Kinematics

Physics 11 at Happy Rock
with Mr. Martens

The motion of objects can be described in precise ways.

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What we will be learning

This unit is about motion and how it can be understood and how it can be described.

The goal of this unit is to better **understand that**:

- Physics concepts about motion are constructed.
- A rate is describes how a quantity changes with time.
- The future location and motion of objects can be predicted based on their past location and motion.
- An object's motion can be described in different ways (words, equations, graphs).

Key Terms

- clock reading
- position
- rate
- average velocity
- instantaneous velocity
- acceleration
- deceleration

What will come next

Our next topic is Forces.

Forces make things change. Without them everything would keep doing the same thing over and over and over…

...objects accelerate because of the forces acting on them.

Your Focus Questions

"Remember that it is not where you come from, or not even where you are; it is where you are going that matters most."

Bo Bennett

"If you don't know where you are going, any road will get you there."

Lewis Carroll

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B	D	A	**Learning Intentions —** Knowing
			I can define and relate the terms: ***clock reading***, ***position*** and ***event***.
			I can differentiate between a ***clock reading*** and a ***time interval***.
			I can define and relate ***distance*** and ***average speed***.
			I can define and relate ***displacement*** and ***average velocity***.
			I can differentiate between ***scalars*** and ***vectors***.
			I can define ***instantaneous velocity*** and ***instantaneous speed***.
			I can define ***average acceleration***.

B	D	A	**Learning Intentions —** Doing
			I can solve problems involving: displacement, time interval, and average velocity.
			I can construct position-time graphs based on data from various sources.
			I can use position-time graphs to determine: • displacement & average velocity • distance travelled & average speed • instantaneous velocity
			I can construct velocity-time graphs based on data from various sources.
			I can use velocity-time graphs to determine: • instantaneous velocity • displacement • average velocity • acceleration
			I can mathematically describe the motion of objects (with constant acceleration).
			I can describe the motion of projectiles.
			I can mathematically describe the motion of projectiles (assume no air resistance).