents' smoking; injury from smoke and fire gases; knowing how to escape from fire.

Teacher's Note On Materials: Illustrations and activity sheets in this booklet are intended to serve as masters. Photocopy them and use as directed.

Pre-Test and Post-Test: conduct pre-test prior to presenting first lesson and post-test following fifth lesson.

Teacher's Note on Closure Activities: Some activities included in the closure phase of the lesson cycle may be effectively used in the next lesson's focus activity.

Key To Icons: The following icons can be used to easily identify activities in the lesson plans:

 Lesson objectives

 Focus and closure

 Creative group activity, including role playing

 Lecture

 Group problem-solving activity

 Answering questions

 Guest presenter

 Investigation or research

 Creative writing activity

 Cut-and-paste activity

 Group discussion

 Drawing, artwork or illustration

Lesson Plans

LESSON ONE:

Science of Fire

Goal: *To apply knowledge of fire elements to prevent and extinguish fires*

Objectives: The student will:

- interpret three elements of fire to explain how to prevent and extinguish fires *25(e)8B, 26(e)1G
- demonstrate reactions to hazardous situations, including removal of fire hazards *26(e)1F

* See "Essential Elements."

Materials: Pre-test (p. 13); "Science of Fire" overhead transparency (p. 14); Letter to parents/guardians (p. 23); "Science of Fire" activity sheet (p. 24); "You're Out" activity sheet (p. 25); answer keys (pp. 20-21).

Focus: Administer pre-test.

Briefly discuss two meanings of "heat." (High temperature, emotional pressure.) Ask selected students to share experiences with the two kinds of heat.

Introduce unit on fire prevention by telling students that in the unit, they will be studying ways to stop both kinds of heat: the heat that can cause fires and the emotional pressure that they can feel to become involved in starting fires.

List unit objectives:

- To understand principles of extinguishing fires
- To investigate issues related to peer pressure related to fire setting
- To develop self-motivation to effect changes with family involvement
- To explore the role of the fire service in the community

Outline lesson objectives (paragraph above).

Presentation Of Content: Introduce and/or review the use of operational definitions.

Teacher: "Fire prevention is actually a science. Fire experts work with heat sources and flammable objects in the same way that, for example, chemical scientists work with different kinds of chemicals."

"In conducting science studies, it is important for the scientist to clearly understand how everything he or she is studying is related. One method that scientists use to clearly understand what they are studying is by preparing operational definitions."

Briefly review the general concept of definitions. (Telling what a word means.) Explain that an operational definition tells what the object does and how it is related to other objects.

Display "Science of Fire" overhead transparency, showing only the fire triangle. Have students describe the triangle and the three elements of fire. (For most students, this discussion will be a review.)

Using the fire triangle and the student's experience, have students prepare a simple operational definition of "fire." (Accept reasonable answers. The purpose is to write a reasonable definition, not an exhaustive definition. One option: Fire is a destructive force that occurs when heat, oxygen and fuel are combined.) Write the definition on the chalkboard.

Guided Practice: Distribute "Science of Fire" activity sheet, and reveal lower portion of "Science of Fire" overhead transparency. Discuss the three elements of fire, and assist students in preparing operational definitions.

Read "Fires can be prevented by keeping these three elements apart." Emphasize that scientists study heat and fuel sources to learn more about how fires start and how they can be prevented. Have students write an operational definition for fire prevention.

Independent Practice: Distribute "You're Out" activity sheet. Direct students to read the first box in each line, then write what could be done to prevent or put out the fire in the second box. Have students circle the element of fire that was removed.

Reteaching: Display the fire triangle on the overhead transparency. Have students list where they could find each element in the room. Discuss why it is important to keep the three elements of fire apart to prevent fires.

Enrichment: Have students write their own situations, similar to the boxes on the independent practice activity sheet. Have students exchange what they have written, then write what could be done to prevent or put out the fires in the situations their fellow students have written.

Closure: Distribute the letters to parents/ guardians; and have students discuss what they learned about extinguishing, or putting out, fires in the first lesson. Emphasize the importance of sharing what they learn with their families.

Introduce the next lesson by telling students that they will be looking at ways to apply what they know about keeping the elements of fire apart. Ask them to think about how outdoor fires might be started.

LESSON TWO:

Pressure – Off

Goal: *To recognize peer pressure relating to hazardous activities and to practice methods of overcoming that pressure*

Objectives: The student will:

- describe types of hazards from discarded cigarettes *26(e)1F
- describe safe practices with fireworks *26(e)3B, **1.6
- write at least five rules for outdoor fire safety *26(e)3B
- demonstrate resisting peer pressure related to fire, matches and smoking *29(e)1C, **1.8

* ** See "Essential Elements."

Materials: "What Kind of Fires?" overhead transparency (p. 15); "The Fire Safety Club" question cards and game sheet (pp. 26-27); toothpicks; writing paper.

Focus: Have students discuss what they think causes outdoor fires. Point out that, like most building fires, most outdoor fires are caused by the careless actions of people, not by natural accidents. Tell students that in this lesson, they will focus on three major causes of outdoor fires and how they can help prevent outdoor fires.

Outline lesson objectives (paragraph above).

Presentation Of Content: Display "What Kind of Fires?" overhead transparency. Have students estimate the number of fires caused by fireworks, careless smoking and children playing with fire. Compare the amount of property damage caused by the three types of fires shown on this chart.

Note: This chart illustrates only outdoor fires caused by fireworks, careless smoking and children playing with fire. It does not include all outdoor fires.

Teacher: "These fires are caused by persons who are careless or who don't care what is damaged by the fire. Preventing fires means that we must each look at how our careless actions might cause fires. We must also consider who could be hurt or what could be damaged by fires that might be caused by our careless actions."

Divide students into six groups, and have each group discuss the damage that might be caused by an outdoor fire. (Trees killed, grass removed so that erosion occurs, persons in the area burned or killed, buildings nearby damaged.)

Guided Practice: *Group discussion and decision-making.* Maintain the six groups of students. Tell students that they will discuss how outdoor fires are caused. Assign two groups to discuss careless smoking, two groups to discuss fireworks, and two groups to discuss children playing with fire.

Distribute writing paper. Have each group write five ways that an outdoor fire might be started. For each fire cause, have the group write a rule on preventing outdoor fires.

Possible answers:

Careless smoking

Cause of fire	**Fire prevention rule**
Throwing cigarette butts from the car window.	Don't throw cigarettes from the car; use an ashtray.
Dropping cigarettes on the ground.	Put out with water, and put in trash can.
Throwing hot matches on the ground.	Put out with water, and put in trash can.

Fireworks

Cause of fire	**Fire prevention rule**
Letting hot fireworks touch grass or trees.	Use fireworks only in clear areas, without plants.
Shooting aerial fireworks without knowing where they will land.	Use fireworks only in areas with large open spaces, or don't use fireworks at all.
Leaving matches and punks on the grass.	Put out with water, and put in trash can.

Children playing with fire

Cause of fire	Fire prevention rule
Allowing children to get matches or lighters.	Keep matches and lighters stored safely where children cannot reach them.
Letting a friend talk you into striking matches.	Tell your friends that matches are dangerous.
Burning leaves or grass to see what happens.	Stay away from anyone who wants to set anything on fire.

Accept other reasonable answers.

Have each group briefly present their material; discuss differences and similarities among the groups.

Independent Practice: *Role-playing activity.* Distribute "The Fire Safety Club" question-card sheet and game sheet to all students. Divide students into pairs; have each pair cut out the cards and playing pieces. Direct students to read and follow the directions to play the game.

The objective of the game is to reinforce positive attitudes toward resisting peer pressure and to provide students an opportunity to share those positive attitudes.

Reteaching: Have students contact the local fire department to learn how many outdoor fires occurred in their community in the past year. Ask students to prepare graphs showing the number of fires caused by careless smoking, fireworks and children playing with fire.

Invite a fire investigator to discuss how he or she determines that a fire was caused by careless smoking, fireworks or children playing with matches or other fire cause.

Enrichment: Have students compile the rules prepared during the guided practice activity, then prepare and distribute flyers or posters with the combined list.

Closure: Ask students to share their experience with the "Fire Safety Club" game. Reinforce positive experiences, and address the concerns of those with negative experiences. Emphasize that everyone can be winners when they practice fire-safe actions.

Introduce the next lesson by telling students that they will be exploring a different topic – how to be prepared in case a fire occurs.

LESSON THREE:

Smoke and Gases

Goal: *To focus on hazards of smoke and toxic gases and to encourage proper maintenance of smoke detectors as safety precaution*

Objectives: The student will:

- describe characteristics of heated gases from fires *25(e)4B, 26(e)1G
- list and describe effects of toxic gases in smoke and fire byproducts *25(e)7B, 26(e)1G, ** 1.4

* ** See "Essential Elements."

Materials: "Smoke and Gases in Action" overhead transparency (p. 20); "How Fire Products Hurt the Body" activity sheet (p. 28); "What Would Happen?" activity sheet (p. 29); answer keys (pp. 20-21).

Focus: Introduce the lesson by having students close their eyes.

Teacher: "What you see is what most people who die in fires see – just darkness. They were either asleep and never realized there was a fire, or the fire had blocked their vision so that they couldn't see the way out."

Have students open their eyes.

Teacher: "Now, what do you see? (Light, brightness.) Learning about fire and fire prevention is like opening your eyes. You can see the dangers, and that will give you the motivation to prevent fires – or stop the heat, as we've been discussing in this unit."

Outline lesson objectives (paragraph above).

Presentation Of Content: Display "Smoke and Gases in Action" overhead transparency.

Teacher: "The largest number of fire deaths occur in rooms very similar to this one. The major difference is that this room has a smoke alarm that is warning people in the home that there is a fire."

Read and discuss the information in the box, which lists the principle fire by-products that affect people and their effects on the body. Point out that, while the words

may difficult to learn, what these by-products do to the body should be easy to remember.

Note: Some students may be uncomfortable with this information. Encourage students to discuss how they feel. Remind them that this information isn't intended as a "scare tactic," but is an accurate description of facts.

Guided Practice: Continue to display "Smoke and Gases in Action." Distribute "How Fire Products Hurt the Body." Have students read the words in the word list, then write the words next to the part of the body that the product can affect. Note: Words may be used more than once.

Divide students into small discussion groups. Have students discuss how this information affects how they feel about smoke alarms. Ask them whether this motivates them to check their smoke alarms at home.

Independent Practice: Distribute "What Would Happen?" activity sheet. Have students read and answer the questions.

Reteaching: Invite an emergency medical technician or emergency care nurse to talk about how fires affect the body. Have the guest specifically discuss the fact that most fire deaths caused by inhaling toxic gases, not by burns.

Enrichment: Have students write a letter to their parents describing what they have learned about fire by-products. Encourage the students to share how they feel about being sure that the smoke alarms in the home are working properly.

Closure: Briefly review correct answers to the independent practice activity sheet. Have students that completed the enrichment activity share the letters they wrote.

Introduce next lesson by telling students that they will learn more about smoke alarms and other fire safety devices. Have them look for smoke alarms in their homes and other buildings and be prepared to discuss what they see in the next lesson.

LESSON FOUR:

Safe Get-Away

Goal: *To recognize methods of escaping and reporting fire*

Objectives: The student will:

- identify safety features in school, home and other buildings *26(e)1F,1G
- describe local locations and uses of fire alarm boxes *26(e)1F
- explain need for exit plans and drills, especially at home *25(e)6A, 26(e)1F,2C, 29(e)1A, **1.8

* ** See "Essential Elements."

Materials: "Helps For A Safe Get-Away" overhead transparency (p. 17); "Safety Features In Our Building" activity sheet (p. 30); writing paper; answer key (p. 21).

Focus: Ask students to share what they found in their search for smoke alarms in their homes and other buildings. Look for smoke alarms in the classroom. (Probably none are located in the classroom.)

Teacher: "Smoke alarms are most commonly used in homes because of the great danger of dying or being injured by smoke from a fire while you are sleeping. In buildings such as schools, stores and other business buildings, other types of methods of controlling fires or avoiding injuries are used. In this lesson, we will learn about some of these methods."

Outline lesson objectives (paragraph above).

Presentation Of Content: Display "Helps For A Safe Get-Away" overhead transparency. Explain that the illustration shows six of the most common types of fire-safety devices used in buildings other than homes. Beginning with item A, have the students describe what they see and what they think it does. Then write the correct identification in the blank and provide the following information.

A: Fire suppression sprinkler, or fire sprinkler. Located on ceilings or walls. Is set off by high temperature immediately below or nearby. Usually set off one at a time. Most commonly used in buildings where fire damage could be catastrophic, such as inventory storage areas or large meeting rooms (movie theaters, etc.)

B: Smoke alarm, or smoke detector. (Alarm is a more accurate description, because it sounds an alarm when smoke is detected.) Located on ceilings or walls. Detects smoke particles and sounds an alarm. May be linked to other alarms or an alarm system. Most commonly used in residential buildings (houses, dormitories).

C. EXIT sign. Located on exit doorways, or immediately next to exit doorways. Most fire safety codes require the sign to be lighted. Usually red, although some signs are now green because some fire safety experts say that green is more visible through smoke.

D: EXIT directional sign. Located in hallways, usually every 10-15 feet (spans are determined by the fire code). Arrows point to the nearest fire exit. Some codes require EXIT directional signs to be lighted.

E: Fire alarm pull station. Located on wall, usually about four feet from the floor. Usually used in buildings with large numbers of people, who could notice fires before automatic systems.

F: Fire exitway. Hallway or stairs leading out of the building. Separated by a fire-resistant door, which must be kept closed except when someone is passing through.

Discuss the importance of knowing about fire exitways. Explain that the purpose of fire exit drills is to be sure that everyone is aware of the fire exits.

Guided Practice: *Investigation.* Distribute "Fire Safety Features In Our Building" activity sheet. Divide class into teams of three students each. Have each team read the directions and complete the activity. Monitor students as they search for the various types of fire-safety equipment.

Evaluate students on their observations and accuracy in recording their observations.

Independent Practice: *Creative writing activity.* Distribute writing paper. Direct students to write a paragraph on the following question:

Why is it important to plan for fires by having fire exit drills, especially at home?

Evaluate students on their awareness of the need to prepare for fire emergencies.

Reteaching: Invite the school safety director to talk about fire safety features of the building discussed in the lesson. Ask him or her to explain why these items are important.

Enrichment: Have students investigate fire safety features in other buildings, such as stores, office buildings or malls.

Closure: Have selected students read the paragraphs they wrote. Reinforce statements and opinions that reflect an awareness of the importance of fire planning. Briefly review the fire safety devices presented in the lesson.

Introduce the final lesson by asking students to write down four different things that a fire department does. Tell students that in the last lesson they will learn several ways that fire departments help "stop the heat."

LESSON FIVE:

Emergencies

Goal: *To explore the fire fighter's role in community safety*

Objectives: The student will:

- list the four primary services provided by the fire services *26(e)3A
- describe fire department's role in helping the community stay safe and healthy *26(e)3A, **1.7

* ** See "Essential Elements."

Materials: Chalkboard or blank overhead transparency; "Emergency Answers" overhead transparency (p. 18); "Emergency Answers" activity sheet (p. 31); writing paper; post-test (p. 19); answer keys (pp. 20-21).

Focus: Briefly review the fire safety equipment presented in the previous lesson. Ask students to share their lists of four things that fire departments do. If possible, write their items on the chalkboard or overhead transparency.

Teacher: "Most of us think that the fire department's only job is to put out fires. But fire departments have several other duties that are just as important."

Outline lesson objectives (paragraph above).

Presentation Of Content: Write the following words on the chalkboard or overhead transparency: inspection, suppression, rescue, investigation.

Teacher: "These four words describe the four primary duties of a local fire department. First, the fire department is responsible for fire inspections."

Ask students to define inspection. (Checking or looking for problems.)

Teacher: "During a fire inspection, the inspector searches for problems that could cause a fire. By conducting inspections, the fire department can help prevent fires.

"The second responsibility is suppression. The dictionary defines 'suppression' as the act of stopping or putting down. Fire suppression means to control or put out the fire.

"The third responsibility is rescue. How are fire departments involved in rescues?"

(Getting people from fires and other accidents, but only when it is safe for the fire fighter; accept additional reasonable answers.)

"The fourth responsibility is investigation. What does 'investigation' mean? (Looking closely for facts.) The fire department investigates most fires to determine how they started. Investigating a fire is very important, especially if the fire department thinks it might have been started on purpose."

Guided Practice: Distribute "Emergency Answers" activity sheet, and display "Emergency Answers" overhead transparency. Direct student attention to the word list. Have students complete the puzzle, working in small groups. Option: Complete the puzzle as a whole-class activity.

Independent Practice: Have students select from the following two activities:

- Talk with a fire fighter about his or her job, and write a short report.
- Write a short paper on how you would help the community by being a fire fighter.

Both activities should include references to information presented during this unit. Encourage students to include information on the three elements of fire, how fire byproducts can hurt the body, and the importance of fire-safety equipment.

Reteaching: Invite a fire fighter, fire inspector or fire investigator to tell the students why his or her job is important. Ask the guest to emphasize how the fire department helps the community stay safe and healthy.

Enrichment: Have students check local newspapers for articles about fire department activities. Have them classify the fire department's activities into the four categories of services.

Closure: Briefly review concepts presented during the unit. Discuss how students used what they had learned during the unit in writing their papers or reports. Ask students if they are going to change any of their actions or work more with their family to prevent fires.

Administer post-test.

Teacher Supplemental Materials

Name _____

Fourth Grade: Fire Safety: Stop the Heat **PRE-TEST**

Complete the sentences:

1. Fire has (how many?)_____ elements.
2. "Fire prevention" means _____

_____

What could you do to prevent a fire in the following?

3. Someone asks you to play with matches. _____
4. You are shooting fireworks outdoors. _____
5. A dishtowel is on the stove. _____

Circle the correct answer:

6.	A fire makes only smoke and heat.	True	False
7.	A fire can be stopped by taking away oxygen (air).	True	False
8.	A liquid cannot catch on fire.	True	False
9.	A family can work together to prevent fires in the home.	True	False

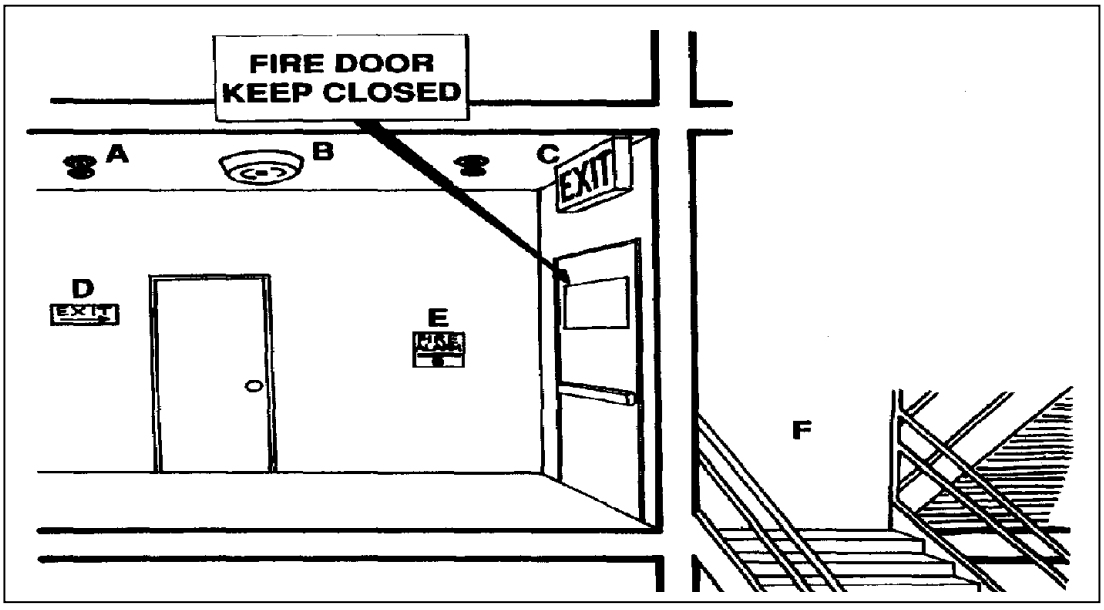
10: List four major jobs of the fire department:

A _____ C _____

B _____ D _____

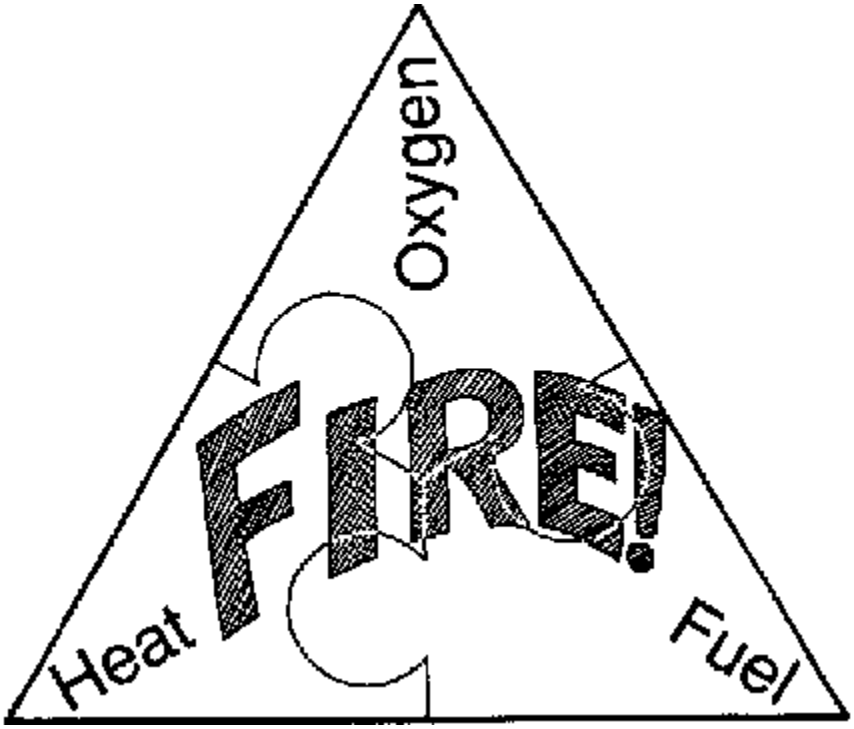
The picture shows six fire safety items. Write the letter of the item by the correct name.

11. ___ fire alarm pull station
12. __ EXIT sign
13. ___ smoke alarm
14. ___ fire sprinkler
15. ___ EXIT directional sign
16. ___ fire exitway



Teacher: Use prior to beginning Lesson One, Page 6. Duplicate for student use.

Science of Fire



Three elements are needed to start a fire and keep it going.

For each word, write a sentence that describes its role in starting a fire.

Heat _____

_____

Fuel _____

_____

Oxygen _____

_____

Fires can be prevented by keeping these three elements from combining.

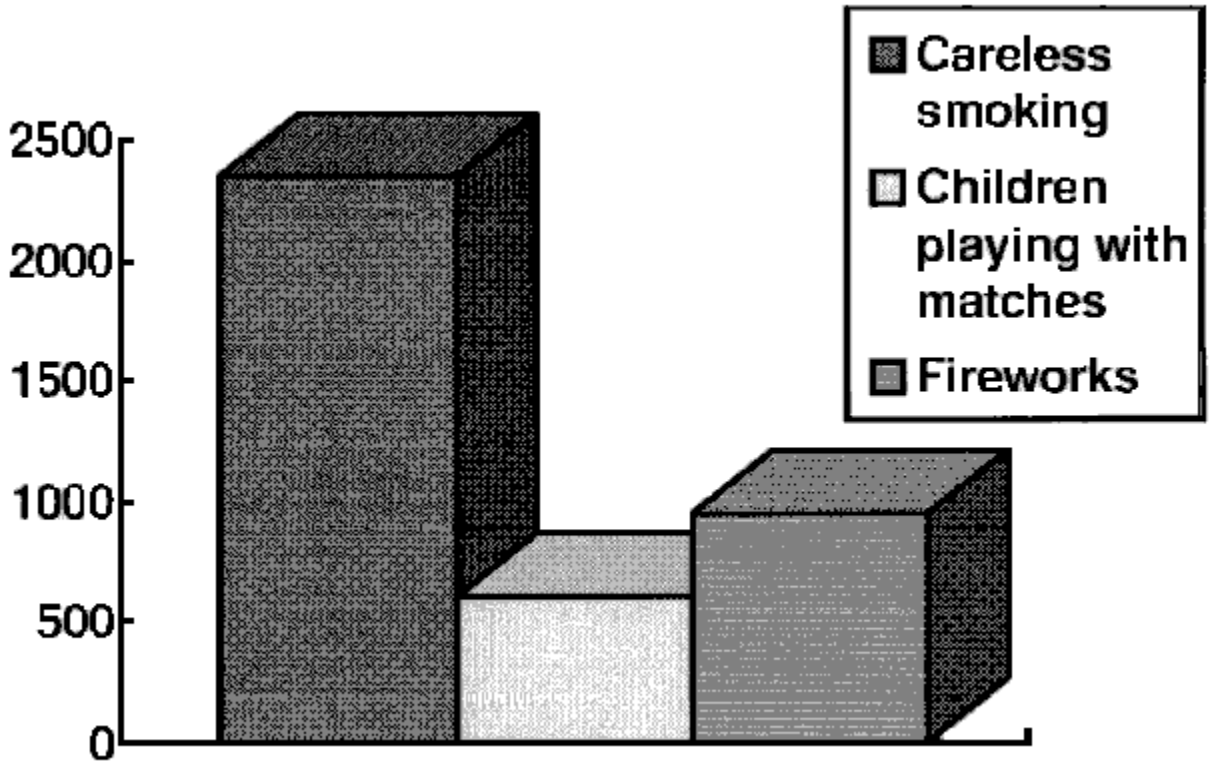
Write a sentence that describes

Fire prevention _____

_____

Teacher: Use with Lesson One, Page 6. Transfer to overhead transparency.

In Texas, how many fires in 1996 were caused by...?



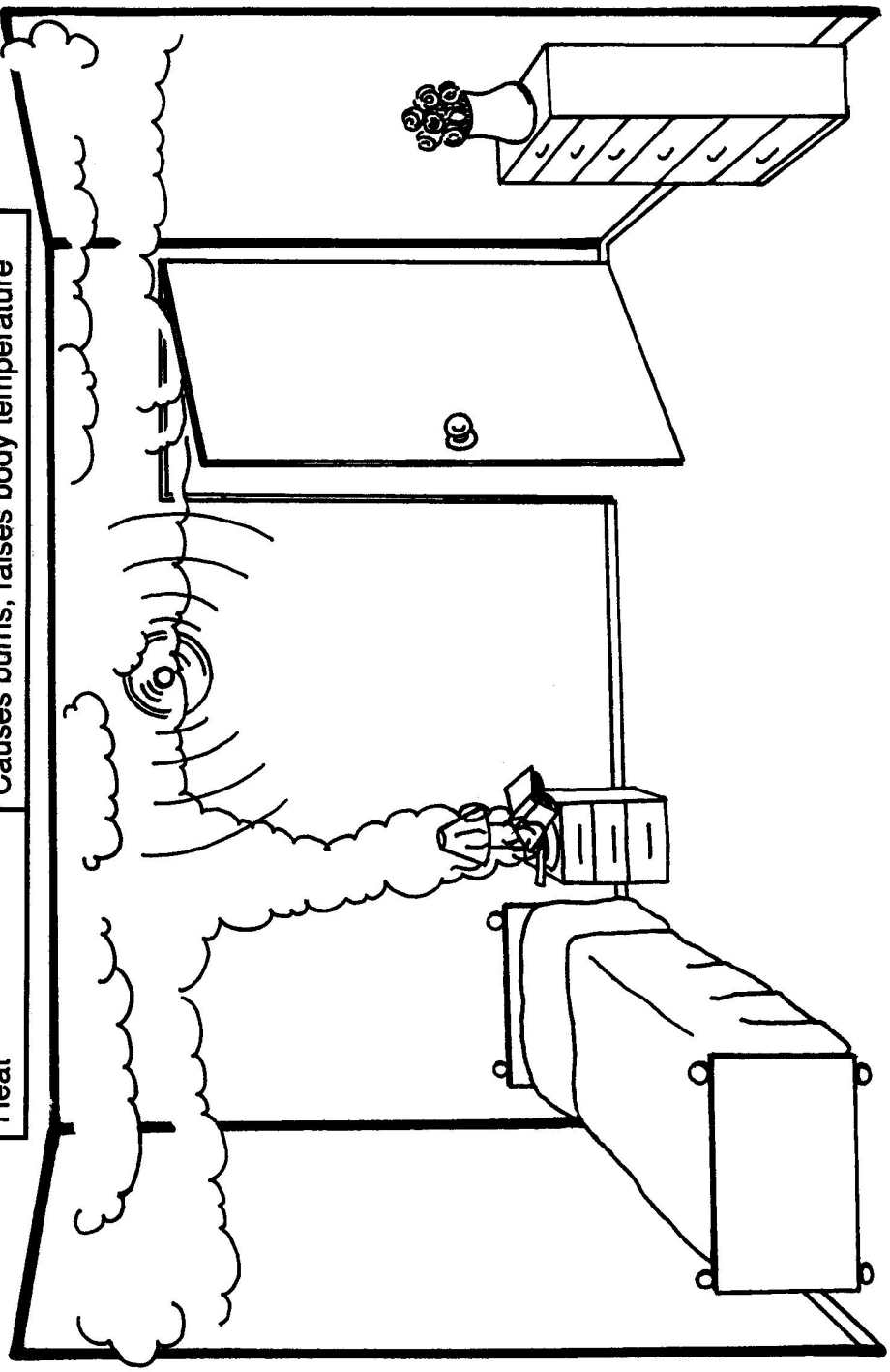
Facts for 1996 from the Texas Fire Incident Reporting System

Careless Smoking	2350
Children playing with matches	603
Fireworks	946

Teacher: Use with Lesson Two, Page 7. Transfer to overhead transparency.

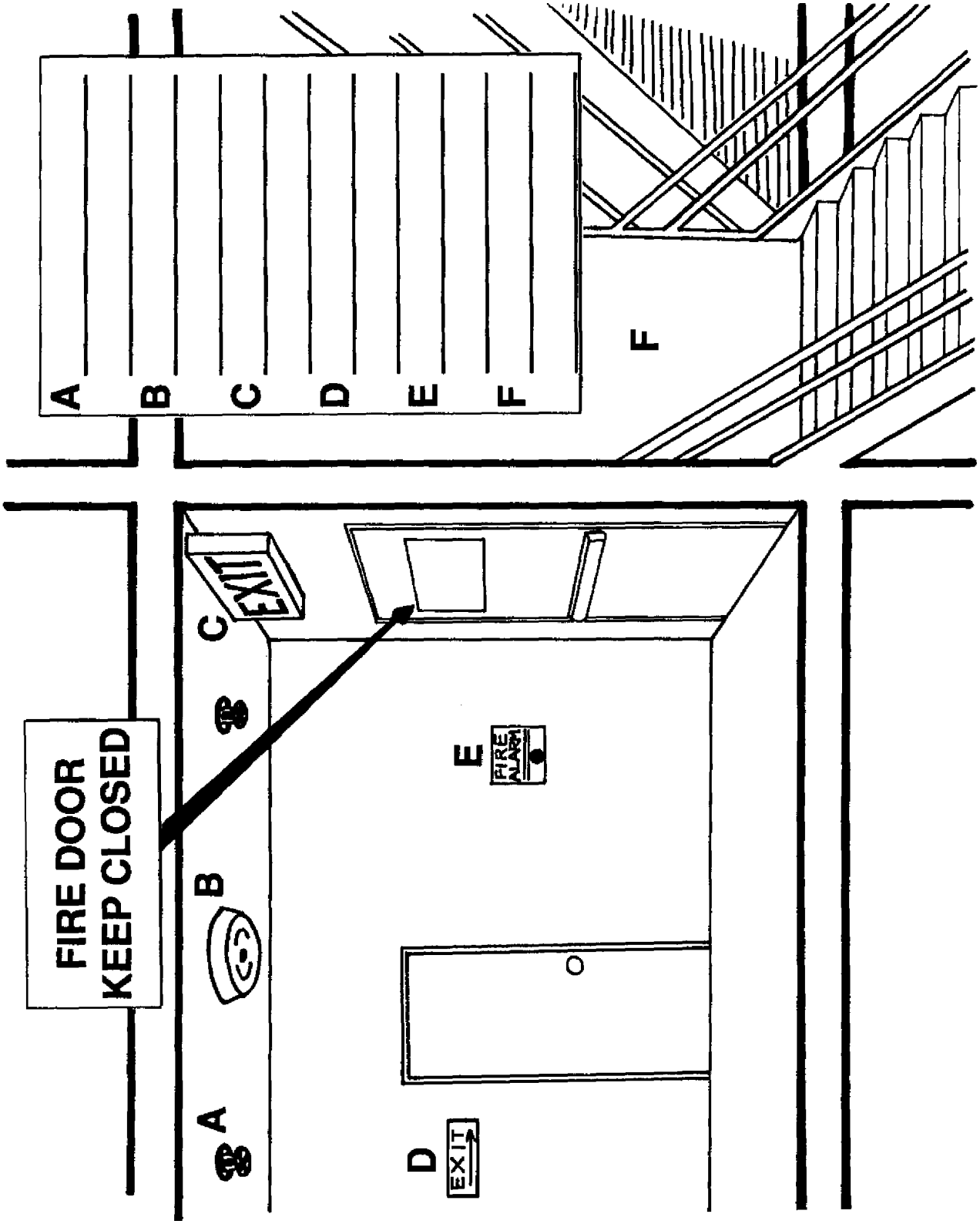
Smoke and Gases in Action

Fire products	What they do
Carbon monoxide	Keeps blood from carrying oxygen
Smoke	Irritates eyes and lungs, blocks vision
Hydrogen cyanide	Prevents cells from using oxygen
Lack of oxygen	Removes body's source of oxygen
Heat	Causes burns, raises body temperature



Teacher: Use with Lesson Three, Page 8. Transfer to overhead transparency.

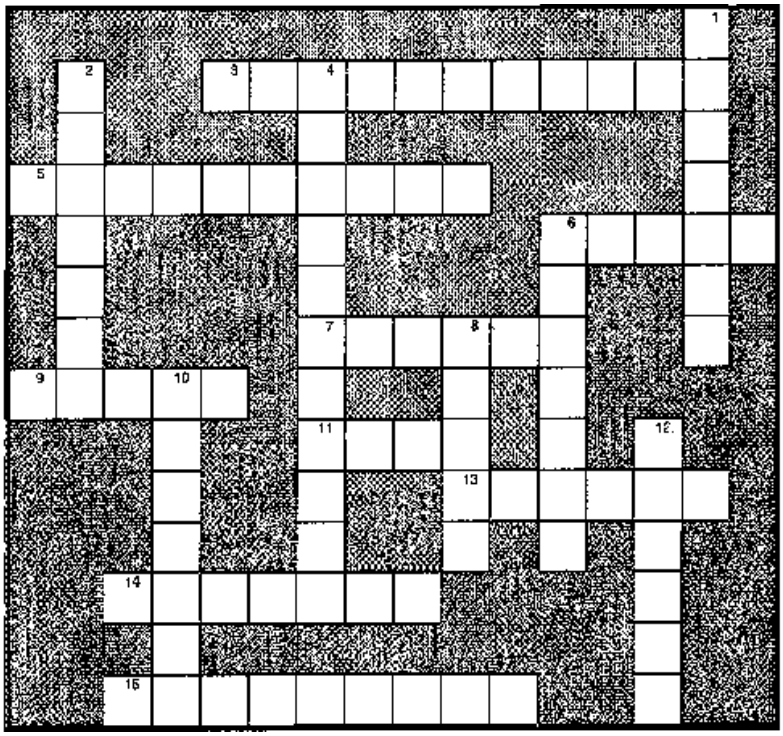
Helps For A Safe Get-Away



Teacher: Use with Lesson Four, Page 9. Transfer to overhead transparency.

Emergency Answers

Crossword Puzzle Activity Sheet



before	prevention
caused	put fires out
check	rescue
clean up	safe
codes	service
correct	stop fires
healthy	suppression
inspect	teach

3. Putting out fires is called _____.

5. Keeping fires from starting is called _____.

6. _____ are rules that tell what to do to prevent fires.

7. _____ means to take someone out of a fire.

9. Fire fighters visit schools and clubs to _____ people how to prevent fires.

11. To be _____ is to be away from fire dangers.

13. Fire investigators look for what _____ the fire.

14. Preventing fires and burn helps us stay _____.

15. The job of the fire service is to _____ _____.

1. Fire inspectors _____ buildings to look for fire dangers.

2. Fire fighters, inspectors and investigators are in the fire _____.

4. Suppression means to _____ _____ _____.

6. Fire fighters also _____ ____ after putting out the fire.

8. To inspect is to _____ for fire dangers.

10. After an inspection, fire inspectors tell the owner how to _____ fire dangers.

12. Look for fire dangers _____ you have a fire.

Teacher: Use with Lesson Five, Page 10. Transfer to overhead transparency.

Name: _____

Fourth Grade: Fire Safety: Stop the Heat **POST-TEST**

Complete the sentences:

1. Fire has (how many?)_____ elements.
2. "Fire prevention" means _____

_____

What could you do to prevent a fire in the following?

3. Someone asks you to play with matches. _____
4. You are shooting fireworks outdoors. _____
5. A dishtowel is on the stove. _____

Circle the correct answer:

6.	A fire makes only smoke and heat.	True	False
7.	A fire can be stopped by taking away oxygen (air).	True	False
8.	A liquid cannot catch on fire.	True	False
9.	A family can work together to prevent fires in the home.	True	False

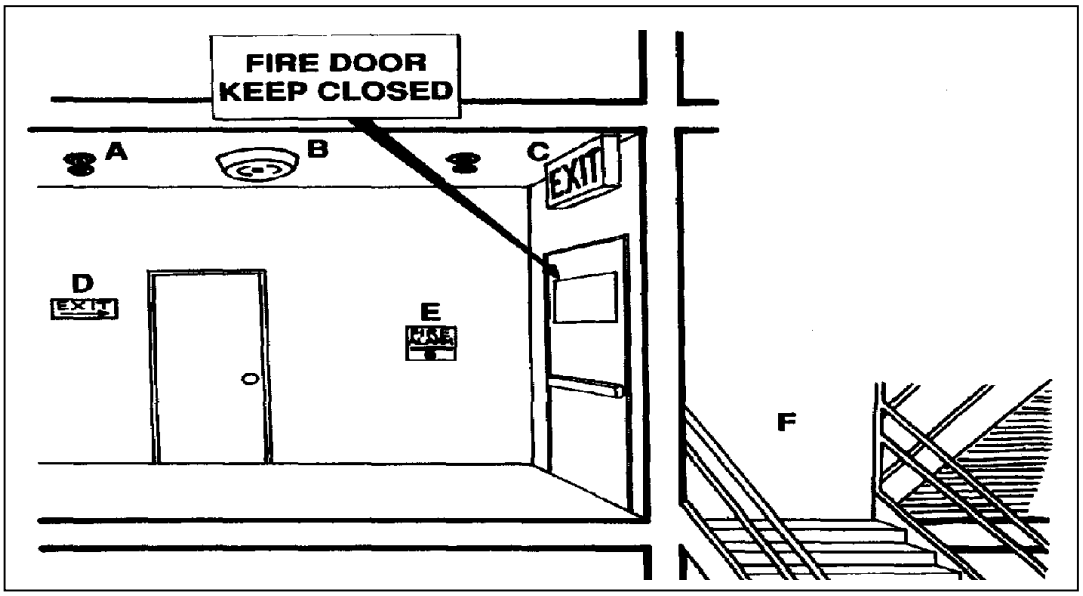
10: List four major jobs of the fire department:

A _____ C _____

B _____ D _____

The picture shows six fire safety items. Write the letter of the item by the correct name.

11. ___ fire alarm pull station
12. __ EXIT sign
13. ___ smoke alarm
14. ___ fire sprinkler
15. ___ EXIT directional sign
16. ___ fire exitway



Teacher: Use following Lesson Five, Page 10. Duplicate for student use.

ANSWER KEY-1

Name _____

Fourth Grade: Fire Safety: Stop the Heat PRE-TEST POST-TEST

Complete the sentences:

1. Fire has (how many?) three elements.
2. "Fire prevention" means keeping heat, fuel and oxygen apart so a fire can't start.

What could you do to prevent a fire in the following? Accept reasonable answers.

3. Someone asks you to play with matches. Say "no" and tell an adult.
4. You are shooting fireworks outdoors. Stay away from grass and trees.
5. A dishtowel is on the stove. Remove the dishtowel.

Circle the correct answer:

6. A fire makes only smoke and heat. True (False)
7. A fire can be stopped by taking away oxygen (air). (True) False
8. A liquid cannot catch on fire. True (False)
9. A family can work together to prevent fires in the home. (True) False

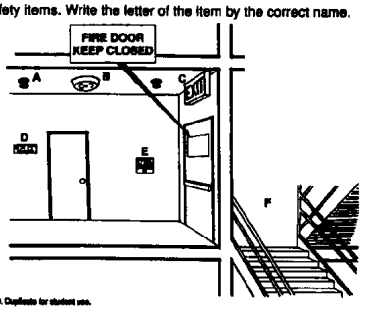
10: List four major jobs of the fire department: (Accept student terms)

A inspection C rescue

B suppression D investigation

The picture shows six fire safety items. Write the letter of the item by the correct name.

11. E fire alarm pull station
12. C EXIT sign
13. B smoke alarm
14. A fire sprinkler
15. D EXIT directional sign
16. F fire exitway



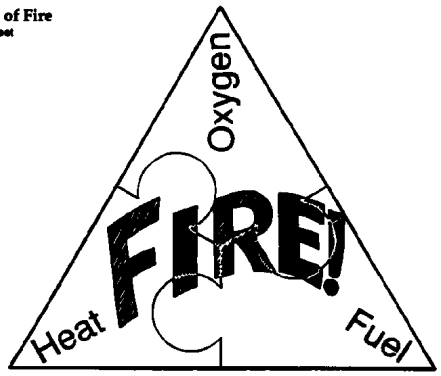
Teacher: Use prior to beginning Lesson One, Page 9. Duplicate for student use.

Fourth Grade: Fire Safety: Stop the Heat

Name _____

Science of Fire

Activity Sheet



Three elements are needed to start a fire and keep it going.

For each word, write a sentence that describes its role in starting a fire.

Heat is one of the three elements of fire that, combined with fuel and oxygen, can cause a fire.

Fuel is one of the three elements of fire that, combined with heat and oxygen, can cause a fire.

Oxygen is one of the three elements of fire that, combined with heat and fuel, can cause a fire.

Fires can be prevented by keeping these three elements from combining.

Write a sentence that describes

Fire prevention is keeping heat, fuel and oxygen from coming together to keep fire from starting.

Teacher: Use with Lesson One, Page 9. Duplicate for student use.

Fourth Grade: Fire Safety: Stop the Heat

Name _____

You're Out!

Activity Sheet

Read the first box, then answer the question in the second box. Circle the element of fire that was removed. Accept other reasonable answers.

A cloth dishtowel is laying on the stove. Mother turns on a burner to boil water.	What can you do to prevent a fire? Remove the towel.	(Fuel)
Grandfather uses an electric heater during the winter. To keep warm at night, he put the heater close to the bed.	What can you to prevent a fire? Keep the heater 3 feet from the bed.	(Fuel)
A pan of hot oil is cooking on the stove. It catches fire.	What can you do to put out the fire? Cover the pan with a large lid.	(Oxygen)
A cigarette is left burning in an ashtray. The ashtray is sitting on the arm of the sofa.	What can you do to prevent a fire? Remove the cigarette.	(Fuel)

Teacher: Use with Lesson One, Page 9. Duplicate for student use.

Fourth Grade: Fire Safety: Stop the Heat

Name _____

How Fire Products Hurt the Body

Activity Sheet

Read the words in the list of fire products (in the table below). Then write the correct words in the box at the bottom of the page.

Hint: Remember that oxygen must go through your lungs to get to your body.

Fire products	What they do
Carbon monoxide	Keeps blood from carrying oxygen
Smoke	Irritates eyes and lungs, blocks vision
Hydrogen cyanide (SIGH-uh-NIDE)	Prevents cells from using oxygen
Lack of oxygen	Removes body's source of oxygen
Heat	Causes burns, raises body temperature

What can harm ...

Eyes? smoke

Nose? smoke

Mouth and throat? smoke

Lungs? carbon monoxide, hydrogen cyanide, lack of oxygen

Entire body? heat

Teacher: Use with Lesson Three, Page 11. Duplicate for student use.

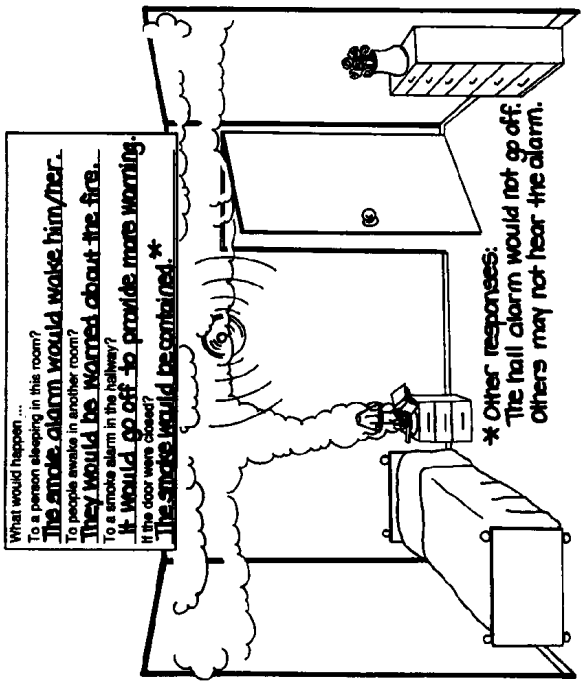
Fourth Grade: Fire Safety: Stop the Heat

ANSWER KEY-2

Name _____

What Would Happen?

Activity Sheet



Teacher: Use with Lesson Three, Page 11. Duplicate for student use.

Fourth Grade: Fire Safety: Stop the Heat

Name _____

Fire Safety Features In Our Building

Investigation Activity

Look around your building. Can you find the fire safety features in the list below? Write what you find in the table below.

Fire sprinkler | Smoke alarm | EXIT sign
EXIT directional sign | Fire alarm pull station | Fire exitway

Accept reasonable answers. Following are possible responses		
EXIT sign	over a door	red or green lighted from inside
EXIT directional sign	in hallway	red or green has an arrow may be lighted
Fire alarm pull station	in hallway	red covered by glass has a small hammer

Teacher: Use with Lesson Four, Page 12. Duplicate for student use.

Fourth Grade: Fire Safety: Stop the Heat

Name _____

Emergency Answers

Crossword Puzzle Activity Sheet

Word List

before	prevention
caused	put fires out
check	rescue
clean up	safe
codes	service
correct	stop fires
healthy	suppression
inspect	teach

Across

3. Putting out fires is called _____.
5. Keeping fires from starting is called _____.
6. _____ are rules that tell what to do to prevent fires.
7. _____ means to take someone out of a fire.
9. Fire fighters visit schools and clubs to _____ people how to prevent fires.
11. To be _____ is to be away from fire dangers.
13. Fire investigators look for what _____ the fire.
14. Preventing fires and burn helps us stay _____.
15. The job of the fire service is to _____.

Down

1. Fire inspectors _____ buildings to look for fire dangers.
2. Fire fighters, inspectors and investigators are in the fire _____.
4. Suppression means to _____ _____.
6. Fire fighters also _____ after putting out the fire.
8. To inspect is to _____ for fire dangers.
10. After an inspection, fire inspectors tell the owner how to _____ fire dangers.
12. Look for fire dangers _____ you have a fire.

Teacher: Use with Lesson Five, Page 13. Duplicate for student use.

Fourth Grade: Fire Safety: Stop the Heat

Student Materials — Duplicating Masters

Letter to Parent(s)/Guardian(s)

Dear Parent (s)/Guardian(s):

Our class is beginning a unit of study on fire and burn prevention titled "Fire Safety: Stop the Heat," which was developed by the State Fire Marshal's Office. The student goals in this unit are:

To understand principles of extinguishing fires

To investigate issues related to peer pressure related to fire setting

To develop self-motivation to effect changes with family involvement

To explore the role of fire service in the community

Fire safety involves every member of the household. This unit is designed to help fourth-graders begin developing an awareness that they can contribute positively to the safety of their families. Your assistance with these activities will be very valuable.

Sincerely,

_____

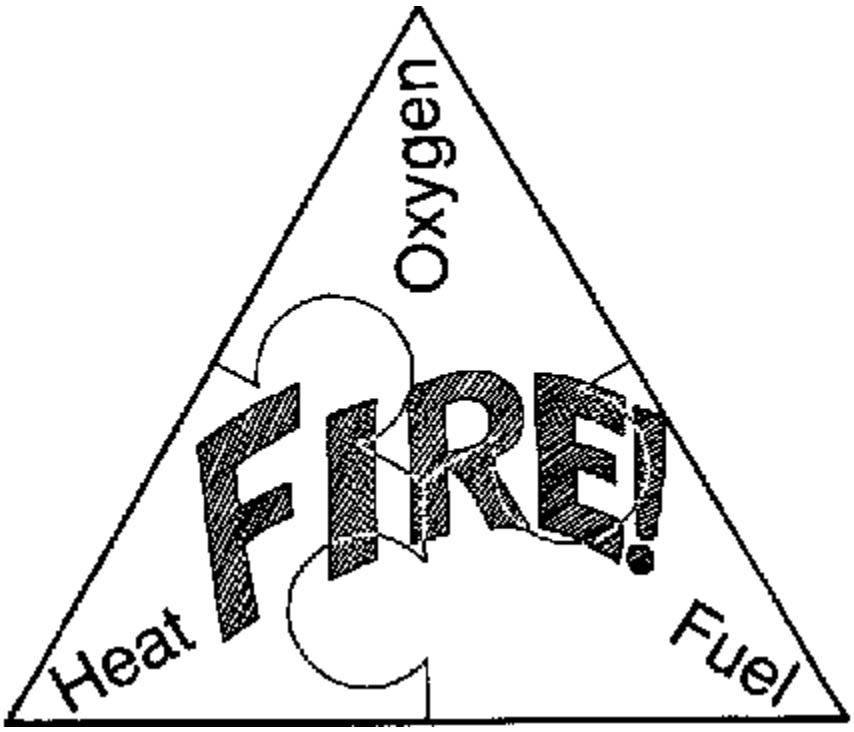
Teacher

Teacher: Use with Lesson One, Page 6. Duplicate and distribute to students when beginning unit

Name _____

Science of Fire

Activity Sheet



Three elements are needed to start a fire and keep it going.

For each word, write a sentence that describes its role in starting a fire.

Heat _____

_____

Fuel _____

_____

Oxygen _____

_____

Fires can be prevented by keeping these three elements from combining.

Write a sentence that describes

Fire prevention _____

_____

Teacher: Use with Lesson One, Page 6. Duplicate for student use.

Name _____

You're Out!

Activity Sheet

Read the first box, then answer the question in the second box. Circle the element of fire that was removed.

A cloth dishtowel is laying on the stove. Mother turns on a burner to boil water.	What can you do to prevent a fire?	**What element was removed?**	Heat Fuel Oxygen
Grandfather uses an electric heater during the winter. To keep warm at night, he put the heater close to the bed.	What can you do to prevent a fire?	**What element was removed?**	Heat Fuel Oxygen
A pan of hot oil is cooking on the stove. It catches fire.	What can you do to put out the fire?	**What element was removed?**	Heat Fuel Oxygen
A cigarette is left burning in an ashtray. The ashtray is sitting on the arm of the sofa.	What can you do to prevent a fire?	**What element was removed?**	Heat Fuel Oxygen

Teacher: Use with Lesson One, Page 6. Duplicate for student use.

Name _____

The Fire Safety Club

Question Cards for Two-Player Cooperative Game

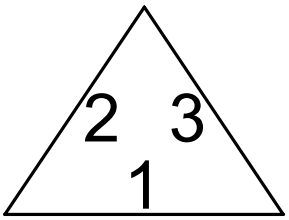
✂ Cut out the cards and playing pieces. Stack the cards upside down. Insert a toothpick halfway through the triangle. Place the game pieces on the starting square.

To play the game, one player spins the triangle, then turns over a card. The player reads the question and gives an answer.

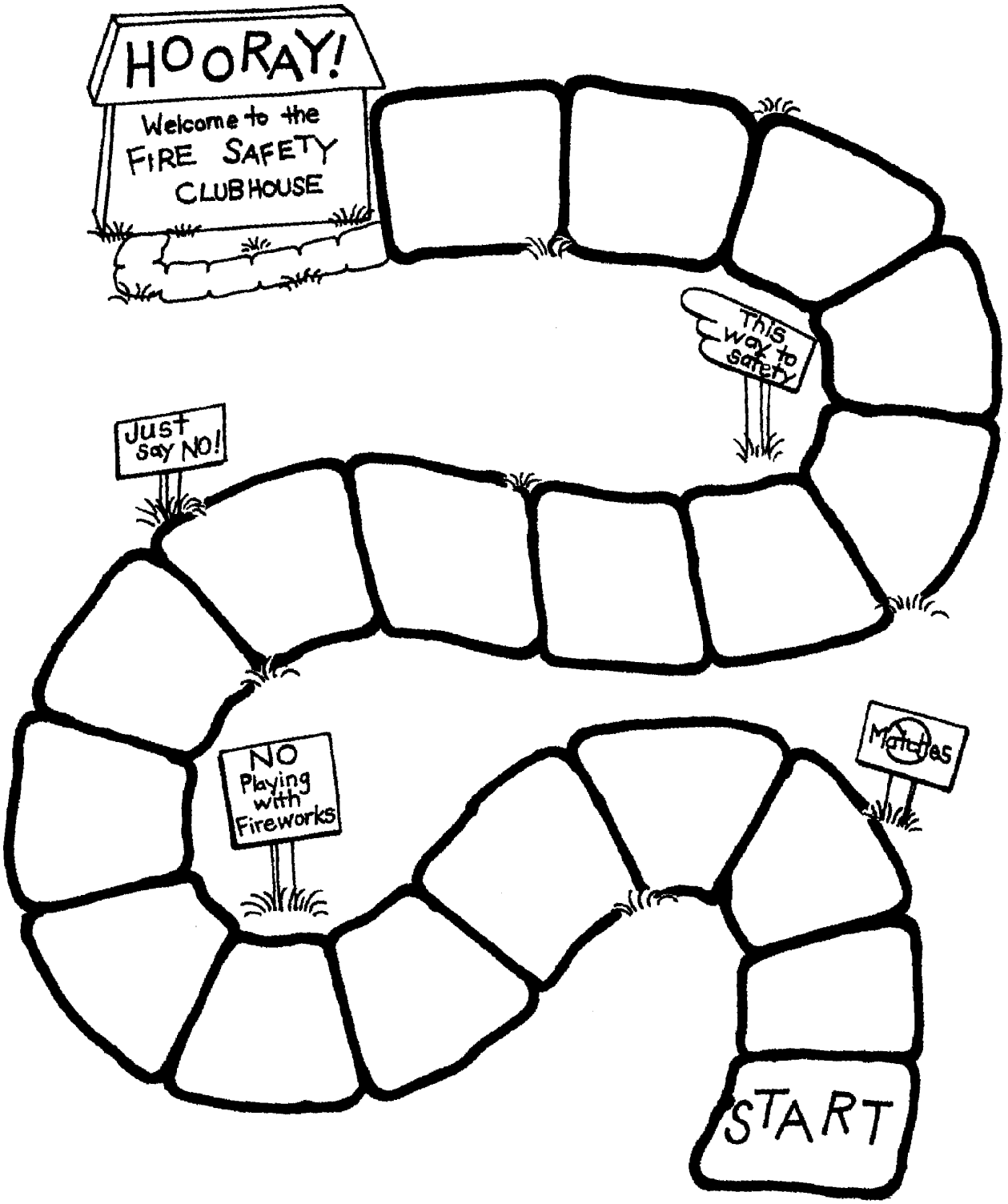
☺ If the other player says that the answer shows safe actions, the first player moves the number of spaces shown on the triangle. Take turns spinning and answering the questions.

◎ The game ends when both players get to the Fire Safety Clubhouse.

You find some matches. What should you do?	Your friend asks you to smoke a cigarette. What should you say?	Your little brother is playing with matches. What should you do?
Your sister is playing with a lighter. What should you do?	Your friend wants to buy a cigarette lighter. What should you do?	An older boy asks you to play with fireworks. What should you do?
There are matches on the bathroom counter. What should you do?	Your friend has some bottle rockets. He asks you to get matches. What should you do?	You're riding in the car with an adult. He rolls down the window to throw out a cigarette. What should you do?
You are camping with your family. Your brother is playing with the campfire. What should you do?	Your brother is putting paper inside the heater. What should you do?	Your sister asks you to show her how to light a match. What should you do?
Your friend wants to see how long a match will burn. What should you do?	Your friend wants to see how fast a stick will burn. What should you do?	Your friend wants to try burning a liquid. What should you do?



Teacher: Use with Lesson Two, Page 7. Duplicate for student use with the Fire Safety Club Game.



Teacher: Use with Lesson Two, Page 7. Duplicate for student use with question cards.

Name _____

How Fire Products Hurt the Body

Activity Sheet

Read the words in the list of fire products (in the table below). Then write the correct words in the box at the bottom of the page.

Hint: Remember that oxygen must go through your lungs to get to your body.

Fire products	What they do
Carbon monoxide	Keeps blood from carrying oxygen
Smoke	Irritates eyes and lungs, blocks vision
Hydrogen cyanide (SIGH-uh-NIDE)	Prevents cells from using oxygen
Lack of oxygen	Removes body's source of oxygen
Heat	Causes burns, raises body temperature

What can harm ...

Eyes? _____

Nose? _____

Mouth and throat?

_____

Lungs?

_____

_____

_____

Entire body?

_____

--Teacher: Use with Lesson Three, Page 8. Duplicate for student use.

Name _____

What Would Happen?

Activity Sheet

Matching Fire Products and Their Effects

What would happen ...
To a person sleeping in this room?

_____

To people awake in another room?

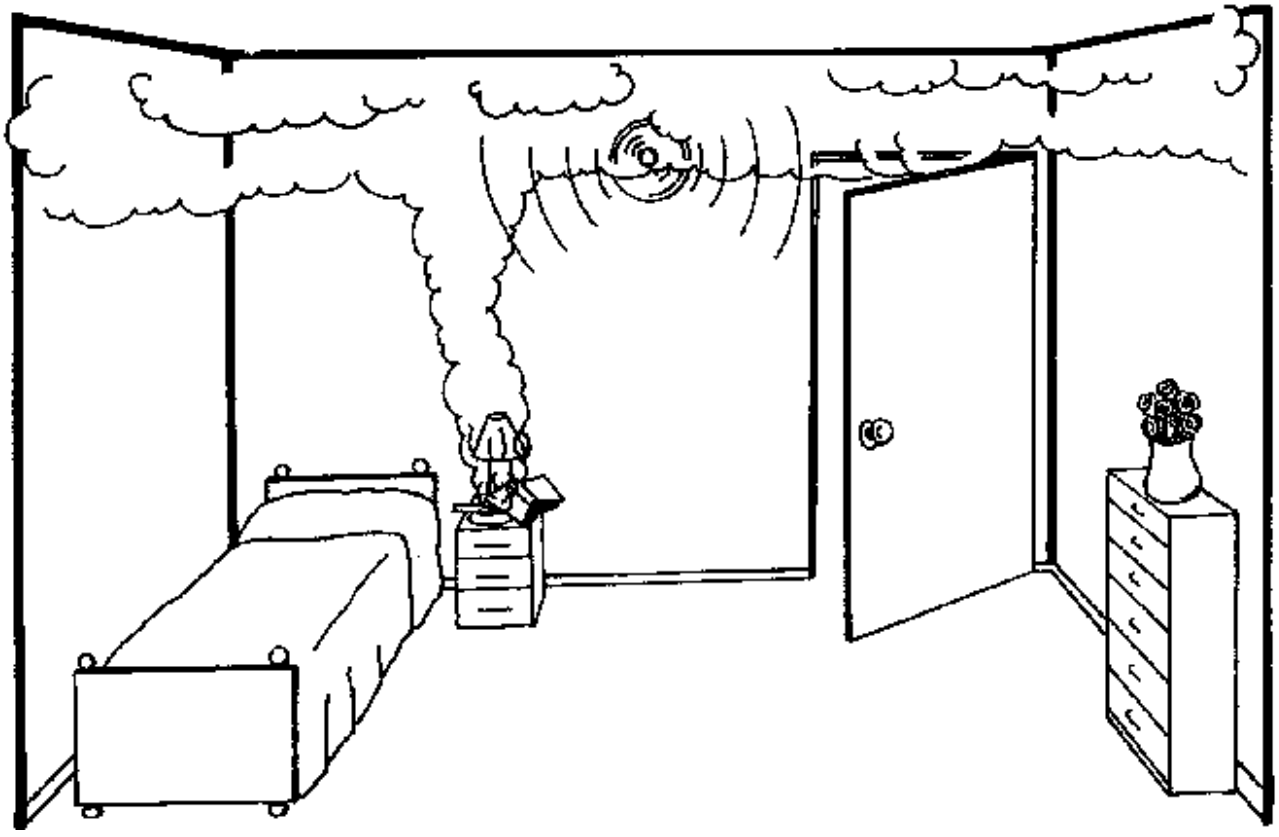
_____

To a smoke alarm in the hallway?

_____

If the door were closed?

_____



Teacher: Use with Lesson Three, Page 8. Duplicate for student use.

Name _____

Fire Safety Features In Our Building

Investigation Activity

Look around your building. Can you find the fire safety features in the list below? Write what you find in the table below.

Fire sprinkler	Smoke alarm	EXIT sign
EXIT directional sign	Fire alarm pull station	Fire exitway

Name	Location	What does it look like?

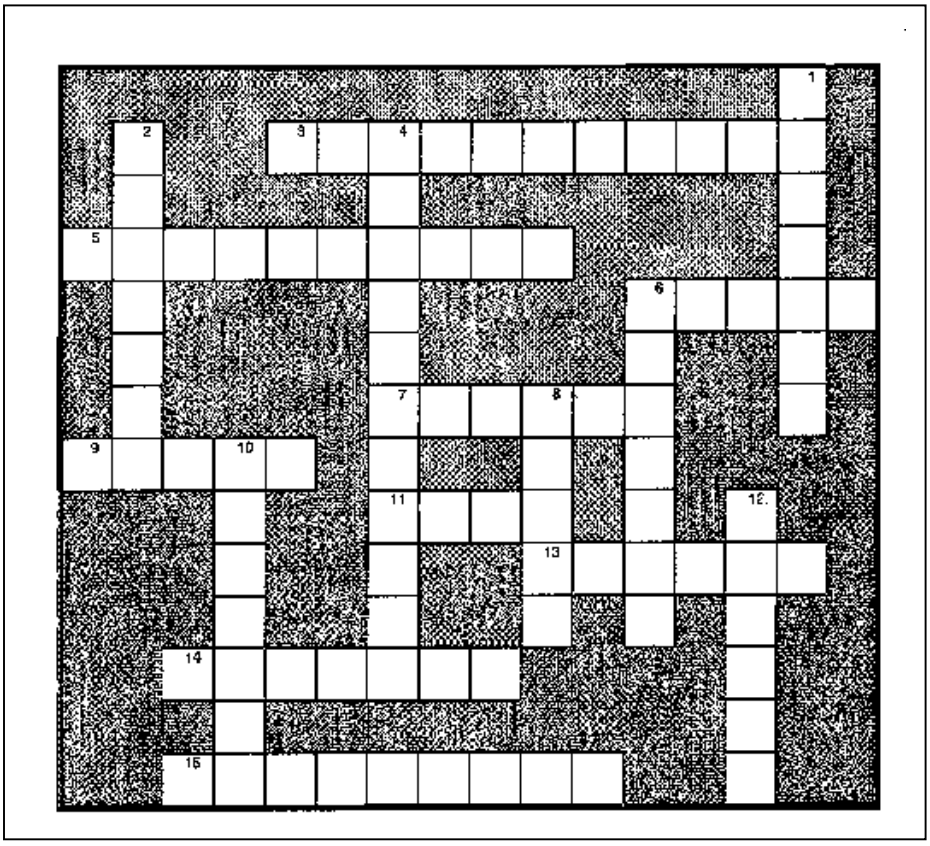
Teacher: Use with Lesson Four, Page 9. Duplicate for student use.

Name _____

Emergency Answers

Crossword Puzzle Activity Sheet

before	prevention
caused	put fires out
check	rescue
clean up	safe
codes	service
correct	stop fires
healthy	suppression
inspect	teach



3. Putting out fires is called _____.

5. Keeping fires from starting is called _____.

6. _____ are rules that tell what to do to prevent fires.

7. _____ means to take someone out of a fire.

9. Fire fighters visit schools and clubs to _____ people how to prevent fires.

11. To be _____ is to be away from fire dangers.

13. Fire investigators look for what _____ the fire.

14. Preventing fires and burn helps us stay _____.

15. The job of the fire service is to _____ _____.

1. Fire inspectors _____ buildings to look for fire dangers.

2. Fire fighters, inspectors and investigators are in the fire _____.

4. Suppression means to _____ _____ _____.

6. Fire fighters also _____ ____ after putting out the fire.

8. To inspect is to _____ for fire dangers.

10. After an inspection, fire inspectors tell the owner how to _____ fire dangers.

12. Look for fire dangers _____ you have a fire.

Teacher: Use with Lesson Five, Page 10. Duplicate for student use.