

5E's LESSON PLAN IN NEWTON'S LAWS OF MOTION

Teacher: (Insert Name)

Learning Area: Physics

Grade Level:

Grade 8 Date: June 22, 2021

Quarter: First Quarter

Time Frame: 1 Hour

I. OBJECTIVES

A. Content Standard

The learners demonstrate an understanding of Newton's three laws of motion and uniform circular motion.

B. Performance Standard

The learners shall be able to provide and present a written description and observation through a "Newton's Mini-Activity".

C. Learning Competency

- Investigate the relationship between the amount of force applied and the mass of the object to the amount of change in the object's motion;
- Infer that when a body exerts force on another, an equal amount of force is exerted back on it;
- Demonstrate how a body responds to changes in motion;

D. Specific Objectives

At the end of the lesson, the students will be able to:

- Explain the understanding of the concepts of Newton's three laws of motion.
- Relate and appreciate the significance of Newton's laws of motion with respect to force and mass in daily life.
- Manipulate the activity and models representing the laws of motion

II. SUBJECT MATTER

A. Topic: Newton's Laws of Motion

B. Learning Resources

References:

- Smith, J.O. Physical Audio Signal Processing, <http://ccrma.stanford.edu/~jos/pasp/>, online book, 2010 edition, accessed July 25, 2021
- <http://www.pas.rochester.edu/~blackman/ast104/newton3laws16.html>
- <https://www1.grc.nasa.gov/beginners-guide-to-aeronautics/newtons-laws-of-motion/>
- Newton's First Law of Motion | Forces and Motion | Physics | Don't

Memorise <https://www.youtube.com/watch?v=5oi5j11FkQg>

Materials: Laptop, Speaker, Projector set, General Power Point Presentation, Worksheets for Activities, Materials for each stations, ball of crumpled paper

Methods: 5E's (*Engage, Explore, Explain, Elaborate, and Evaluate*)

Approach **Value Integration:** Learning and Understanding, Team work and

Appreciation

III.PROCEDURE

TEACHER'S ACTIVITY	STUDENT'S ACTIVITY
ENGAGE (Get the students mind focus on the topic)	
A. PRELIMINARY ACTION	
a. Greetings "Good Morning class!"	(Students will response to the teachers' greetings)
b. Prayer "Let us begin with a prayer, kindly stand everyone and let us pray"	(Students will stand and pray)
c. Classroom Management "Before you take your sits. Arrange your chairs and pick up all the pieces of papers and plastics scattered in your respective area" "You may take your sits, thank you class."	(Students will follow) (Students will take their seats)
d. Checking of Attendance "Let me check the attendance for today, if you are here, kindly raise your right hand and say present, Is it clear class?"	"Yes, Ma'am!" (Every student will raise their right hand and say present)
e. Review "Before we proceed, may I ask anyone who can discuss and give a short recap of what we have discussed last meeting, anyone?"	Student Z: "Last meeting we discussed Mechanics, wherein it is about the study of motion, forces, and energy. Motion is the action of changing location or position.

<p>“Thank you for a very informative and well explained review. If you have clarifications to make you can present and share it to the class, anyone?”</p> <p>“If there is none, which is a good indication or sign that you have learned about our previous lesson. Thank you for that class.”</p> <p>B. LESSON PROPER ACTIVITY</p> <p>Today, we will be acquainted with another topic. To start, we will be having a short game activity.</p> <ul style="list-style-type: none"> · The class will pass the ball of crumpled paper, when the ball is stopped, the student who has it will read the question or statement and answer it. · The game activity will continue until the crumpled paper outwears every piece of it. <p>QUESTION/STATEMENT:</p> <ul style="list-style-type: none"> · Good Morning · Let us have a game! · Do you have any idea who Isaac Newton is? · What is the first thing that comes into your mind when you hear the word motion? · Any idea about laws of motion? · Give a situation or an event that you do today. · I hope you enjoyed the game. <p>Alright! This is just a start; at least we were able to know if you have background knowledge on today’s topic, Newton’s Laws</p>	<p>A force is any interaction that causes a change in motion, shape, or energy. A system possesses energy if it has the ability to do work. Furthermore, work is done when there is a force that causes a change in the energy of a system.”</p> <p>Students will follow the instruction (passing, reading, and answering)</p>
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<p>of Motion. Those questions that are written in crumpled papers are essential as we deal in with our discussion.</p> <p>To continue, please exchange you index cards to your seatmates to check if you were able to define the words or terms that I have given last meeting. Put a check there and mark complete if they were able to define motion, mass, inertia, acceleration, velocity, and force. Incomplete if not, and no preparation if there is no answer.</p> <p>Since we have 6 terms here, I will call one representative per table to share the picture that represents the term and the short own definition of the term. Ready now?</p> <p>TERMS TO DEFINE PER TABLE No. 1 – Motion No. 2 – Mass No. 3 – Inertia No. 4 – Acceleration No. 5 – Velocity No. 6 – Force</p> <p>Since you already have an idea on some of the terms that we will encounter in our topic, let us dig in deeper to our discussion by having another activity.</p>	<p>(Students will follow the instruction)</p> <p>(Group Representative will recite)</p> <p>(Students are listening)</p>
<p>EXPLORE (Provide students with a common experience)</p>	
<p>Now, let's proceed to Newton's Mini-Activity to get to understand more the laws of motion.</p> <p>ACTIVITY INSTRUCTION:</p> <ol style="list-style-type: none"> 1. All groups/teams will be given instructions at every station and the answer sheet provided by the teacher. The game consists of 3 stations. Each station corresponds to Newton's laws of motion. 2. The stations have different games to be played. Each group will rotate after conducting the experiment. 3. Once finish, the leader will raise the flag team to call out the attention of 	<p>(Students are listening)</p>

<p>the mediator.</p> <p>4. Each group will answer the questions in the worksheet given and discuss it to the class afterwards.</p> <p>Are you ready for class?</p> <p>You may start now! Good luck!</p> <p>STATION 1: <i>RESCUE ME!</i></p> <p>Materials</p> <ul style="list-style-type: none">· A toy car, which can fit a 'rider'· Some sort of rider (doll, Barbie, GI Joe)· A ramp (books, a piece of wood)· Something at the end of the ramp that will stop the car abruptly (book) <p>Directions</p> <ul style="list-style-type: none">· Release the car and rider down the ramp· Repeat, this time placing an obstacle in the way so the car comes to an abrupt stop <p>Teacher Notes: The doll should fly out, representing Newton's First Law</p> <p>STATION 2: <i>DROP ME!</i></p> <p>Flour Materials:</p> <ul style="list-style-type: none">· marble vs. paper ball· ping pong ball vs. golf ball· magnet vs. penny· flour and tray <p>Directions: Students will drop both objects from the same height and see what impact the object made on the flour (the size of the crater in the flour). Sketch what the craters look like in the flour.</p> <p>STATION 3: <i>SWING ME!</i></p> <p>Materials</p>	<p>“Yes, Ma’am!”</p> <p>(Students will conduct the activity)</p> <p>(Students will conduct the activity)</p>
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<ul style="list-style-type: none"> · Seven balloons (one/group) · A string, which is taped to two points in the room · A straw, which the string is fed through · Tape <p>Directions:</p> <ul style="list-style-type: none"> · Tape the balloon to the straw · Blow up the balloon (do not tie it) · Release the balloon · Throw away the balloon <p>Teacher Notes: the balloon should travel along the string. This represents Newton's Third Law.</p>	
EXPLAIN (Teach the concept. Should include interaction between teacher and students)	
<p>How was the activity? Now, for us to furtherly understand the concepts in the activity, kindly answer the provided questions being asked in your activity sheets. Please write the group name and members at the last page of the paper. Collaborate and work together to comprehend and answer the questions being asked.</p> <p><i>(The group will be given 10 minutes to answer the activity sheet)</i></p> <p>(The teacher will allow students to formulate answers based on their own observation and interpretation)</p> <p>Class, 10 minutes have finished, kindly go back to your respective seats.</p> <p><i>(The teacher will present the PowerPoint Presentation and Infographics)</i></p> <p>To explain, first, we will start by knowing who the man behind these laws is.</p> <p>To proceed, let us discuss Newton's first law of motion called the Law of Inertia. Who can read this? [Student name]</p> <p>Next, the second law which is the Law of</p>	<p>(Each group will collaborate and participate with their members)</p> <p>(PRESENTATION OF OUTPUT PER GROUP)</p> <p>(Students will go back to their seats)</p> <p>(Class are listening and participating)</p>

<p>Acceleration.</p> <p>Is there a volunteer to read and explain this in your own understanding?</p> <p>Yes, [Student name]</p> <p>Lastly, the Law of Interaction which is the third law of motion.</p> <p>Read and explain [Student Name]</p>	
<p>ELABORATE (Students apply the information learned)</p>	
<p>Now, I want to know if the class already understands the topic for today. To continue, I will allow each group to present answers based on the assigned number of questions that each group will share with the class. Each group can have two representatives to explain.</p> <p>For group/ team 1, you will answer questions 1 to 4 including the table.</p> <p>For group/ team 2, you will answer questions 5 to 8 and explain the sketch.</p> <p>For group/ team 3, you will answer questions 9 to 12 including the table.</p> <p><i>(The teacher will allow group representatives to explain their works and/or answers within 2-3 minutes)</i></p> <p>How was the activity class? Is it fun?</p> <p>Amazing work class! Congratulations to each group!</p> <p>Allow me to play this short video for you guys to fully understand and memorize the concept being taught to us by Mr. Isaac Newton.</p> <p><i>(Plays the short video presentation)</i></p> <p>So, what is the significance of the laws of motion to our daily lives?</p> <p>Excellent answers once again class!</p>	<p>(Students active participation and recitation)</p> <p>“Yes, Ma’am! We had fun and we learned!”</p>

<p>Thank you very much!</p> <p>Are there any questions?</p>	<p>None, Ma'am.</p>
<p>EVALUATE (How will you know the students have learned the concept?)</p>	
<p>To end our session for today, kindly get your quiz notebook and we will be having a quiz.</p> <p>Directions: Answer the questions briefly.</p> <ol style="list-style-type: none"> 1. Differentiate the three laws of motion and be able to give examples. (Do not use the activity/experiments that we have used in the stations) -5 points each laws 2. Make a one paragraph essay stating the importance of the laws of motion in our day-to-day living. -5 points <p>If you are done, pass your quiz notebook in front and copy the assignment presented on the screen.</p> <p>Further questions? Clarifications? If there's no question or clarifications to make, Thank you for participating in class, that's all for today. Good afternoon and good bye!</p>	<p>(Students will get their quiz notebook and will take the quiz)</p> <p>(Students will follow)</p> <p>(Students response will be based if they have questions or clarifications) "Thank you Ma'am, Good bye!"</p>

Noted/Checked: _____

Date: _____

Prepared by: _____

