



The Science of Fire

Lesson Title: The Science of Fire

Grade Level: 2nd-5th

Purpose: Teach age appropriate skills for fire and life safety while teaching to statewide learning standards.

Materials Needed (Optional):

For Experiment

- 4 Candles
- 4 Jars

For Demonstration

- Fire Triangle
- Examples of Fuel
 - Wood, Plastic, Cloth, Paper

Standards:

Next Generation Science Standards:

Science:

PS1.B: Chemical Reactions

Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not.

PS1.A: Structure and Properties of Matter

Each pure substance has characteristic physical and chemical properties (for any bulk quantity under given conditions) that can be used to identify it. (MS-PS1-2)

PS3.B: Conservation of Energy and Energy Transfer

Energy is present whenever there are moving objects, sound, light, or heat. When objects collide, energy can be transferred from one object to another, thereby changing their motion. In such collisions, some energy is typically also transferred to the surrounding air; as a result, the air gets heated and sound is produced. (4-PS3-2), (4-PS3-3)

Washington Health and PE Standards:

Health:

H7.Sa1.4 Describe practices and behaviors that promote safety and reduce or prevent injuries.

Objectives:

The students will demonstrate understanding of:

- **The Fire Triangle**
- **Extinguishing Fires**
- **Protection and Prevention from Fire**

Safety:

- **Extinguishing Fire**
- **Smoke Alarms**
- **Fire Fighters are our Friends**

Vocabulary:

- **Hypothesis**-an educated guess
- **Extinguished**-to put something out or stop something from burning
- **Smoldering**-the process of burning slowly, smoking



Time: 35-45 minutes for all presentation and demonstration.

Instructional Content:

Use this bulleted list to guide you and keep you on track and meeting all objectives for lesson. Everyone has their own style for teaching, the most important thing is the make it fun and engaging for the kids.

• Warm up Activities: (5-7 Minutes)

- **Mini KWL:**
 - Ask students to individually make a mini KWL chart about the science of fire.
 - K-What do you already know about fire science?
 - W-What do I want to know about fire science and fire safety?
- **Entrance Ticket:**
 - Ask students to try to define:
Smoldering, Hypothesis, and Extinguished.
- **The Science of Fire Bell Ringer**
 - Ask students to sketch and label a picture that represents the fire triangle.

• Video:

- Follow the link:
 - http://www.snofire7.org/preparedness_education/home_education_lessons/index.cfm?video_id=1&omo=1
- Watch Video:
 - Run time: 19:51

• Closure Activities: : (5-7 Minutes)

- **Mini KWL:**
 - Ask students to finish the last column for the KWL chart about fire science.
 - L-What did you learn?
- **Exit Ticket:**
 - Ask students to use what they learned to add more detail to the definitions they wrote at the beginning of class for the following words:
 - Smoldering, Hypothesis, and Extinguished.
- **The Science of Fire Bell Ringer:**
 - Have student draw a correct version of the fire triangle from memory.

Homework and Enrichment Activities:

- Fire Science Homework
- Smoke Detector Challenge

Handouts:

- The Science of Fire Bell Ringer
- Mini KWL Chart



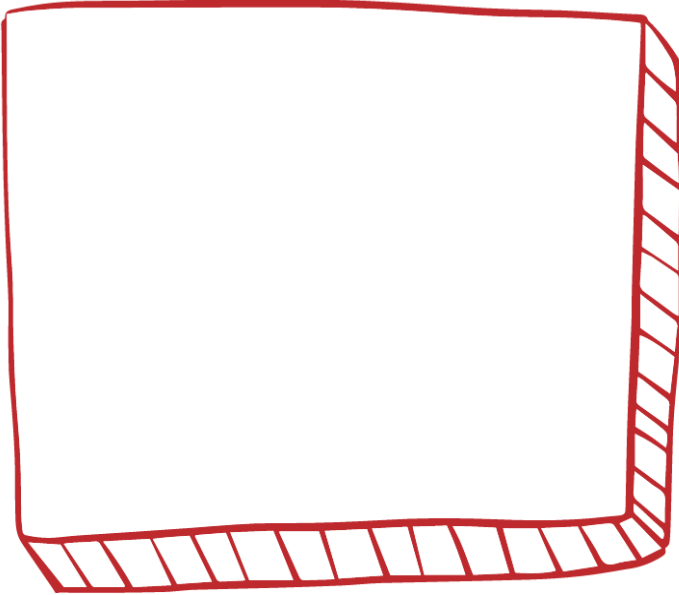
THE SCIENCE OF FIRE

BELL RINGER

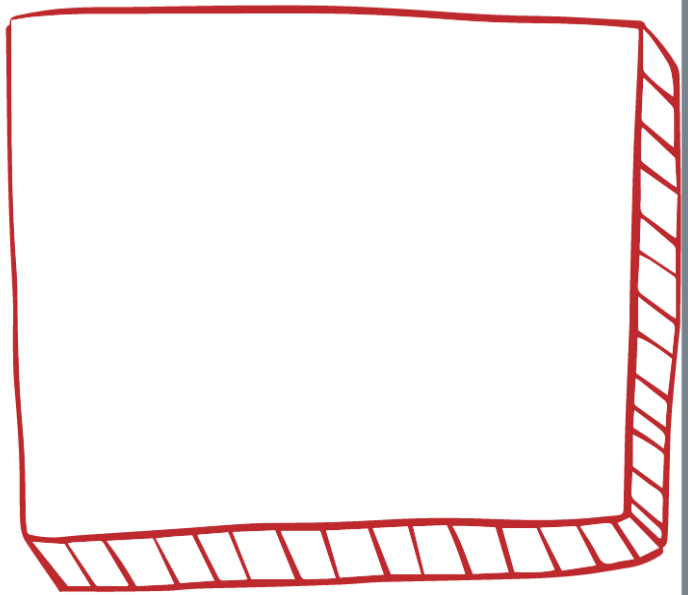
Directions: Answer the following questions before watching the video. If you don't know the answer, use your best guess:

1. In the box, Sketch and Label a picture that represents the fire triangle.

BEFORE VIDEO



EXIT TICKET: AFTER VIDEO



Directions: While watching the video, fill in the blanks and answer the questions:

2. What are the three parts of the fire triangle?

3. A _____ is an educated guess. For the candle experiment, my guess, is that the first candle that will be _____ will be number _____, and the last candle will be number _____.

4. To protect ourselves from fires we should have a _____ in every bedroom, in every hall, and on every level. There are two types of smoke detectors, _____ which detect smoking or _____ fires _____ and _____ which detect flaming fires.

5. List three different items Firefighter Jessica wears to protect her from fire.

1. _____
2. _____
3. _____



MINI KWL CHART



NAME OF STUDENT:

SUBJECT:

LESSON:

**WHAT I
KNOW:**

**WHAT I
WANT TO
KNOW:**

**WHAT I
LEARNED:**

