

Robert Fulton Elementary School
Fire Prevention Lesson Plans
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Grade 3 and Grade 4

FIRE PREVENTION WEEK OCTOBER 4 - 10, 2009

LESSON 1: INTRODUCTION TO FIRE PREVENTION

OBJECTIVES:

- ~ Students will learn causes of fatal home fires
- ~ Students will use bar graphs to analyze data
- ~ Students will create their own bar graphs when given a set of data

MATERIALS:

- ~ chart paper
- ~ post-it notes
- ~ pencils, markers
- ~ worksheets

ANTICIPATORY SET: What do you think of when you see/ hear the word “FIRE”?
What are some of the positive uses of fire? What are some of the negative results of fire?

PROCEDURES:

1. Display the word FIRE and ask questions in the anticipatory set. List students' responses on chart paper under good/bad headings.
2. Ask students to think of how fires can start. Allow about two minutes for class to brainstorm with person next to them. During this time teacher walks around room, handing a post-it to each child. Children write their name on the post-it.
3. Repeat question: How do fires start? Record answers on chart paper or chalkboard in a list. Next, ask children to predict the most common cause of fires by placing their post-it next to the reason they select. (Thus creating a class bar graph of their predictions).
4. Display a (teacher-made) chart which lists data for the causes of fatal fires in Philadelphia in 2005. Use this data to create a horizontal bar graph on the board (or chart paper). Students can volunteer to color in each category. (Clarify vocabulary as needed: appliance, arson).
5. Distribute worksheet with bar graph and questions. Students can work with a partner to analyze data and complete the questions. Refer to predictions and have brief discussion to see how their predictions compared with the actual data .
6. Have class use their worksheets to make a list of causes from most common cause to least common cause of fatal home fires.
7. Now that class is aware of causes of fires, ask them for ideas of how fires might be prevented. Assure them that the lessons during the week will address these prevention measures and help them to keep themselves and their families safe from dangerous fires.

Concluding Activity: Children can use the data from their list to create a vertical bar graph

EXTENSION:

Ask children to make up one or two math questions using the data

Use same data, but create a pictograph or pie graph to show the information

Lesson 2 – Materials to start a fire

Objectives:

The students will understand what is needed for a fire to ignite and burn.

- The students will understand the four major heat sources.
- The students will be able to identify heat source fire hazards in the home.

The students will understand the concepts of mean, median, and mode.

- The students will calculate the mean for a given set of data.
- The students will calculate the median for a given set of data.
- The students will calculate the mode for a given set of data.

Materials:

Fire Triangle Mock-up

Slide Projector and Screen

Heat Source Slides

Blackboard

Home Hazards Checklist

Fire Death Statistics

Anticipatory Set:

What types of materials do you think you would need to start a fire?

Procedure:

1. Discuss the materials needed for a fire to burn and where they are typically found.
 - Oxygen – in the air around us at all times.
 - Fuel – anything that can burn. Found throughout our environment. Ask students to name different things in the room which are fuels.
 - Heat – anything that can ignite a fuel. May be natural (lightning, volcano) or man-made (electricity, matches, etc.) Ask students to name different heat sources.

Explain that all three of these elements being present in a room will not automatically cause a fire. Explain that they must come together in just the right mix for the fire to occur.

Show the fire triangle mock-up and demonstrate the interrelationship between the three elements.

2. Next, discuss the basic concept of fire prevention: Not allowing fuel sources and heat sources to get together. Since there are fewer heat sources than fuels, they are usually what we try to control. On the board, show 4 major classes of heat sources: heating electricity, smoking and matches, cooking.
3. Begin slides. Slides show typical hazards found in the home related to all four types of heat sources.
4. Pass out the home hazards checklist. Explain how to use the checklist and ask the students to complete the checklist for homework.
5. Review 2005 Philadelphia Fire Fatality Statistics that were introduced in the previous lesson.

6. Discuss what materials were most likely used to ignite the fires that caused these deaths.
7. Use the data set from previous lesson and calculate the mean.
8. Use the data set from previous lesson and calculate the median.
9. Use the data set from previous lesson and calculate the mode.

Extension Activities:

Research fire data from different years or from different cities. Use this data to calculate mean, median, and mode.

Lesson 3 – Escape Plans

Objectives:

The students will identify what to do in the event of a home fire.

The students will identify the importance of a home fire escape plan.

The students will identify geometric shapes.

The students will draw floor plans using geometric shapes for the main living floor of his/her home.

The students will draw floor plans using geometric shapes for his/her bedroom.

The students will plan a Primary and Secondary escape route for each room on the floor plan.

Materials:

Escape Plan Maze

Floor Plan Diagrams

Chalkboard

Colored Chalk

Anticipatory Set:

Show 2008 Fire Prevention Week “Exit Strategy” Video

Procedure:

1. Explain the need for escape planning. Comment on the need to prepare for events to help prevent panic. Also, comment on the need to make all family members aware of the plan.
2. Ask students if they have ever wondered what they would do if there was a fire in their home.
 - Stress that it's important to get out fast.
 - They should never hide or take time to gather up their toys or other belongings.
 - Fires are scary and confusing.
 - They can be loud, burn very fast and their smoke can make a room or home very dark.
 - It helps to have a plan to know what to do if there is a fire and to get out fast.
3. Ask students if they know what a home fire escape plan is.
 - Be sure to stress the importance of planning for two ways out in case one way is blocked by the fire.
4. Ask students why they think a home fire escape plan is important.
 - Students will probably conclude that home fire escape plans help them to get out quickly and safely in the event of a fire.
5. Ask students if they have a home fire escape plan and if they practice it regularly with an adult.
6. Ask the students to complete the Escape Maze.
 - Remind them that just like the maze, good home fire escape plans have two ways out.
7. Have the students identify different geometric shapes that they can use to represent doors and windows in their homes.

8. Escape Plan Diagrams.
 - Using the small space, ask students to draw a picture of their bedroom.
 - Have them mark where the doors and windows are, using geometric shapes, and then make an escape plan by drawing arrows to show two ways out. Remind students that the first way out should be a door.
 - Using the large space, ask students to draw their home, showing the location of windows and doors, using geometric shapes, they can use to escape. Remind students that every way needs to be planned and practiced with an adult.
9. Review the fire escape plans with the class, emphasizing the following fire safety tips:
 - Before opening any door in a fire, feel it first. If it is hot, there may be fire on the other side. Try to get out another way.
 - Crawl low on the floor to avoid heat and smoke.
 - Pick a safe and easy-to-remember place outside the home to meet the rest of the family.
 - Call 9-1-1 after escaping from the fire.
 - Stay outside no matter what; don't go back for anything.
 - Conclude the lesson by asking students to practice their home fire escape plans with an adult when they go home.
10. Review the classroom fire escape plan with the students. On the board draw a diagram of the school and come up with two escape routes that the students can take in the event of a fire. Label each escape route in different colored chalk. Have both routes meet outside of the drawing at a meeting place.
11. Hold a mock fire drill to test the plan.

Extension Activity:

Have the students work on escape plans for another family members home.

Lesson 4: Smoke Alarms

Objectives

- Students will identify the purpose of smoke alarms in the house.
- Students will identify where smoke alarms should be placed in their homes.
- Students will identify how to test their smoke alarms and how to replace the batteries.
- Students will calculate the cost of maintaining smoke alarms using IN/OUT Math Boxes.

Materials

- Smoke alarms
- Batteries
- IN/OUT Math Box worksheet
- Broom

Anticipatory Set

- Push the test button on the smoke alarm to get the students attention.
- Ask students what you have in your hand and why it is so important to have them in your home.
- Ask students what they should do if they hear a fire alarm go off in their house.

Procedures

- Explain why working smoke detectors are so important to have in your home.
- Ask students if they are aware of where smoke detectors should be placed in their homes in order to be the most effective. Explain that they should be placed on

every floor of the home, including the basement. For extra protection they can also be installed inside every bedroom.

- Ask students how often batteries should be changed in the smoke detectors.
Explain that they should be changed at least once a year. Show students where and how to replace the batteries. Have some students come up and change the batteries.
- Demonstrate, using the smoke detector and a broom, how to check if a smoke detector needs new batteries. Have volunteers come up and use the broom handle to reach up and test the detector (you will be holding the detector in the air).
- Ask student if they know how much 9 volt batteries cost. Explain that the average cost of two 9-volt batteries is \$6.00.
- Have the students use what they have learned to figure out how many smoke detectors they need in their house. Then using the IN/OUT Math Box students will then calculate how much it would cost to change the batteries in their smoke detectors.

Extension Activities

- Have students check their smoke detectors at home. Make sure there are enough detectors in their home.
- Have student use advertisements to find batteries that are on sale.

Lesson 5: Fire Safety Review

Objectives

- Students will review fire safety procedures.
- Students will convert whole numbers into percents and decimals.

Materials

- The Causes of Fatal Fires worksheet (see attached)
- Calculators
- Be Cool About Fire video

Anticipatory Set

- Show students the video Be Cool About Fire

Procedures

- After the video is over have students discuss the key points. Chart the key points on paper.
- Distribute Fatal Fires worksheet. Discuss the statistics with the students. Explain that they will be converting the statistics into percents. Choose two statistics to convert as a class.
- Once the two examples are complete, partner the students up to convert the rest of the statistics. Walk around to observe the students.
- Create a chart of the students work to hang in the hallway.

Extension Activities

- Have students create posters about fire safety.
- Students convert decimals to fractions

- Students write both whole numbers and decimals in expanded notation and word notation