FIREFIGHTER
What does a Firefighter do?

- Firefighters respond to emergency situations and protect people, the environment and property from all types of accident and emergencies.
  - prevent fires, act as emergency medical technicians (EMT) and investigate the causes of fires.
- A firefighter is almost always the first official "on the scene" of fires, car accidents, or other emergencies, which is why they are also sometimes called "first responders."
- Enforce fire safety in local community
How do Firefighters use math?

➢ They use basic math skills like addition, subtraction and multiplication
  ○ Calculating volumes required for the air they breathe in SCBA
  ○ Calculating the water/foaming agent ratios
  ○ Estimating heights, distances and volumes
  ○ Determining manpower and other logistic requirements
  ○ Estimating evacuation zone distances.

➢ Firefighting Hydraulics (EP = NP + FL + APP + ELEV)
Math Problem

Fire flow formula: \[ (\text{length} \times \text{width}) \div 3 \times \text{percent of involvement} \]

Used to determine the amount of water (in gpm: gallons per minute) required to extinguish the fire.

An engine company officer arrives on the scene of a one-story residential structure (of Height: 100 ft and Width: 50 ft) on fire with 50% involvement.

The area of the structure is 100 \times 50 = 5,000 \text{ ft}^2

then divided by 3: 5,000 \text{ ft}^2 \div 3 = 1,666

then 50\% = 0.50 \times 1,666 = 833 \text{ gpm (gallons per minute)}
Get a Degree in Fire Science:

- **Certificates**: training in a particular area, such as fire inspection or arson investigation, short courses that take less than one year to complete, and are open to high school graduates.

- **Associate Degrees**: offered by community colleges and typically take two years of full-time study to complete. Must have a high school diploma to enroll in an associate degree program. Fire science associate degrees prepare students for entry-level firefighting positions.

- **Bachelor’s Degrees**: takes four years of full-time study. More and more entry-level candidates are pursuing bachelor’s degrees as a competitive advantage to getting hired.

- **Master’s Degrees**: terminal degrees – the most advanced degree you can obtain – in the field of fire science. Takes two years of full-time work, although many pursue their master’s degrees on a part-time basis. Firefighters interested in becoming chiefs or holding other high-level leadership positions should consider obtaining a master’s degree.
Education

➢ Meet the basic requirements:
  ○ 20/20 eyesight
  ○ a high school diploma
  ○ own a clean criminal record
  ○ at least 18 years old (21 in some agencies)

➢ Start off as a volunteer

➢ CPR training and be in good physical conditions

➢ Must complete about 600 hours of training over the course of 12 to 14 weeks at a fire academy designated by a hiring fire department.
Work Cited

http://www.firefighternation.com/article/professional-development/know-your-math-science-skills#

http://www.prospects.ac.uk/firefighter.htm

https://www.sokanu.com/careers/firefighter/


http://www.fireengineering.com/articles/print/volume-165/issue-10/features/every-pump-operators-basic-equation.html

http://www.firescience.org/how-to-become-a-firefighter/