WORKSHEET E - MEMORANDUM

Stored Energy in Fuels

Group Experiment: What does a fire need to burn?

You have completed a group experiment using a candle and glass containers. You will now write down all the information about this experiment. This is called a scientific investigation.

Step 1: Write the topic.

Discover what happens when a flame is deprived of oxygen.

Step 2: Formulate a question.

How long do you think the candle will burn when different size glasses are used to cover the burning candle?

Step 3: Prediction. (Hypothesis). This is an educated guess of what you think will happen.

Examples:

- ***The flame in the small glass will die first; or***
- ***The flame in the large glass will die first; or***
- ***The flames in the small and large glass will die at the same time.***

Step 4: Plan the investigation to test your hypothesis. List the materials that you are going to use.

- ***1 candle***
- ***1 flat bottomed side plate or bowl***
- ***2 glasses (small, large)***
- ***Matches***
- ***Stopwatch or cell phone***

Step 5: List the method (THE HOW)

1. ***Light the candle and drip the wax onto the centre of the side plate/bowl. Place the bottom of the candle in the centre of the side plate / bowl. The candle must securely stand upright.***
2. ***Put the small glass over the lit candle.***
3. ***Measure the time with a stopwatch / cell phone to determine how long it took for the flame to go out.***
4. ***Record the time.***
5. ***Repeat steps 2 to 4 with the large glass.***

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Step 6: Collect and record your data: What happened?

Note: The groups must use the same type and colour candle as well as the same size small and large glasses. if not, then the findings will differ.

RESULTS AND OBSERVATIONS	
GLASS SIZE	**TIME TAKEN FOR FLAME TO GO OUT**
SMALL	
LARGE	

Step 7: Analyse your data: evaluate and communicate your results. Was your prediction (hypothesis) correct? Why or why not?

Guidelines:

1. ***Each group gets an opportunity to report back.***
2. ***The results of the different groups are compared.***
3. ***The results should not have a huge difference in time because the same size candles and glasses were used.***
4. ***The learners should discovered that the flame in the small glass burnt out the fastest / quickest.***
5. ***The learners conclude that there was more oxygen in the large glass which resulted in the candle burning longer.***