



Fire Engine Math

Lesson Title: Fire Engine Math

Grade Level: 2nd-5th

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

Materials Needed:

For Demonstration:

Pictures of:

- Firefighters (20)
- Ladder Truck (4)
- Aid Truck (4)
- Engine (4)
- Hose (3)

Standards:

Common Core State Standards:

Math:

[CCSS.MATH.CONTENT.2.OA.A.1](#)

Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

[CCSS.MATH.CONTENT.2.MD.A.1](#)

Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

[CCSS.MATH.CONTENT.2.MD.A.4](#)

Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

Objectives: The students will demonstrate understanding of:

- Fire Truck Addition and Multiplication
- Fire Hoses and Measurement
- Home Escape Plans

Safety:

- Home Escape Plans
- Having Two Exits Out of Every Room

Vocabulary:

- **Apparatus-** Any vehicle that is used to help use fight fires or go on calls.
- **Hydrant-** is a fixture on the street that is attached to the main water line.
- **Diameter-** a straight line through the center of a circle.

Time: 35-45 minutes for 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 fire engines and hoses.
 - K-What do you already know about fire engines and hoses?
 - W-What do I want to know about fire engines and hoses?
- **Math Bell Ringer**
 - Have students complete the top portion of the Math Bell Ringer.
- **Entrance Ticket:**
 - Ask students to try to define:
 - Apparatus, Hydrant, and Diameter

• **Video:**

- Follow the link:
 - http://www.snofire7.org/preparedness_education/home_education_lessons/index.cfm?video_id=3&omo=1_1
- Watch Video:
 - Run time: 28:21
- Have students fill out the worksheet as they watch.

• **Closure Activities:** : (5-7 Minutes)

- **Mini KWL:**
 - Ask students to finish the last column for the KWL chart about fire engines and hoses.
 - L-What did you learn?
- **Math Bell Ringer:**
 - Have students complete the exit ticket activity on the Math Bell Ringer Worksheet.
 - **Exit Ticket:** On the bell ringer activity at the top of the first page, draw two more hydrants, three more axes, and two more hoses, and take away two engines by putting an "X" through them. Using a different color of pen, write the new object totals in the boxes, and write the new total of objects at the station beside the original number you wrote.
- **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:
 - Apparatus, Hydrant, Diameter

Homework/ Enrichment Activities

- Fire Engine Math Homework
- Firehouse Coloring Math
- Home Escape Plan

Handouts:

- Math Bell Ringer
- Mini KWL Chart



NAME: _____

DATE: _____



MATH BELL RINGER

Let's find out how many items are at Fire Station 31!

Directions: Count how many Axes, Engines, Hoses, Hydrants, and Helmets. Write your answers in the boxes below. Then add how many total objects are at the station.

Axes

Engines

Hoses

Helmets

Hydrants



_____ Total Items at Station 31

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

Vocabulary:

An _____ refers to any vehicle that is used to help fight fires or go on emergency calls.

List three different types of fire apparatus:

- 1.
- 2.
- 3.



Directions: While watching the video, fill in the blanks and answer the questions. Be sure to show your work!

1. If there are 2 fire engines, 1 ladder truck, and 2 medic units sent to a fire, how many apparatus arrive on scene?

2. If there are 4 fire engines, 1 ladder truck, and 3 medic/aid cars sent to a fire, how many vehicles arrive on scene?

3. If each apparatus has three people in the company or crew, and five trucks arrived at the house, how many firefighters arrived on scene?

Vocabulary:

The fixture on the street that is usually yellow or red and is connected to the main water line is called a _____.

_____ is a straight line through the center of a circle.

4. If the Fire Engine has 5 shoulder loads of hose that are each 100ft in length, how many feet of hose does the fire engine have?

Exit Ticket: On the bell ringer activity at the top of the first page, draw two more hydrants, three more axes, and two more hoses, and take away two engines by putting an "X" through them. Using a different color of pen, write the new object totals in the boxes, and write the new total of objects at the station beside the original number you wrote.



MINI KWL CHART



NAME OF STUDENT:

SUBJECT:

LESSON:

**WHAT I
KNOW:**

**WHAT I
WANT TO
KNOW:**

**WHAT I
LEARNED:**

