This booklet comprises the fourth grade component of a series of curriculum guides on fire and burn prevention. Designed to meet the age-specific needs of fourth grade students, its objectives include: (1) understanding principles of extinguishing fires, (2) investigating issues of peer pressure related to fire setting, (3) developing self-motivation to effect changes with family involvement, and (4) exploring the role of the fire service in the community. Texas essential elements of instruction that may appropriately be integrated with the fire prevention curriculum are listed. The booklet's three sections provide lesson plans, teacher materials, and student materials. The five lessons are: "Science of Fire"; "Pressure--Off"; "Smoke and Gases"; "Safe Get-Away"; and "Emergencies." Each lesson plan includes objectives; a list of materials; and suggestions for a focus activity, presentation of content, guided and independent practice, reteaching, enrichment, and closure. A pretest/posttest is provided, along with activity sheets to be photocopied. A scope and sequence chart covering kindergarten through high school is also presented. (JDD)
Fire Safety for Texans

Fire and Burn Prevention Curriculum Guide Developed by Texas Commission on Fire Protection

Fourth Grade

Fire Safety: Stop the Heat
Dear Educator:

The Texas Commission on Fire Protection is pleased to provide this curriculum guide to facilitate the teaching of fire prevention. To understand why instruction in fire prevention must be matched to the developmental needs of students, please read the Introduction section beginning on Page 3. This introduction also tells how fire prevention education can be coordinated with the instructional requirements of Texas schools.

We welcome your comments and suggestions. Please telephone or write to share your successes and questions with our staff. Also, we invite you to request guides for other grade levels and additional copies of this booklet by clipping and returning the form below.

Your involvement in fire prevention education will be appreciated by your students and your entire community.

Sincerely,

[Signature]

Anne Easterling
Program Administrator
Fire Prevention Education

Please send the following curriculum guide(s):

<table>
<thead>
<tr>
<th>Grade Level</th>
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Comments and suggestions on Grade __________ guide(s):

________________________________________________________________________

Are you currently using other materials produced by the Commission on Fire Protection? (Circle one) Yes No

Name ___________________________________________ Position __________________________

Address _________________________________________ Telephone _________________________

City __________________________ State ________ ZIP

Mail to: Texas Commission on Fire Protection, Fire Prevention Education, P.O. Box 2286, Austin, TX 78745
Fire Safety for Texans

Fire and Burn Prevention Curriculum Guide Developed by Texas Commission on Fire Protection

Fourth Grade

Fire Safety: Stop the Heat
Fire Safety for Texans
The complete series from the Texas Commission on Fire Protection

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
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
<table>
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<th>Scope and Sequence for Fire and</th>
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<tr>
<td>Kindergarten</td>
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<tr>
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<td>火灾理解</td>
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<td>灾害评估</td>
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**BEST COPY AVAILABLE**
### Burn Prevention Education In Texas

#### Fifth Grade

- **Health**: Burn prevention education should focus on managing and preventing burn injuries. This includes understanding fire safety and the consequences of burns.

#### Sixth Grade

- **Science**: Students should be able to explain the different types of burns and their effects on the body. They should also be able to describe the stages of healing and the importance of seeking medical attention.

#### Seventh Grade

- **Social Studies**: Through case studies, students can learn about the history of burn prevention and the impact of burn injuries on individuals and society.

#### Eighth Grade

- **Math**: Use real-world applications to teach burn prevention, such as calculating distances and areas to prevent burns from hot surfaces or objects.

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**Burn Prevention Education In Texas**

- **Eighth Grade**: Focus on the psychological impacts of burn injuries, including how to handle grief and support for those affected.

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**BEST COPY AVAILABLE**
**Essential Elements**

Current essential elements as defined by Chapter 75 of the Texas Education Code that apply: The students shall be provided opportunities to:

**Kindergarten**

- use comparatives: smaller, larger.
- classify objects by comparing similarities and differences.
- arrange events in sequential order.
- recognize hazards in the environment and acquire knowledge and skills needed to avoid injury and to prevent accidents.
- identify examples of right and wrong behavior.
- discuss ways people can help each other.
- practice rules of safety.
- recognize safety symbols.

**First Grade**

- observe properties of objects, organisms, and events from the environment.
- classify objects, organisms, and events from the environment according to similarities and differences.
- describe objects, organisms, and events from the environment.
- predict the outcomes of actions based on experience or class.
- recognize hazards in the environment, and acquire knowledge and skills needed to avoid injury and to prevent accidents.
- recognize the health of the family depends upon contributions of each of its members.
- recognize independence of people and the environment, and recognize personal responsibility for protecting the environment.
- identify school and community rules (laws).
- identify authority figures in the community.
- know geographical location of home in relation to school and community.

**Second Grade**

- classify matter and forces, organisms, actions, and events from the environment according to similarities and differences.
- describe objects, organisms, and events from the environment.
- recognize hazards in the environment, and acquire knowledge and skills needed to avoid injury and to prevent accidents.
- describe ways a community satisfies needs for food, clothing, and shelter.
- describe how individuals and families change over time.

**Third Grade**

- use observations to form definitions of objects, actions, organisms, events, and processes.
- recognize hazards in the environment, and recognize personal responsibility for protecting the environment.
- state generalizations about similarities and differences among objects, organisms, and events.
- recognize hazards in the environment, and acquire knowledge and skills needed to avoid injury and to prevent accidents.
- describe ways a community satisfies needs for food, clothing, and shelter.
- describe how individuals and families change over time.

**Fourth Grade**

- recognize hazards in the environment, and acquire knowledge and skills needed to avoid injury and to prevent accidents.
- recognize the health of the family depends upon contributions of each of its members.
- recognize the health of the family depends upon contributions of each of its members.
- recognize the health of the family depends upon contributions of each of its members.
- recognize the health of the family depends upon contributions of each of its members.

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**Science Content**

- content from the sciences that shall be emphasized at the grade level shall include:

### Life Science

1.1 basic needs and life processes.
1.2 ecology ... interdependence of living things.
1.3 application of life science to careers and everyday life.

### Physical Science

2.1 energy ... energy ... forms of energy ... sources of energy.
2.2 phases of matter: solids, liquids, and gases.
2.3 structure of matter ... families of elements: metals and nonmetals.

### Earth Science

2.0 human responsibility regarding earth science phenomena ... natural resources.

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02/19/03
Introduction
Introduction

Why teach fire and burn prevention?

Each year during the past decade, about 300 Texans have died in fires. The Texas Commission on Fire Protection 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. Regrettably, most people do not know or practice even simple actions that can prevent fires and burns.

The Texas Commission on Fire Protection 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 Texas Commission on Fire Protection 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, kindergarten through high school.

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 Texas Commission on Fire Protection 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.
§75.30 (e) 1C. 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.

The fourth-grader is interested in social, occupational and civic matters. She is 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 and lighters, candles, fireplace, heaters, other locations where the child can observe a flame; 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, then use the photocopy as directed.

Pre-Test and Post-Test: conduct the pre-test prior to presenting the first lesson and the post-test following the 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
- Demonstration
- 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)5B, 26(e)1G
- demonstrate reactions to hazardous situations, including removal of fire hazards *26(e)1F


Materials: Pre-tests (p. 17); "Science of Fire" overhead transparency (p. 18); Letter to parents/guardians (p. 29); "Science of Fire" activity sheet (p. 30); "You're Out" activity sheet (p. 31); answer keys (p. 24).

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

** ** See "Essential Elements" on Page 3-4.

Materials: "What Kind of Fires?" overhead transparency (p. 19); "The Fire Safety Club" question cards and game sheet (p. 32-33); 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:

<table>
<thead>
<tr>
<th>Careless smoking</th>
<th>Fire prevention rule</th>
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<tbody>
<tr>
<td>Cause of fire:</td>
<td>Fire prevention rule</td>
</tr>
<tr>
<td>Throwing cigarette butts from the car</td>
<td>Don't throw cigarettes</td>
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<tr>
<td></td>
<td>from the car; use an</td>
</tr>
<tr>
<td></td>
<td>ashtray</td>
</tr>
<tr>
<td>Dropping cigarettes on the ground.</td>
<td>Put out with water, and</td>
</tr>
<tr>
<td></td>
<td>put in trash can.</td>
</tr>
<tr>
<td>Throwing hot matches on the ground.</td>
<td>Put out with water, and</td>
</tr>
<tr>
<td></td>
<td>put in trash can.</td>
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</table>

Fireworks

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

**Cause of fire**
- Allowing children to get matches or lighters.
- Letting a friend talk you into striking matches.
- Burning leaves or grass to see what happens.

**Fire prevention rule**
- Keep matches and lighters stored safely where children cannot reach them.
- Tell your friends that matches are dangerous.
- 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.

**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 a 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*

**Materials:** "Smoke and Gases in Action" overhead transparency (p. 20); "How Fire Products Hurt the Body" activity sheet (p. 34); "What Would Happen?" activity sheet (p. 35); answer keys (p. 24-25).

**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.

**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
- describe local locations and uses of fire alarm boxes
- explain need for exit plans and drills, especially at home

**Materials:** "Helps For A Safe Get-Away" overhead transparency (p. 21); "Safety Features In Our Building" activity sheet (p. 36); writing paper; answer key (p. 25).

**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."

**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.
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 Itt. 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
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
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 9. Transfer to overhead transparency.
In Texas, how many outdoor fires were caused by ...?

- Careless smoking
- Children playing with matches or fire
- Fireworks

Number of fires

Facts for 1990 from the Texas Fire Incident Reporting System
Smoke and Gases in Action

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

Teacher: Use with Lesson Three, Page 11. Transfer to overhead transparency.
Helps For A Safe Get-Away

Teacher: Use with Lesson Four, Page 12. Transfer to overhead transparency.
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.

9. 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.

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 ____________________
B ____________________
C ____________________
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
Complete the sentences:
1. Fire has three elements.
2. "Fire prevention" means keeping heat, fuel, and oxygen apart.
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 dishwasher is on the stove. Remove the dish towel.
6. A fire makes only smoke and heat.
7. A fire can be stopped by taking away oxygen (air).
8. A liquid cannot catch on fire.
9. A family can work together to prevent fires in the home.

10. List four major jobs of the fire department: (Accept student terms)
   A. inspection
   B. rescue
   C. 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. B. smoke alarm
13. A. fire sprinkler
14. D. exit directional sign
15. F. fire hose
   
   You're Out. Ask yourself, "Am I out of the building?"

Explain how fire products hurt the body:

- Carbon monoxide keeps blood from carrying oxygen
- Smoke irritates eyes and lungs, blocks vision
- Hydrogen cyanide (SICKNESS) prevents cells from using oxygen
- Lack of oxygen removes body's source of oxygen
- Heat causes burns, raises body temperature

Is it true or false?
1. A cloth is burning on the stove. Indoor or outdoor? Outdoor.
2. 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 lid.
3. 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.
4. Grandmother uses an electric heater during the winter. To keep warm at night, she put the heater close to the bed. What can you do to prevent a fire? Keep the heater 3 feet from the bed.
5. A cloth is burning on the stove. What can you do to prevent a fire? Remove the towel.

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 fires from starting.
**Fire Safety Features in Our Building**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoke alarm</td>
<td>Detects smoke and alerts occupants.</td>
</tr>
<tr>
<td>Exit sign</td>
<td>Indicates the exit location.</td>
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<tr>
<td>Exit directional sign</td>
<td>Provides direction to the exit.</td>
</tr>
<tr>
<td>Fire alarm pull station</td>
<td>Wire that pulls the alarm when activated.</td>
</tr>
</tbody>
</table>

**Word List:**
- Suppression
- Prevention
- Training
- Rescue
- Teach
- Safe
- Clean
- Fire
- Stop fires

**Across:**
1. Suppression means to _________
2. Fire inspectors look for fire dangers.
3. The job of the fire service is to _________
4. To keep fires from spreading _________
5. Keep building _________
6. Smoke alarm detects _________
7. At a fire _________
8. puffing out the fire _________
9. To inspect means _________
10. Fire inspectors are in the fire _________

**Down:**
1. Fire inspectors _________
2. Fire inspectors _________
3. Fire inspectors _________
4. Fire inspectors _________
5. Fire inspectors _________
6. Fire inspectors _________

**Answer Key:**

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**Suppression means to _________**

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| Fire inspectors look for fire dangers.
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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 Texas Commission on Fire Protection. 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,

[Signature]

Teacher

Teacher: Use with Lesson One, Page 9. Duplicate and distribute to students when beginning unit.
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

______________________________________________________________
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.

<table>
<thead>
<tr>
<th>Situation</th>
<th>Question</th>
<th>Element Removed</th>
</tr>
</thead>
<tbody>
<tr>
<td>A cloth dishtowel is laying on the stove. Mother turns on a burner to boil water.</td>
<td>What can you do to prevent a fire?</td>
<td>Heat</td>
</tr>
<tr>
<td>Grandfather uses an electric heater during the winter. To keep warm at night, he put the heater close to the bed.</td>
<td>What can you do to prevent a fire?</td>
<td>Fuel</td>
</tr>
<tr>
<td>A pan of hot oil is cooking on the stove. It catches fire.</td>
<td>What can you do to put out the fire?</td>
<td>Oxygen</td>
</tr>
<tr>
<td>A cigarette is left burning in an ashtray. The ashtray is sitting on the arm of the sofa.</td>
<td>What can you do to prevent a fire?</td>
<td>Heat</td>
</tr>
</tbody>
</table>
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.

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

Teacher: Use with Lesson Two, Page 10. Duplicate for student use with the Fire Safety Club Game.

Commission on Fire Protection: Fire Safety For Texans

Fourth Grade: Fire Safety: Stop the Heat
HOORAY!
Welcome to the
FIRE SAFETY
CLUBHOUSE

This way to safety

Just say no!

NO Playing with Fireworks

Matches

START

Teacher: Use with Lesson Two, Page 10. Duplicate for student use with question cards.
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.

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

What can harm ...
Eyes?
Nose?
Mouth and throat?
Lungs?
Entire body?

What Would Happen?

Activity Sheet

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?
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.

<table>
<thead>
<tr>
<th>Fire sprinkler</th>
<th>Smoke alarm</th>
<th>EXIT sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXIT directional sign</td>
<td>Fire alarm pull station</td>
<td>Fire exitway</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>What does it look like?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
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Teacher: Use with Lesson Four, Page 12. Duplicate for student use.
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.