Class: Year 5 **Subject:** School's Fire Safety (The Triangle of Fire)
National Curriculum Reference: Science 1: 1a, 1b, 2a, 2b, 2c, 2d; PSHE and Citizenship: 3e, 3f, 3g, 5a, 5g, 5h

Learning Objective:

- To know and understand what the three elements of the Triangle of Fire are.
- How a fire can be put out.
- Reinforce fire safety.

Success Criteria:

- Children will be aware of any fire safety requirements.
- Children will know what constitutes the three elements of the Triangle of Fire.
- Children will know how a fire can be put out.

Introduction:

In pairs, groups or as a class, children discuss what do we need to stay alive? Write the children responses on IWB, flip chart or sticky notes. (The answers we are looking for are...Food, Air and our bodies to remain healthy. Introduce the idea that a fire needs the same three elements; Fuel (Food), Oxygen (Air) and Heat (Our bodies) to survive.

Teacher Led Activity:

- Introduce the idea that fire is a chemical reaction that needs **three** things to place. Together these three things form the "Triangle of Fire". If one of these is not present the fire cannot start. If one of these is taken from the fire, it will go out. How does it work?

  OXYGEN We all breathe oxygen and without it we would suffocate. Like us, fire breathes oxygen and it would suffocate without it. (EXAMPLE: What would happen if you held your breathe for too long?)

  HEAT An intense heat is needed to make a fire start. This may be a spark or a flame.

  FUEL We also need a fuel that will burn. This fuel may be either a
  Solid: Wood, coal, fabric, paper, rubber and plastics
  Liquid: Petrol, paraffin, nail varnish remover, cooking oil and some paints and adhesives.
  Gas: Natural gas, liquefied petroleum gas, propane and butane.

- Can the children think of where they would/could find any examples of heat or fuel? (Make notes on IWB, flip chart or stick notes.)
- With reference to the "Triangle of Fire", discuss with the children what would happen if you were to put a jar over a lit candle. (Show pupil's three different-sized jars and three candles the same size.)
- In their pairs or groups, ask the children to predict what might happen if the jars are put over the candles. (Ask children to design an experiment to test their prediction. You could if necessary, provide children with a proforma worksheet as a guide.) MAKE SURE THAT YOU REMIND CHILDREN ABOUT THE PRINCIPLES OF A FAIR TEST!)
- After the children have completed their predictions, collect in and discuss their expected outcomes. As a class agree how the teacher-led demonstration should be carried out.

IT IS IMPORTANT THAT THE TEACHER COMPLETES A RISK ASSESSMENT PRIOR TO CARRYING OUT THIS EXPERIMENT. CHILDREN NEED TO BE MADE AWARE OF THE POTENTIAL HAZARDS AND THE IMPORTANCE OF SAFETY PLANNING. (CONTROL MEASURES SHOULD INCLUDE A BOWL OR BUCKET OF WATER AND OTHER MEANS OF EXTINGUISHING FIRES SUCH AS A FIRE BLANKET).

- The teacher/adult should carry out the demonstration of the experiment. The experiment will show that by placing a burning candle under different-sized glass jars, the time to extinguish will vary dependent on the size of the jar and the air space within it.

- Children should calculate the time taken for the candle to extinguish under each of the different-sized jars, and draw conclusions from the results.

- Children can use the data gathered to provide a report of what it tells us.

Plenary/Review:

- Children to compare the results to their predictions and discuss valid conclusions.
- Review what children have leaned (Provide A3 sheet and sticky notes/and/or pens to record information).

Resources:

- Image of "Triangle of Fire"
- Examples of various fuels,
- Risk assessment
- Candles
- Different-sized glass jars
- A match or lighter for spark
- Sticky notes
- Pens
- Wipe boards
- Paper
- Fire blanket
- Bowl or bucket of water
- Prediction proforma