

NAME.....STREAM.....

TERM ONE EXAMINATIONS 2024

S.2 PHYSICS

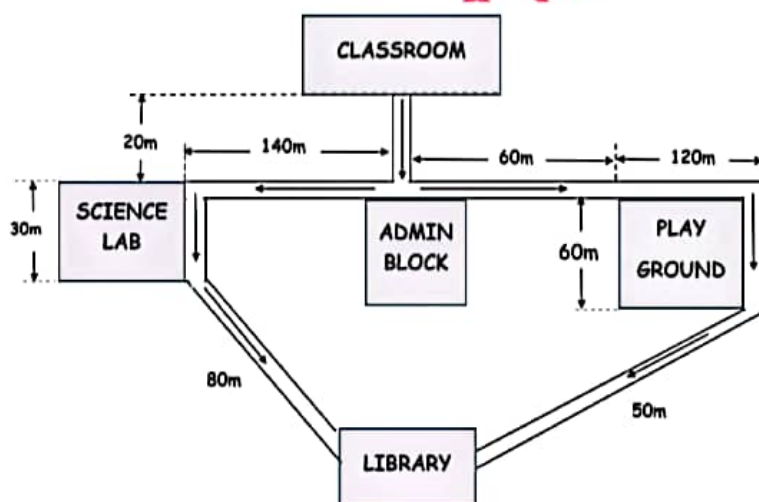
TIME: 2 HOURS

INSTRUCTIONS

- ❖ Attempt any **THREE** questions only.
- ❖ You may use silent, non-programmable calculator.
- ❖ Show all your workings clearly step by step using **paragraphs**.

QUESTION ONE

One of the students in a certain school in Hoima, is a class captain who is responsible for picking books from the library to the classroom during every lesson conducted. This student gets tired by the end of the day due to many lessons from various subjects taught each day. There are only two possible routes the students are allowed to use during class hours. The students of this class normally sweep their classrooms during lunchtime on hot sunny days. This has made many students to complain about the too much dust particles moving in the air in the classroom making them uncomfortable.

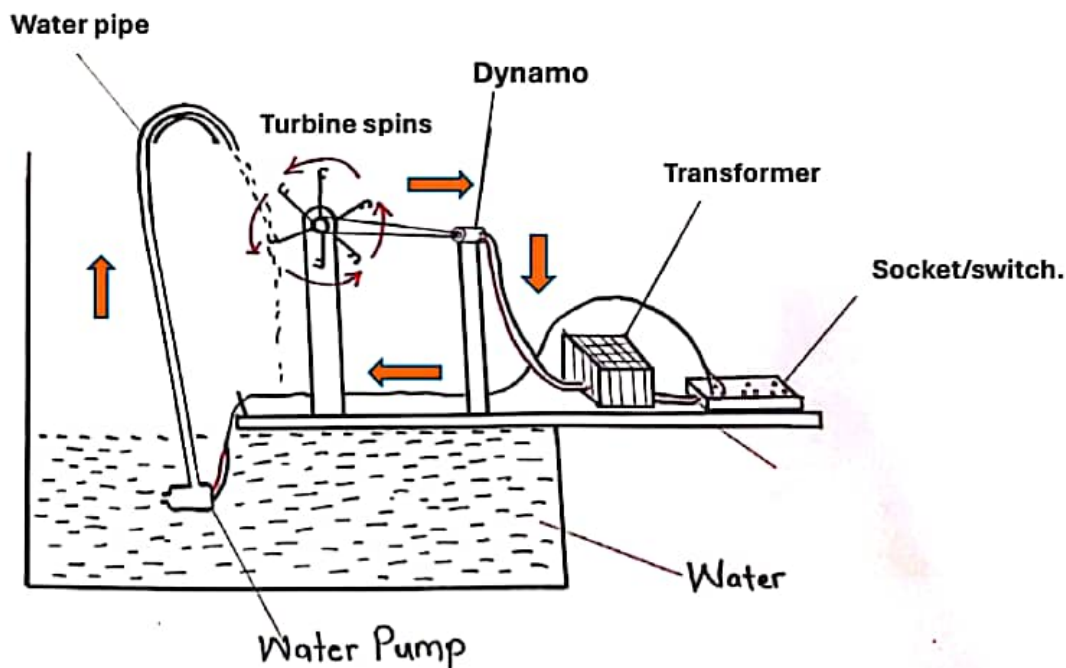
**TASK**

- a) Write a workout of how you can help this class captain identify the **shortest** route from the library to the classroom and **why** is it necessary to do so.
- b) Explain to the members of this classroom **why** dust particles too much during that time of the day?
- c) What **advice(s)** would you give to members of this class regarding the too much dust particles during that time of the day. What would be the **best time** to do so and **why**?

QUESTION 2

A group of students were developing a Hydro Electric Power (HEP) generator project to conserve the environment by producing clean energy. The power rating of the water pump used is 2 kW. The pump can draw 1200kg of water in one minute. However, they are not sure of the required height of the water pipe above the ground if their project is to be successful.

SKETCH OF HYDOR ELECTRIC POWER (HEP) GENERATOR



Hint; acceleration due to gravity, $g = 10 \text{ ms}^{-2}$

hint; Force = weight of the object (mg)

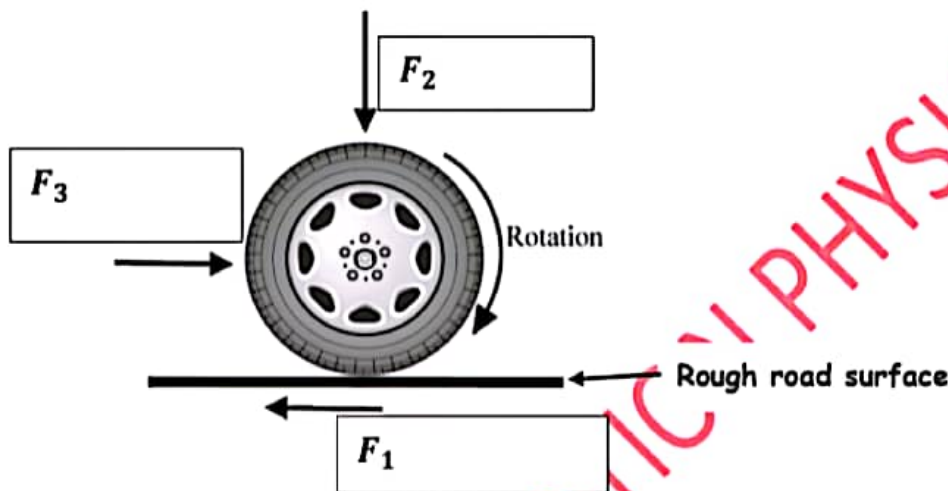
Hint: The transformer increases (steps up) the voltage of the electricity so that it may travel through the power lines to homes and businesses.

TASK.

- How high should the water pipe be above the ground if their project is to be successful?
- Suppose you were one of the presenters of this project, explain using the law of conservation of energy the **energy changes** taking place in this project and **verify (prove)** if indeed energy is conserved.

QUESTION THREE

A school bus of average weight $100,000\text{N}$ was transporting the school team for the football competition to a neighbouring school. The engine of the bus applied a forward driving force of 2000N against a constant frictional force of 500N . As the school bus was negotiating a corner, the tyres failed to grip the ground firmly and the vehicle slipped and overturned. Some students sustained minor injuries due to the accident. On further investigation, the traffic police discovered that the tyres of the school bus were worn out, the moving parts of the school bus were not well lubricated/oiled/greased.



Task

- a) If you were the investigation journalist addressing the cause of this accident, how will you be able to
- Indicate the forces acting on the tyres at that time.
 - Determine the **resultant/net force** acting on the tyres at that time.
 - Explain the main **cause(s)** of this accident according to the information provided in the scenario above and in each cause explained, provide a suitable **recommendation**.

QUESTION FOUR

Workers in a certain farm normally rest under temporary, structures made of carpets which is painted black. During daytime, when it is hot and sunny, they normally feel uncomfortable to rest under these structures, so they instead prefer resting under trees. When their manager heard about their complaint, he measured the temperature of the air inside the structure during daytime, and he observed that the length of the mercury thread of the thermometer was 35cm. However, at night the workers prefer to rest under these structures to keep them warm and comfortable.

More support information.

- The length of the mercury thread at upper fixed point is 98 cm.
- The length of the mercury thread at lower fixed point is 4 cm.
- The normal room temperature of surrounding air is 25°C .

TASK

- Write down an explanation to these workers why they are uncomfortable during daytime and comfortable at night.
- What was the exact value of the temperature of the air inside of the tent? And what does this value mean compared to the normal room temperature?
- What possible adjustment (s) can you make to these structures in order to make it comfortable for resting even during daytime.



The Author of this workbook is an experienced teacher following the competence based curriculum who has taught in schools like Green Hill Academy, Kakungulu Memorial SS and currently at Mandela SS. The author of this book is a graduate teacher of physics and mathematics from Makerere University.

This book will ease your work since all types of questions have been included which require knowledge application and The questions have been made as simple as possible to enable students easily understand (very many examples, pictures, and illustrations). The various activities of integration have also been included at the end of each topic to enable students apply the knowledge attained from already learnt topic. The worksheet is to help students practice as many questions as possible. The space provided is just enough for each question asked. The book provides a brief introduction, short answer questions in the right sequence as it is recommended by other text books available in the market.

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SENIOR THREE PHYSICS WORKBOOK 2024

PHYSICS

Workbook

&

Activities of integration

S.3
O-Level



1ST EDITION 2024

"NEXT GENERATION LEARNER"

By Onderi Kenneth
0705476300 / 0771940855



The Author of this workbook is an experienced teacher following the competence based curriculum. The author is a graduate teacher of physics and mathematics from Makerere University.

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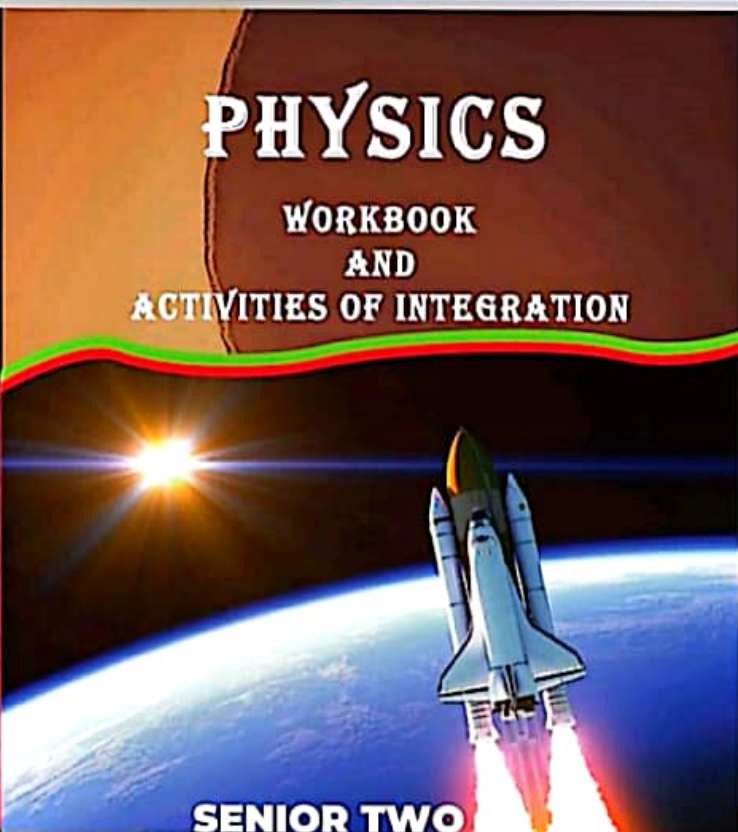
SENIOR TWO PHYSICS WORKBOOK 2023

PHYSICS

WORKBOOK

AND

ACTIVITIES OF INTEGRATION



SENIOR TWO

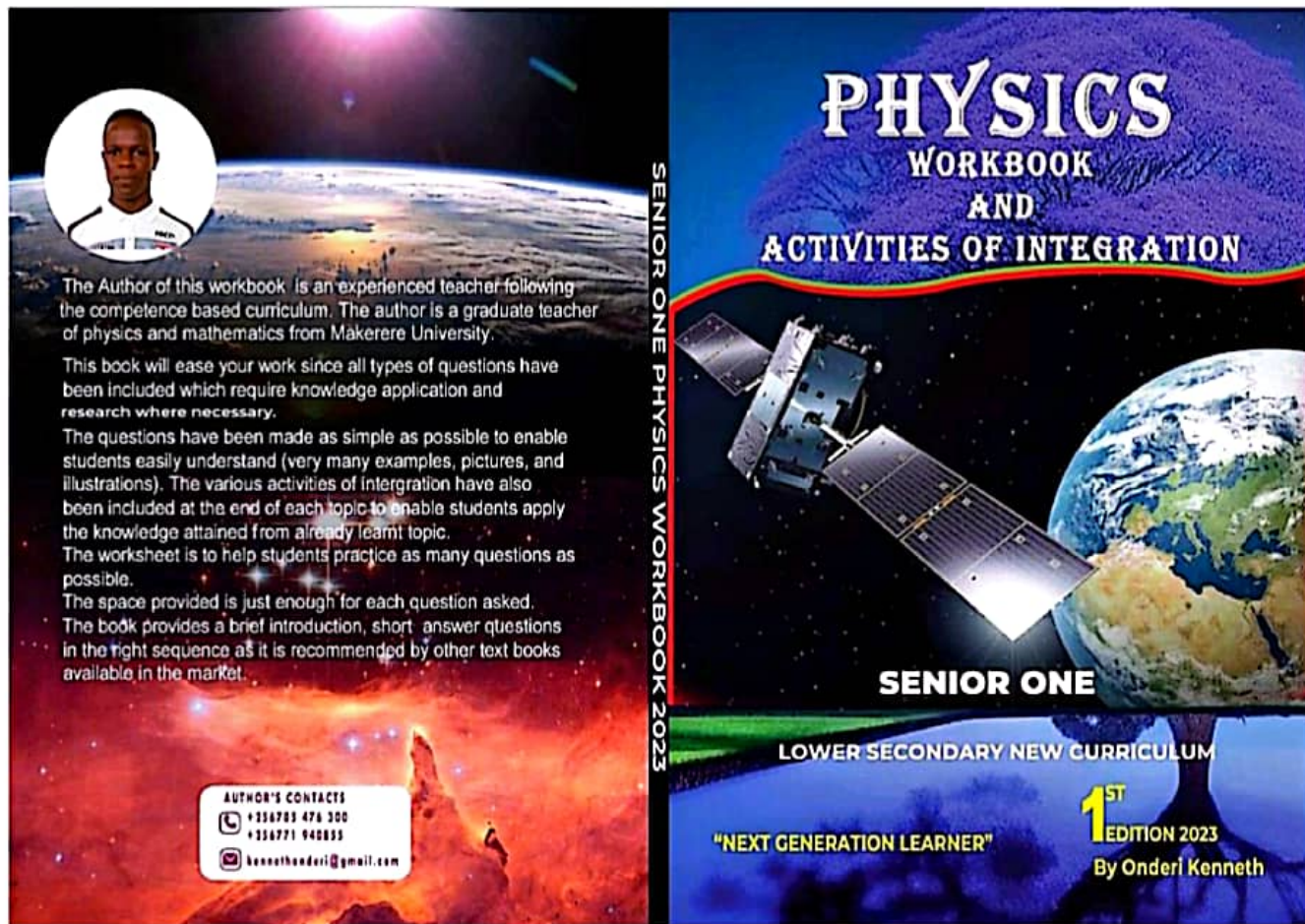
LOWER SECONDARY NEW CURRICULUM



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CamScanner



✚ **Get in touch with the author to get the scoring guide and implement the competency-based curriculum with ease.**

✚ You can also contact the author for the above TEXTBOOKS.

✚ **BOOK FOUR** is to be released this **JUNE 2024**

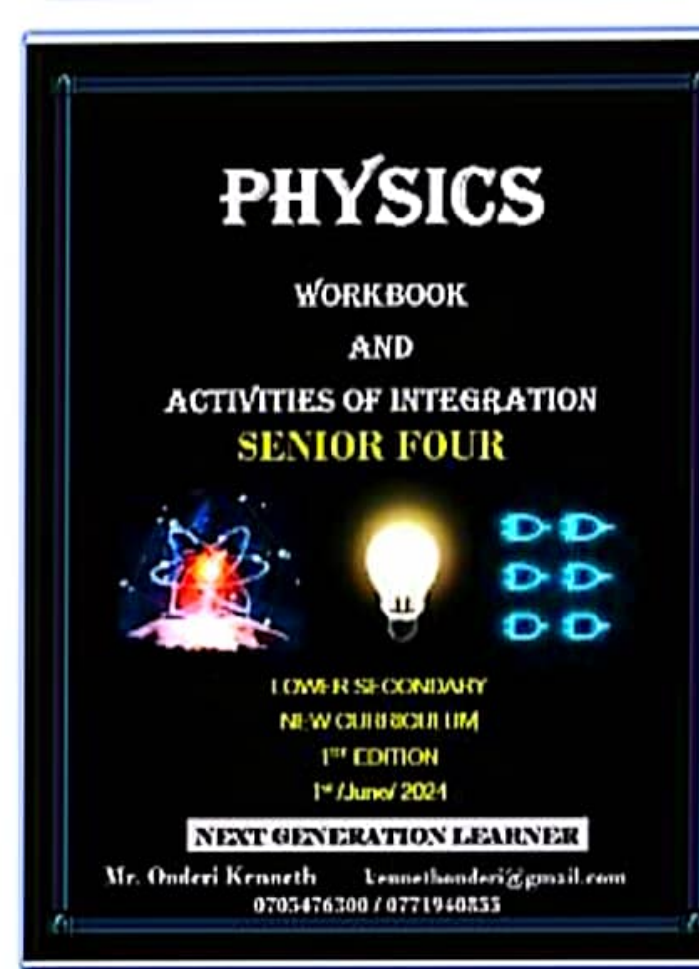
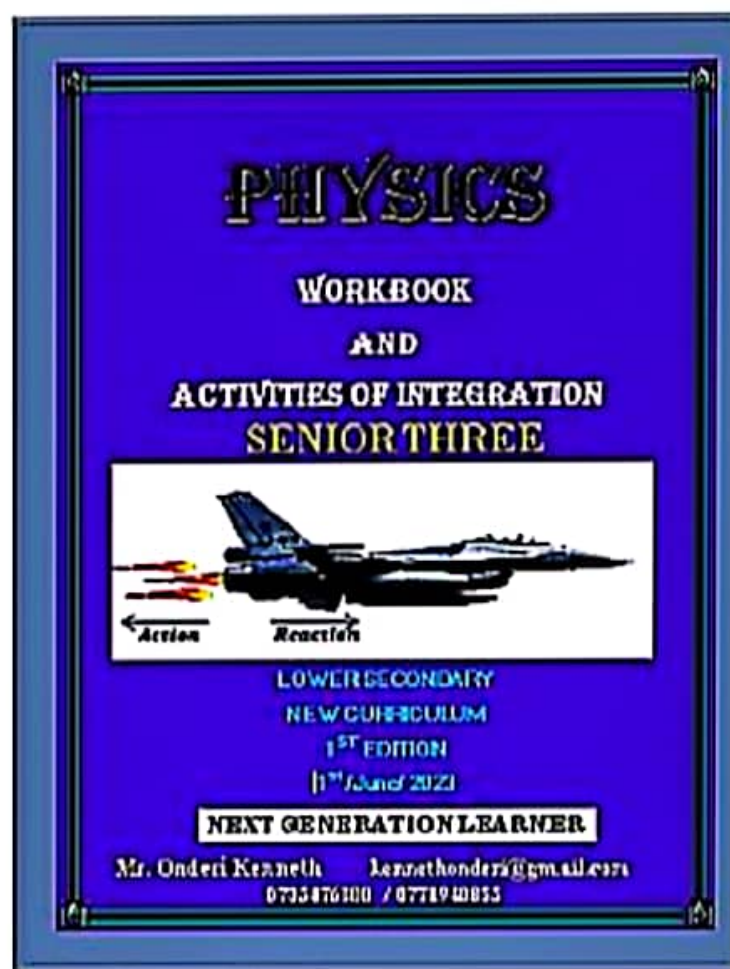
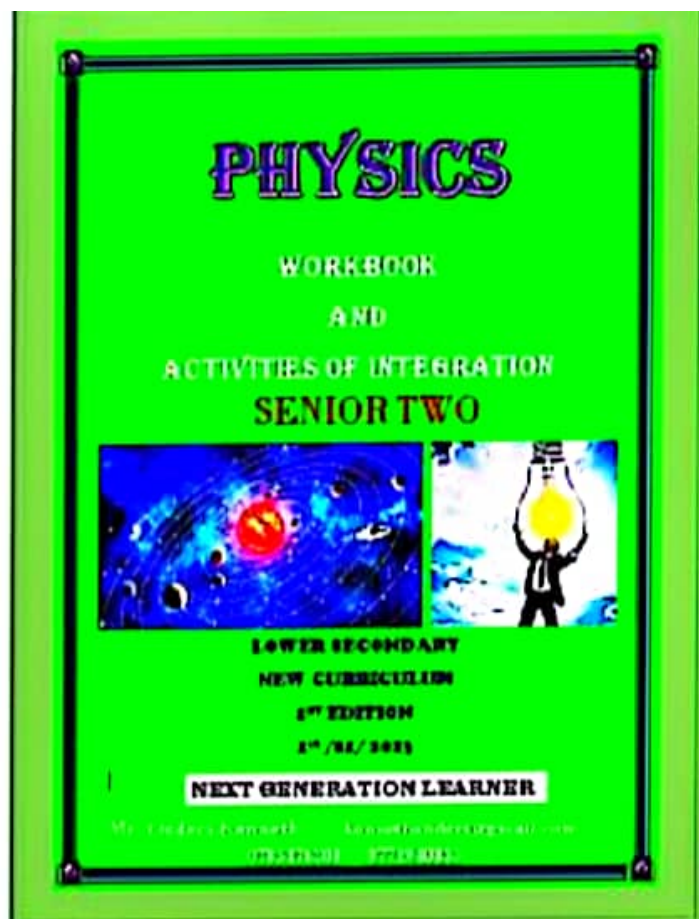
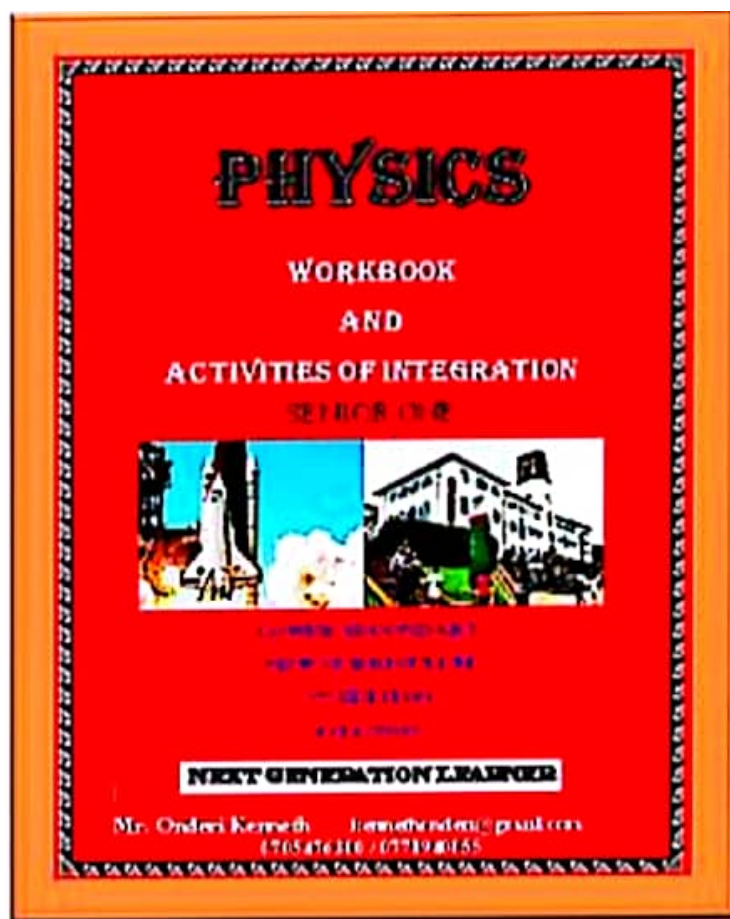
✚ The workbooks are meant to simplify groupwork for learners and teachers as well.

✚ Scenario based questions are available in the workbooks.

✚ Perfect illustrations are drawn in the workbooks.

✚ Positive criticism is well received to help improve our service delivery to the nation in terms of physics as a subject and how the books should be like in order to make the subject better.

✚ **Get in touch with the author @**
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kennthonderi@gmail.com



<<<<<<<THE END>>>>>>>

<<<<<<<Just do your best and success is guaranteed>>>>>>>

S.2 NEXT GENERATION PHYSICS @2024