



**UNITED NATIONS SCHOOL**  
PHYSICS WORKSHOP  
FIRST PERIOD  
EIGHTH GRADE  
TEACHER: JAIRO ORJUELA SEGURA

**The workshop must be solved in the notebook and delivered in the first physics class in April.**

KINEMATICS: Motion Along A Straight Line.

LEARNING GOAL: The students should be able to:

- converts a verbal description of a physical situation involving uniform acceleration in one dimension into a mathematical description;
- recognizes whether or not a physical situation involves constant velocity or constant acceleration.

CONCEPTS:

- Kinematics – the part of mechanics that enables us to describe motion.
- Dynamics – helps us understand why objects move in different ways.
  - Position : is a vector quantity, an object position is its location relative to a reference point (or origin of a coordinate system)
  - Time: an interval separating two points of this quantity; a duration
  - Distance: is the total movement of an object without any regard to direction. We can define distance as how much ground an object has covered despite its starting or ending point.

- A car travels at a constant speed of 75.5 km/h along a straight road. How far will the car travel in 2.5 hours?
- An object moves with a constant velocity of 12.8 m/s for 6.2 seconds. What distance does the object cover during this time?
- A cyclist maintains a constant speed of 18.7 km/h for 3.8 hours. What is the total distance covered by the cyclist?
- A train moves at a constant speed of 100 km/h for 3 hours. How far does the train travel during this time?
- An airplane flies at a constant speed of 800 km/h for 1.5 hours. What distance does the airplane cover in this duration?
- A cyclist maintains a constant speed of 20 m/s for 40 seconds. Calculate the distance traveled by the cyclist during this time.
- A boat moves at a constant speed of 30 knots for 2.5 hours. How far does the boat travel in nautical miles?
- A runner maintains a constant speed of 12 km/h for 1.25 hours. Calculate the total distance covered by the runner.
- A spaceship travels at a constant velocity of 10,000 km/s for 0.02 seconds. What distance does the spaceship cover in this brief period?
- A cyclist rides at a constant speed of 18 km/h for 2.75 hours. Determine the total distance traveled by the cyclist during this time.