GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

GRADE: 5
SUBJECT: NATURAL SCIENCES AND TECHNOLOGY

TERM 3
PRACTICAL TASK NO 1
NATURAL SCIENCES: ENERGY & CHANGE
TECHNOLOGY: SYSTEMS AND CONTROL

Name: _____

Class: _____ Date: _____

School: _____ Teacher: _____

PRACTICAL TASK	Activity/Form	Learner's mark	Learner's %
1.	Practical Task		
TOTAL		**30**	

Natural Sciences and Technology

Formal Assessment Task

Term: 3

Practical Task: No 01

Due Date:_____ Marks: 30

Grade: 5

Topic: To investigate how long a candle will burn when covered with different sized glass containers.

Instructions

1. You will complete the practical activity in class under supervision
2. Complete all instructions in your NS &Tech exercise book
3. Label all sections the same as on this instruction sheet
4. Use a pen for writing
5. All sketches must be done in pencil

Specific Aim 1:	Doing Science and Technology
Specific Aim 2:	Understanding and connecting ideas
Specific Aim 3:	Science Technology and Society

Major Process and Design Skills:

*Access information *Recall information *Observe *Compare *Measure *Identify problems *Raise questions *Predict *Hypothesising *Plan investigations *Do investigation *Record information *Interpret information *Communication (Plot a bar graph, Draw a table, observations)* Evaluate (Suggest ONE way in which you could improve the investigation to get more accurate results)

NOTE: SAFETY:

- This investigation should be done under the supervision of your teacher. Ensure that learners:
- Work co-operatively with group members.
- Understand and adhere to safe laboratory practices when performing any activity in the classroom or lab.
- Should handle all equipment and materials correctly and responsibly to complete the activities.
- Wear correct protective clothing such as safety glasses or goggles, gloves, and aprons when appropriate.
- Dispose of waste responsibly.
- Maintain clean stations and always wipe up spills immediately
- Support by collecting basic equipment from home e.g., containers (clear and or transparent plastic containers or glass bottles of equal size, such as jam jars, baby food bottles, mayonnaise jars, canning jars, etc.

Teacher responsibility

Materials

- The teacher will ensure that their school buys plastic of Paris from (Diskem or any other pharmacy) in preparation for the practical.
- Cooking oil or Vaseline.
- Clay

Teacher responsibility

Materials

- The teacher will bring candles, glass containers, matches from the lab
- The teacher will demonstrate the experiment to the learners
- The teacher will observe the learners when they are performing the experiment.

Learner responsibility

The learners will

1. learners will perform the experiment in groups of six
2. Observe and record the measurements
3. Draw a bar graph

TO DO: (in a group)

1. **To Investigate how long a candle will burn when covered with different sized glass containers.**

Hypothesis: The more oxygen available, the longer the candle will burn.

List of Apparatus / Equipment

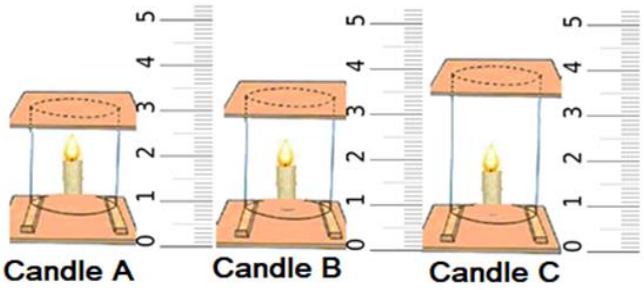
- Three different sized glasses (glass containers)
- Four candles and four candle holders
- A timing device such as a stop watch/ watch
- Matches

Method

Instructions for the learners

- Place three candles in different sized glasses as shown below.
- Light all the candles and place them in the glasses.
- Cover all the candles at the same time.
- Measure the time it takes for each candle to go off.
- Repeat this with all four candles.

Burning candles in glass containers



Question 1

(a) What is the aim of this investigation? (2)
(b) What does the word "combustion" mean? (2)
(c) What are the two requirements for the candle to burn? (2)

Prediction

TO DO: (individual)

2. Predict what will happen if you:

(a) The cover the candles with the glass containers of the same size? (2)
(b) Give a reason for the in answer number (a) (2)
(c) What will happen if you if you only A and B with the size glass containers and whilst C is left uncovered Give a reason for the answer in number (c) (2)

TO DO: (in a group)

Hypothesis – (guess answer)

- Discuss and decide in pairs on a suitable hypothesis

TO DO: (individual)

(a) Formulate a suitable hypothesis for this investigation. (3)
Include "If . . . then . . . ."

Evaluation

TO DO: (individual)

Record what you have observed in the table.

Candle	Time it takes in seconds to continue burning
A	
B	
C	

(3)

TO DO: (individual)

(a) Plot a bar graph using the results from your observations above. (6)

Conclusion:

Fill in the missing words

In the air is _____✓_____that a candle requires to burn. The candle in the _____✓_____container burns the longest as there is more _____✓_____available to burn. The candle without a glass covering will burn the longest. The reason is that there is ____✓_____ _____ (4)

TO DO: (individual)

Self-Assessment Checklist

Features specified	Achieved? Yes/No	Improvements which I could make
• All instructions were carefully followed.		
• All questions have been completed in my exercise book/ worksheet		
• Graphs have been drawn, labeled correctly and completed.		
• I worked neatly and the work station was clean when I left.		
• The work in my exercise book is neat and up to date.		
• I answered all the questions.		

Formal Assessment Rubric

Criteria:				**Mark**
1. Aim of this investigation correctly stated				/2
2. The word "combustion" defined.				/2
3. What are the 2 requirements for the candle to burn?				/2
4. At least TWO predictions accurately made				/8
5. A suitable hypothesis formulated / stated				/3
6. A bar graph accurately plotted to represent data.				/6
7. Observations / data accurately recorded on a table				/3
8. Is the conclusion of the observation accurately made?				/4

Signature: Teacher_____ Date: _____

Mark: /30

Marking Guide lines
Question 1

(a) What is the aim of this investigation?
To observe how long a candle will burn when covered with different sized glass containers. ✓✓

(b) What does the word "combustion" mean?
Burning fuels in the presence of oxygen✓✓

(c) What are the two requirements for the candle to burn?
Oxygen, heat and fuel ✓✓

Prediction
Predict what will happen if you:
(a) Cover the candles with the glass containers of the same size?
The candles will off at the same time ✓✓
(b) Give a reason for the answer in number (a).
Because they will have the same amount of oxygen inside the glass containers. ✓✓
(c) What will happen if you if you only A and B with the size glass containers and whilst C is left uncovered?
A and B will go off at the same because they have the same amount of oxygen and whilst C will keep on burning because it has enough/sufficient oxygen to keep on burning ✓✓✓✓
(d) Refer to number C above.

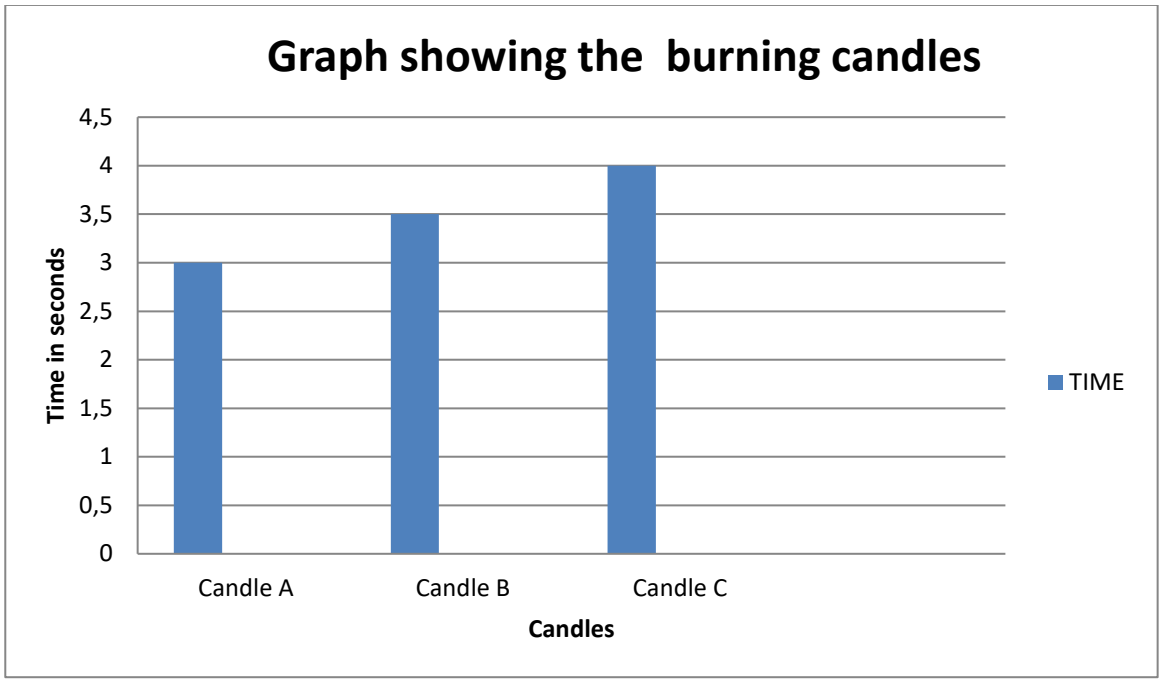
Hypothesis – (guess answer)
(a) Formulate a suitable hypothesis for this investigation.
Hypothesis:
If there is enough oxygen then the longer the candle will burn. ✓✓ ✓ (3)

Record what you have observed in the table.

Candle	Time it takes in seconds to continue burning
A	3 seconds✓
B	3.5 second ✓
C	4 seconds ✓

(3)

(a) Plot a bar graph using the results from your observations above.



Conclusion:

Fill in the missing words

In the air is oxygen ✓ that a candle requires to burn. The candle

in the largest container ✓ burns the longest as there is more

oxygen ✓ available to burn. The candle without a glass

covering will burn the longest. The reason is that there is enough oxygen in the air available for the candle to burn. ✓

Rubric for graph

Heading	**1**
labeling Y- axis	**1**
labeling x- axis	**1**
Mark for each bar	**1x3**
Total	**6**