

STEM *Sims*™

# Fire Safety



# Fire Safety

**Do you need an idea for a scientific study?  
Try out one of our ideas or make one of your own.**

**While fires can provide heat for warmth and cooking, home fires are a leading cause of injuries around the home. Take the following brief quiz to see how much you already know about fires and fire safety. See the bottom of page 4 to check your answers.**

1. What is the leading cause of home fires in the United States?
  - a. faulty electrical wiring
  - b. cooking accidents
  - c. candles left burning
  - d. smoking
2. Which of the following should not be used to extinguish a grease fire in the kitchen?
  - a. water
  - b. a metal lid
  - c. baking soda
  - d. a fire extinguisher
3. Which item can slow down the spread of fire in a home?
  - a. open windows
  - b. wooden doors
  - c. metal doors
  - d. carpets
4. Why is it important to have a family escape plan in case of a fire?
  - a. to practice running fast
  - b. to ensure everyone knows what to do and where to go
  - c. to decorate the house
  - d. to test the smoke alarms
5. What should you do if your clothes catch on fire?
  - a. run around
  - b. stand still and scream
  - c. take your clothes off immediately
  - d. stop, drop, and roll



# Have a Plan!

Fires are powerful and can spread quickly, so it's crucial to know how to stay safe. The goal of this activity is to create your own fire escape plans to ensure everyone in your home knows exactly what to do in an emergency. Hopefully, you'll understand how to protect yourself and your family, and you'll have a practical plan for safely escaping a fire. Get started now making fire safety a priority!

## Materials Required

Copy Paper, Colored Markers, Ruler

## Procedure

1. Use the markers and ruler to draw a floor plan of your home on one sheet of the copy paper. The drawing does not have to be to an exact scale representation of your home. See Figure 1 for a sample drawing.
2. Choose different colored markers to represent doors, windows, and heavy furniture.
3. Make sure to include and label all rooms, doors, windows, and important furniture on your drawing.
4. Your goal is to have at least two different escape routes from each room. Observe your drawing and plan your escape routes from each room.
5. Use a different colored marker to draw arrows labeling the possible escape routes from each room.
6. Use a different colored marker to identify and label two meeting locations for your family. One location should be inside the home and a different location labeled outside the home. The outside meeting location could be a neighbor's house, a specific tree, or a nearby landmark.
7. Share your plan with your family.
8. Practice using the escape and meeting plan for a "pretend" fire in a given location in your home.

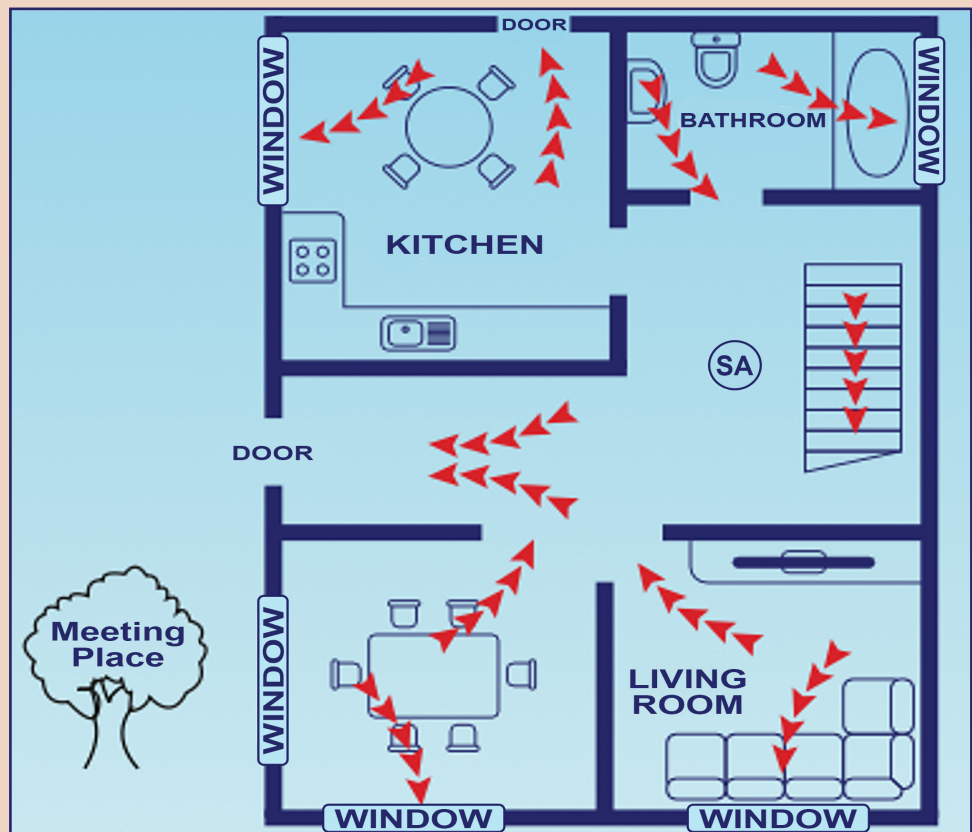


Figure 1. Sample Escape Plan

# Fire Safety

## Fire!

Fires are powerful and can be both fascinating and dangerous. Understanding how they start and how to stay safe is really important. Let's dive into the basics of fires and fire safety!

A fire needs three things to start: heat, fuel, and oxygen. This is known as the "fire triangle." Heat is what ignites the fire, fuel is what burns, and oxygen from the air keeps the fire going. For example, when you use a match to light a candle, you're providing the heat. The candle wax is the fuel, and the air around it has oxygen.

Fires can spread quickly, especially if there's a lot of fuel, like paper or wood, and if the air is dry. In fact, the National Fire Protection Association (NFPA) reports that,

in the United States alone, a fire department responds to a fire every 24 seconds. Most of these fires start in homes, and cooking is the leading cause, accounting for over 40% of home fires.

If a fire starts, you need to know what to do. Here are some important fire safety tips:

- 1. Stop, Drop, and Roll:** If your clothes catch fire, stop what you're doing, drop to the ground, and roll around to put out the flames. This helps smother the fire and keeps you safer.
- 2. Never Use Water on Grease Fires:** If you have a fire in a pan of grease, don't pour water on it. Water can make the fire spread. Instead, cover the pan with a metal lid or use baking soda. The NFPA estimates that about 8% of home fires are caused by grease fires.
- 3. Have a Fire Escape Plan:** Plan and practice an escape route with your family. Know two ways out of each room and have a safe meeting place outside. According to recent statistics, only about 50% of families have practiced a fire escape plan.

By understanding how fires work and following these safety tips, you can help keep yourself and others safe from fire. Remember, fire safety is an important part of protecting your home and family!



Please visit our site for more helpful information:  
[STEMsims.com](https://www.stemsims.com)

Answers: 1) b, 2) a, 3) c, 4) b, 5) d.

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