

## **MATHEMATICS REPORT**

### **HOW TO SET A GOOD SCENARIO QUESTION?**

#### **KEY POINTS TO NOTE**

1. First list the learning outcomes LO that you want to test.
2. List the chapters/topics you want to test from.
3. It is advised that you first write answers and then create a statement.
4. Make sure you achieve the generic skills like: values, attitudes, problem solving etc.
5. Don't use words that are not appreciated so well by society like prostitution, gambling, witchcraft.
6. Know the problem in real life knowledge from such topics can solve.
7. Know how you want your solution to be.
8. Mind the language well. Use words learners are familiar with, use everyday life.
9. Avoid using images they are not going to use. Not all scenarios have pictures.
10. Allow critical thinking by avoiding the use of direct words that give away the strategy to the learners.
11. Allow room for a conclusion or decision making.

#### **THE COMPOSITION OF THE PAPER.**

- It will be one paper with 6 set items, And the learner is expected to attempt four questions.
- The duration has not yet been decided yet but it will either be 2 hours or 2 hours and 30 minutes.

***Each of the questions will come from the four themes:***

1. Theme one: numbers.
2. Theme two: patterns and algebra.
3. Theme three: data and probability.
4. Theme four: geometry and measures.

Topical combinations across the four themes during setting a scenario question.

## THEME ONE: NUMBERS

**This one will provide ONE QUESTION/ITEM.**

1. Number bases.
2. Working with integers.
3. Fraction, percentages and decimals.
4. Numerical concept 1.
5. Numerical concept 2.
6. Ratios and proportions.

*What learners should be able to do under the theme that you consider while scoring.*

**Do some identifications like.**

- Strategy to use to use to manipulate.
- Correct values to manipulate.

**Carry out accurate manipulations like.**

- Addition
- Multiplication.
- Division.
- Subtraction.

**Make a conclusion or decision.**

*This should be based on a correct answer got using correct values.*

## THEME TWO: PATTERNS AND ALGEBRA

**This will provide ONE ITEM.**

1. Sequence and patterns
2. Equations of lines and curves.
3. Algebra 1
4. Mappings and relations.
5. Inequalities and regions
6. Algebra 2
7. Equation of a straight line.
8. Rectangular Cartesian coordinates.
9. Simultaneous equations.
10. Linear programming
11. Loci.

*What learners should be able to do under the theme that you consider while scoring.*

**Do some identifications like.**

- Variables involved.
- Relationship connecting the variables.
- Express it as an equation.

**Carry out accurate manipulations like.**

- Substitution.
- Factorization.
- Making the subject of the formula.
- Addition subtraction, Subtraction, multiplication and division.

**Make a conclusion or decision.**

*This should be based on a correct answer got using correct values.*

### **THEME THREE: DATA AND PROBABILITY**

**This will provide TWO ITEMS.**

1. Data collection and presentation.
2. Graphs.
3. Set theory.
4. Data collection and display.
5. Matrices
6. Probability.

*What learners should be able to do under the theme that you consider while scoring.*

**Carry out data presentation while doing the following.**

- Writing title in full.
- Labelling/naming
- Respecting the scale.
- Inserting data.

**Do some data analysis by calculating any of the following.**

- Mean, mode or median.
- Range
- Probability.

**Make a conclusion or decision.**

*This should be based on a correct answer got using correct values.*

## THEME FOUR: GEOMETRY AND MEASURES:

**This will provide TWO ITEMS.**

1. Geometric construction.
2. Bearings
3. General and angle properties of geometric figures.
4. Reflection.
5. Business arithmetic
6. Time and tables
7. Similarities and enlargement.
8. Circles.
9. Rotation.
10. Length and area properties of two dimensional geometrical figures.
11. Nets areas and volumes of solids.
12. Trigonometry 1
13. Vectors
14. Business mathematics
15. Trigonometry 2
16. Matrix transformations.
17. Circle properties
18. Lines and planes in three dimensions.

*What learners should be able to do under the theme that you consider while scoring.*

**Do some analysis to identify the following.**

- Formula.
- Theorem
- Strategy.

**Do some manipulations like.**

- Substitution.
- Addition subtraction, Subtraction, multiplication and division.
- Making the subject of the formula.
- Ensure consistent units of measurement.

**Make a conclusion or decision.**

*This should be based on a correct answer got using correct values.*

## **PHYSICS REPORT**

I take this opportunity to forward my greetings to the comrades. Allow me to share about the key points discussed in the Seeta high school green campus Mukono workshop 16<sup>th</sup>, 03/2024. The information below highlights changes that cut across all the science subjects to be assessed during the end of the cycle.

### **Use of curriculum books:**

teachers have been emphasized to refer to curriculum books since they indicate what should be taught and what should be left out. A teacher should not assess what is not in the curriculum book.

### **Content frame work:**

in an assessment tool and levels of demand. This implies setting of questions that favour all learners i.e the fast, moderate and slow learners (simple and hard questions).

### **The elements of construct:**

These have been discussed as the areas in sections of assessment that bring about the learning outcomes to make the learner competent, in physics, in section A they are 3 and in section B, they are 2 items.

## Completing the syllabus

A learner is to be assessed in all chapters i.e in physics a combination of chapters is to be applied to have a scenario question.

## Scenario questions

- Only scenario questions are to be examined. It is not a must to have support materials but they should be used only when words cannot explain enough about a scenario. If a student can answer a question without a support, then the support material is redundant. A Task that a learner can answer minus reading the scenario disqualifies a question from being considered a scenario question. Clear scenario questions must be set to eliminate confusion to the learner and realistic examples i.e questions such as '***A man of mass 46Kg.....***' should not be set since values do not make logical sense.
- For extended questions which have subparts, a learner should not fail part B because of having a wrong answer in part A. i.e sub parts should be independent from another. A scenario question should have more than one learning outcome(competence) Questions for which a learner can answer in one line are discouraged to be set.
- Local names and names of places should not be used in the scenario questions. Even words such as witchcraft since they are not assessed.

**THE FOLLOWING ARE THE CHANGES IN THE THEORY AND PRACTICAL PART OF PHYSICS.**

Physics now has two papers i.e P.I (the theory part) and P.II (the practical part) In the paper I, 3 scenario questions are to be set in section A from a combination of chapters and they are all compulsory. i.e

**SECTION A**

**3 scenario questions are to be set in section A**

1. Space physics
2. (Light + Waves) as a single question
3. Atomic and Nuclear Physics.

**SECTION B**

**Four scenario questions are to be set in section B i. e**

1. (Mechanics + Heat) 2 questions will be set each having both the chapters of which a learner attempts one question.
2. (Electricity + Magnetism) 2 questions will be set each having both chapters of which a learner attempts one question.

**3. IMPORTANT POINTS TO NOTE**

- A total of 2 questions will be attempted from section B. It implies a learner must have studied all the chapters since each question has a combination of 2 chapters. This gives a total number of 5 questions from both section A and section B.

- All questions will have a theory part and a calculation apart from space physics which will have no calculation. Calculations in space physics may be taught but should not be assessed by the teacher, the same applying to all what is not in the syllabus book.

### **THE FOLLOWING ARE THE CHANGES IN THE PRACTICAL PART**

1. In the practical part i.e PII, we had manipulation of data, presentation of data and analysis of data but now make sense of data has been added to teach students so that they can identify.
2. In practicals, a learner will meet two questions only. Either one from mechanics and the other from Electricity or one from light and the other from Electricity i.e one of the three chapters will not appear. And the learner will attempt one question.
3. The practical will also be scenario based. Scenario is a statement of a problem that does not tell the learner what to do but the learner creates procedures to meet the standard in investigation.
4. The standard will be set e.g".....carry out a scientific investigation to tell whether the lens provided to the child has a focal length that lies between (8cm and 12cm) or find out if the lens will work for the child.



5. The illustration for the arrangement well labelled will be provided for the learner

but in case there is any other procedure or method a learner wants to use, the

learner is allowed to come up with the illustration and it's procedures. **Below is**

**the structure of what a learner is expected to write about.**

1. Aim
2. List of the apparatus to use
3. Set up of apparatus drawn and well labelled(even alternatives are allowed)
- iv. Statement of variables  
Dependent.;.....Independent;.....Fixed.;..... v. stating the  
hypothesis. This is to be obtained from the scenario e.g the focal length of  
the lens lies between 8 to 12cm.
4. Procedures (The same way in the Old curriculum)
5. Presentation of data
6. Accuracy (S.Fs&D.Ps) of data presented and correctness  
(e.g=9.81,n=1.5,etc)
7. Data analysis can be graph or any other way a learner can present it.
8. Statement of hypothesis e.g(The focal length of the lens is between the  
range)
9. conclusion e.g discussion of the slope
10. Advice
11. Errors/mitigations (possible sources of errors).

## **BIOLOGY REPORT**

Greetings to my colleagues line the department. Allow we share with you what we discussed in the UNEB facilitation held at Seeta Green Campus on 16<sup>th</sup> March, 2024.

The facilitator was Mr Agaba Jude, the biology specialist in UNEB.

He began by grouping biology topics that seem to be related and their he came up with the following statement to be absorbed and taken more seriously. He gave us the format of biology paper one.

### **FORMAT OF BIOLOGY PAPER ONE**

This will comprise of two sections A and B.

#### **Composition of Section A.**

1. This will have four questions and learners will be expected to choose three items.
2. These items will be short scenario based questions.
3. These items will be got from integration of topics.
4. No items will be set from knowledge obtained from one chapter.
5. All scenario based items should be based on real life situations. Sometimes should or should not have a problem.
6. If the learner can answer the task directly the scenario becomes useless. So avoid writing a task which distorts the scenario.
7. Sometime support material does not need to be a photo.
8. Avoid long items because long items make the learners get lost.
9. All scenario questions in Section A require short responses.

### **Composition of Section B**

1. This will comprise two long scenario questions that requires a student to write an extended response or essay.
2. The learner is expected to choose only one question.
3. For extended items avoid tasks (a), (b) i.e the task should always be one.
4. When you develop an item, please always remove any redundant information that the learner may not need.
5. That UNEB is going to come up with an official document combining the above idea.

### **FORMAT OF BIOLOGY PAPER ONE**

1. This will be a practical paper. All practical scenario questions will require:
2. Observation
3. Question
4. Hypothesis.
5. Then normal things like procedures, observation and deductions will follow.

Therefore learners are going to spend more time writing down the above.

6. Practical to be set can be obtained from the syllabus book where they say design and carry out experiment.

### **Composition of practical paper.**

1. They will be two questions all compulsory for the practical paper.
2. One requiring scientific investigations as indicated above.
3. Second one from plant and animal anatomy.

4. He concluded by saying that **UNEB** will soon issue out the document that gives proper guidelines.

## CHEMISTRY REPORT

### AREAS TO BE EMPHASISED FOR

### END OF CYCLE ASSESSMENT IN CHEMISTRY

#### 1. THE LEARNER APPRECIATES CONTRIBUTION OF CHEMISTRY TO OUR ECONOMY

##### ASSESSABLE AREAS

(a) Manufacture of oxygen gas (b) Manufacture of chlorine gas (c) Extraction of metals(Na, Al, Fe, Cu, Zn) (d) Manufacture of fertilizers (e) Manufacture of detergents	(f) Manufacture of sodium hydroxide (g) Manufacture of sulphuric acid (h) Manufacture of cement (i) Manufacture of Ethanol (j) Manufacture of bio gas	<u>Process involves</u> <b>V - vessel</b> <b>Cp - chemical processes</b> <b>Cd - conversion to desired product</b> <b>Ch - coherence</b> <b>Pr -purification</b>
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#### BASIS OF ASSESSMENT

BASIS OF ASSESSMENT		CRITERIA OF ASSESSMENT	SCORE
A	Raw materials <b>Rm</b>	All raw material	02
		any one raw material	01
		no raw material	00
B	Process of production <b>Pp</b>	Process of production with all V, Cp, Ch, Pr	03
		Process of production with any three of V, Cp, Ch, Pr	02
		Process of production with any one of V, Cp, Ch, Pr	01
		No process of production	00
C	Side effects of the process of production and mitigation <b>Se</b>	Any one danger identified, explained and mitigated	03
		Any one danger identified and explained OR identified and mitigated OR explained and mitigated	02
		Any one danger identified OR explained OR mitigated	01
		No danger identified, explained or mitigated	00

D	Social benefits <b>Sb</b>	Any one social benefit identified, effect of the benefit and impact of the benefit	03
		Any one social benefit identified and effect of the benefit OR identified and impact of the benefit OR effect of the benefit and impact of the benefit	02
		Any one social benefit identified OR effect of the benefit OR impact of the benefit	01
		No social benefit identified	00

## 2. THE LEARNER APPRECIATES THE APPLICATION OF CHEMISTRY IN DAILY LIFE.

### ASSESSABLE AREAS

FOOD ADDITIVES		DRUGS AND MEDICINE	NUCLEAR PROCESSES	DETERGENTS
Flavour enhances Preservatives Glazing agents Gelling agents Glazing agents Anti-oxidants Bulking agents	Beverages Dyes(food colours) Stabilizers Thickeners Biological enzymes Whitening agents Firming agents	Antibiotics (penicillin & streptirine) Herbal medicine (Trachtroul medicine) Analgesics (aspirin, paracetamol codeine)	Nuclear fission Nuclear fusion Nuclear decay and half life	Soapy detergents Soapless detergent

### BASIS OF ASSESSMENT

BASIS OF ASSESSMENT		CRITERIA OF ASSESSMENT	SCORE
A	Category/type of product	Any one product and category/type of product identified	02
		Any one product or category/type of product identified	01
		no product nor category/type of product identified	00
B	Function(s) of product(s)	Anyone function of product(s)	01
		No function of the product(s)	00
C	Dangers or Side effects of the product and mitigation	Any one danger/side effect identified explained and mitigated	03
		Any one danger/side effect identified explained and mitigated	02
		Any one danger/side effect identified and explained OR explained and mitigated	01

		No danger/side effect identified OR mitigated	00
D	Evaluation of products/processes	Evaluation of products/processes basing on both similarities and differences	02
		Evaluation of products/processes basing on either similarities OR differences	01
		No evaluation of products/processes	00

### 3. THE LEARNER APPRECIATES DIVERSITY AND INTERACTIONS OF SUBSTANCES AND THEIR IMPORTANCE IN LIFE.

#### ASSESSABLE AREAS

(a) Elements, compounds and mixtures (b) The periodic table (c) Trends in the periodic table (d) Reactivity series	(e) Structure and bonds (f) The mole concept (g) Materials other than plastics (h) Polymers and Plastics
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#### BASIS OF ASSESSMENT

BASIS OF ASSESSMENT		CRITERIA OF ASSESSMENT	SCORE
A	Category of element, compound, substance or material with a reason	Identified category of element, compound, substance or material with a reason and example	03
		Identified category of element, compound, substance or material with either example OR reason	02
		Identified category of element, compound, substance OR material OR reason only OR example only	01
		No identified category of element, compound, substance OR material OR reason OR example	00
B	Properties or prediction of properties of element, compound, substance OR material	At least four properties or characteristics or predictions of trends	03
		At least two properties or characteristics or predictions of trends	02
		Any one property or characteristic or prediction of trends	01
		No property or characteristic or prediction of trends	00
C	Uses of element, compound, substance or material/applications/ quantity of matter i.e moles	Any one use/application	01
		No use/ application	00
D		Identified impact and mitigation	02

	Impact/ pollution of environment by element, compound, substance or material and mitigation	Identified impact OR mitigation	01
		No Identified impact OR mitigation	00

#### 4. THE LEARNER APPRECIATES THE EXISTENCE OF NATURAL RESOURCES IN THE ENVIRONMENT AND THEIR IMPORTANCE IN EVERYDAY LIFE

##### ASSESSABLE AREAS

(a) Air (b) Water (c) Rocks and mineral resources	(d) Carbon based fuels (e) Fossil fuels
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#### BASIS OF ASSESSMENT

BASIS OF ASSESSMENT		CRITERIA OF ASSESSMENT	SCORE
A	Identity of category of natural resource, reason and example	Identified category of natural resource with a reason and example	03
		Identified category of natural resource with a reason OR Identified category of natural resource with example	02
		Identified category of natural resource OR example	01
		No identified category of natural resource	00
B	Composition of natural resource	Any two components of natural resource	02
		Any one component of natural resource	01
		No component of natural resource	00
C	Impact of the natural resource on the environment, how it occurs, and mitigation	Anyone Impact of the natural resource on the environment, how it occurs, and its mitigation	03
		Anyone Impact of the natural resource on the environment and how it occurs OR Anyone Impact of the natural resource on the environment, and its mitigation	02
		Anyone Impact of the natural resource on the environment OR how it occurs OR its mitigation	01
		No Impact of the natural resource on the environment, how it occurs, and its mitigation	00
D		Any one benefit/importance of natural resource	01

	Benefit/importance of natural resource	No benefit/importance of natural resource	00
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## PRACTICAL PAPER TWO

**THE LEARNER UNDERSTANDS THAT CHEMISTRY IS A PROCESS OF EVIDENCE-BASED ENQUIRY INVOLVING THE COLLECTION OF EVIDENCE AND THE DEVELOPMENT OF THEORIES THAT HELP US EXPLAIN THE EVIDENCE  
(SCIENCE PROCESS SKILLS)**

### BASIS OF ASSESSMENT

Basis of assessment	Assessment criteria	Scoring
<b>Aim of the experiment</b>	<ul style="list-style-type: none"> <li>Aim of experiment with both key words</li> <li>Aim of experiment with one key word</li> <li>No aim of the experiment</li> </ul>	02 01 00
<b>Variable for the experiment</b>	<ul style="list-style-type: none"> <li>Independent, dependent and controlled</li> <li>Independent and dependent or independent and controlled or dependent and controlled variable</li> <li>Independent or dependent or controlled variable</li> <li>No variable</li> </ul>	03 02 01 00
<b>Hypothesis</b>	<ul style="list-style-type: none"> <li>Hypothesis related to experiment with both key words</li> <li>Hypothesis related to experiment with one of key words</li> <li>No / wrong hypothesis of the experiment</li> </ul>	02 01 00
Basis of assessment	Assessment criteria	Scoring
<b>Procedure of the experiment</b>	<ul style="list-style-type: none"> <li>Relevant material, relevant procedure, coherent procedure of the experiment</li> <li>Relevant materials and procedure</li> <li>Either relevant material or relevant procedure</li> <li>No relevant material and procedure</li> </ul>	03 02 01 00
<b>Risks and mitigations</b>	<ul style="list-style-type: none"> <li>Any one risk identified and mitigated</li> <li>Any one risk identified or mitigated</li> </ul>	02 01



	<ul style="list-style-type: none"> <li>No risk identified or mitigated</li> </ul>	00
<b>Presentation of data</b>	<ul style="list-style-type: none"> <li>2/3 of required sets of data appropriately presented</li> <li>1/3 of required sets of data appropriately presented</li> <li>Data appropriately presented without required sets</li> <li>Data partially appropriately presented without required sets</li> <li>No set of data presented</li> </ul>	04 03 02 01 00
<b>Recording of data</b>	<ul style="list-style-type: none"> <li>Appropriate recording of data within the error margin</li> <li>Partial appropriate recording of data within the error margin</li> <li>Appropriate recording of data outside the error margin</li> <li>Partial appropriate recording of data outside error margin</li> <li>No data recorded/ data recorded outside error margin</li> </ul>	04 03 02 01 00
<b>Data analysis and interpretation</b>	Method used is: <ul style="list-style-type: none"> <li>Appropriate and accurate</li> <li>Appropriate and partially accurate</li> <li>Appropriate and inaccurate</li> <li>Inappropriate and inaccurate</li> </ul>	03 02 01 00
<b>Conclusion</b>	Conclusion based on data interpretation No conclusion based on data interpretation	01 00

### PRACTICAL ASSESSABLE AREAS

<ul style="list-style-type: none"> <li>Chemical reaction rates</li> <li>Energy changes during chemical reactions</li> <li>Formulae, stoichiometry and mole concept</li> </ul>	<ul style="list-style-type: none"> <li>The reactivity series</li> <li>Solubility of Salts</li> <li>Soapy detergents and hardwater</li> </ul>
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### EXAMPLE 1

A group of researchers observed that metals **X, Y, Z, P** and **Q** are useful in construction of structures, electrical conduction, alloying, galvanization, formation of other compounds by displacement etc. They noticed that reactivity series of metals is a fundamental concept

that finds practical use in numerous aspects of our daily lives and in various industries, aiding in their maintenance, efficient and safe use of the metals in their applications.

They wanted to investigate about reactivity of the metals but they did not know and what to do.

### **TASK**

As chemistry student, design an experiment the researchers could use.

#### **Aim:**

An experiment to determine the order of reactivity of elements **X, Y, Z, P** and **Q**

#### **Procedure:**

- a) 25cm<sup>3</sup> of **the acid is** pipetted into a plastic beaker or cup.
- b) At once all the amount of **X provided is** added into the acid in the plastic beaker and at the same time the stop clock started
- c) **The mixture is** stirred gently with the thermometer and the temperature of the mixture recorded after every half minute in a **Table** up to the seventh minute.
- d) **Steps (a) up to (c) are repeated for the other elements Y,Z,P and Q**

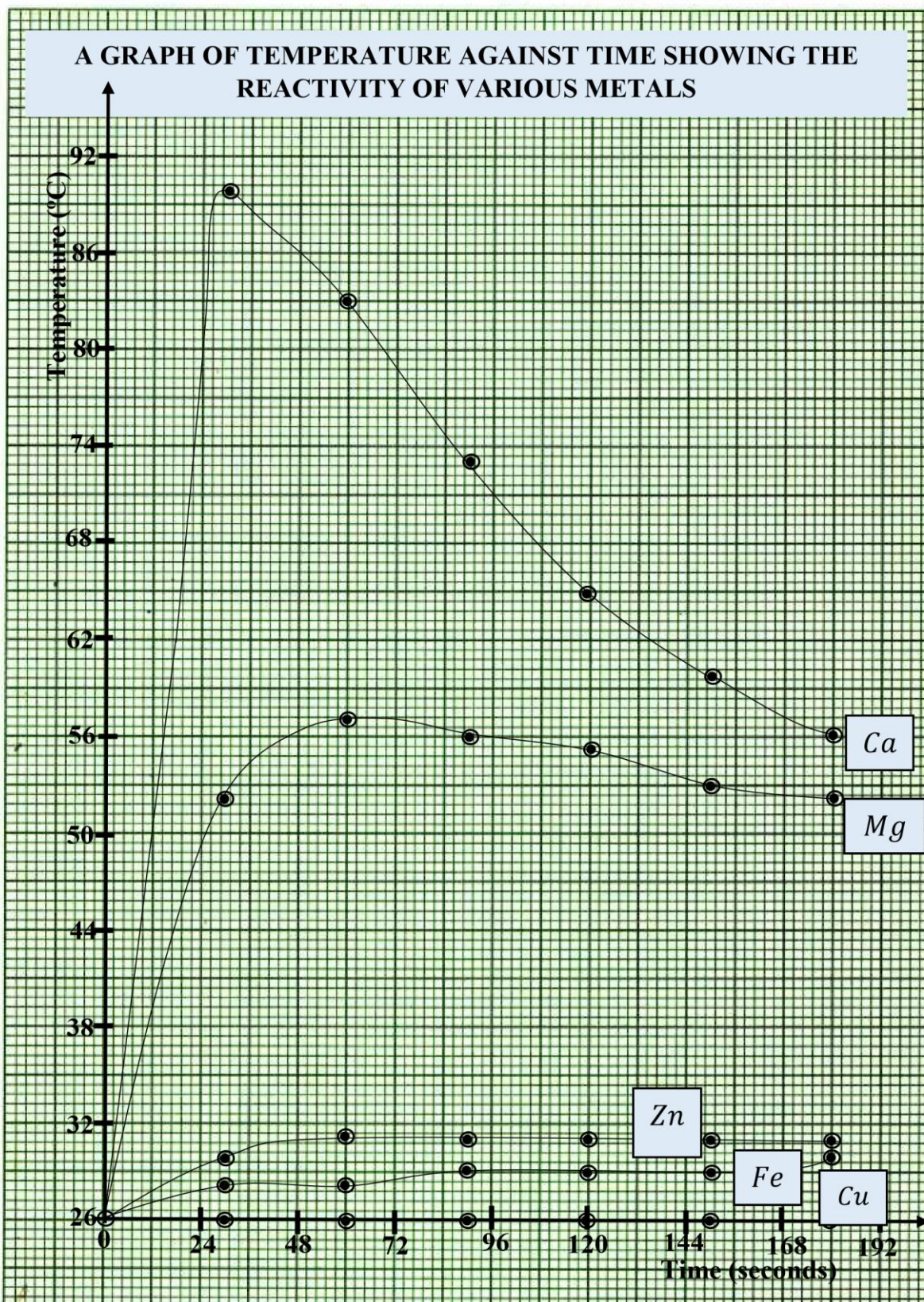
#### **Variables:**

- The dependent variable is temperature
- The independent variable is time
- The controlled variable is volume of hydrochloric acid. It is controlled by maintaining it constant.



## Data

TIME OF REACTION /sec	Room temperature	30	60	90	120	150	180
	X	26.0	30.0	31.0	31.0	31.0	31.0
	Y	26.0	90.0	83.0	73.0	65.0	60.0



<b>Temperature due to heat evolved by reaction of metal with acid(<math>^{\circ}\text{C}</math>)</b>	<b>Z</b>	26.0	52.0	57.0	56.0	55.0	53.0	52.0
	<b>P</b>	26.0	26.0	26.0	26.0	26.0	26.0	26.0
	<b>Q</b>	26.0	28.0	28.0	29.0	29.0	29.0	30.0

### Data analysis

**Q** is the least reactive because it gives out the lowest amount of heat as shown by the shallowest gradient and lowest temperature rise

**X** is the most reactive because it gives out the highest amount of heat as shown by the steepest gradient and highest temperature rise

**Y, Z** and **P** are moderately reactive because they give out the moderate amount of heat as shown by the intermediate gradient in that order

*NB: learners can opt to calculate the maximum heat evolved and use it to arrange the elements*

### Conclusion:

The order of reactivity is **X (Ca), Y (Mg), Z (Zn), P (Fe), Q (Cu)**, or **Q, P, Z, Y, X**

### REPORT COMPILED BY

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