# Motion

11/10/15

# Course Overview

Where have we been?

Where are we going?

- Elementary Standards

# Motion

- Motion is more difficult!
- 2000 years ago, ancient Greek scientists were familiar with many of the ideas we study today.
- Some properties of Light, water waves, energy….

# Motion

- Aristotle (~350 BC) made the first real progress towards understanding motion.
  - Natural Motion vs. Violent Motion

- Galileo (~1600) helped us understand gravity.

- Newton (~1700) made sense out of Forces and their effect on motion.

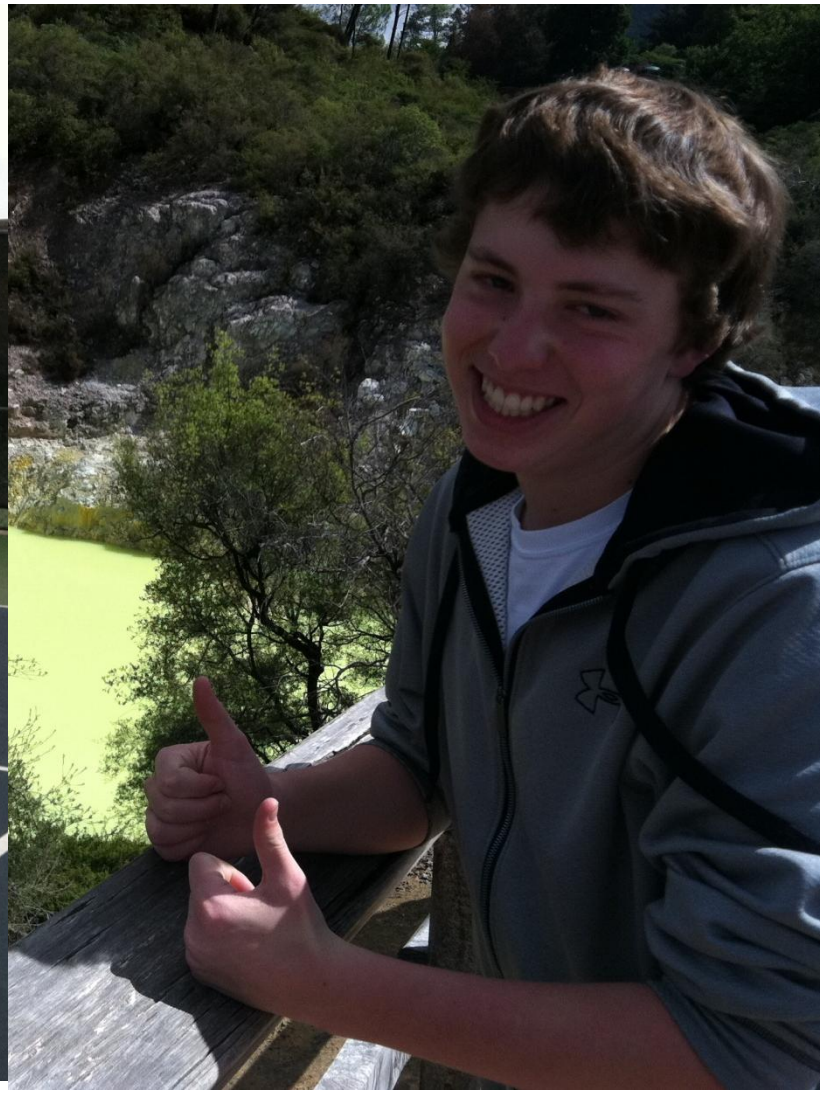
# Motion

- Distance
- Speed
- Average Speed
- Speeding up
- Slowing down
- Turning

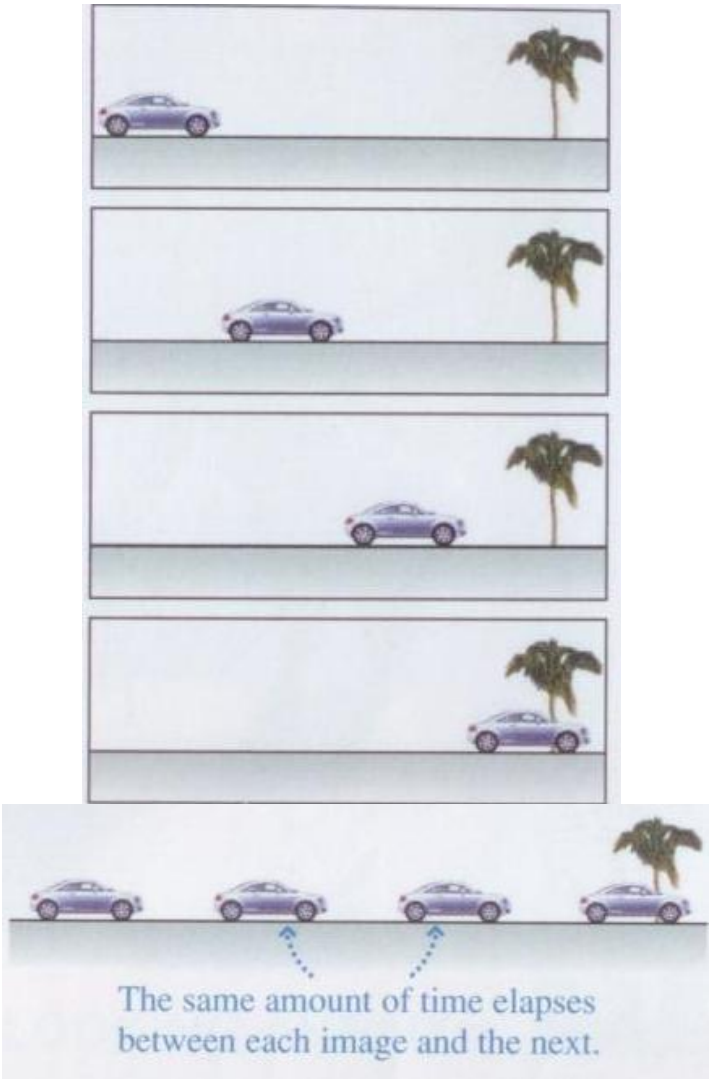
- Displacement
- Velocity
- Inertia
- Acceleration
- Force

# Motion Diagrams

# Motion Diagrams



# Motion Diagrams




Several frames from the video of a car

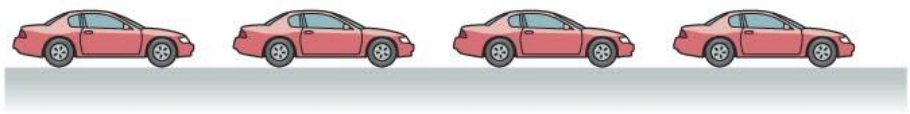
Put them on top of each other

**Motion Diagram**

Which car is going faster?

Assume equal intervals of time between frames of both videos

A. Car A
B. Car B



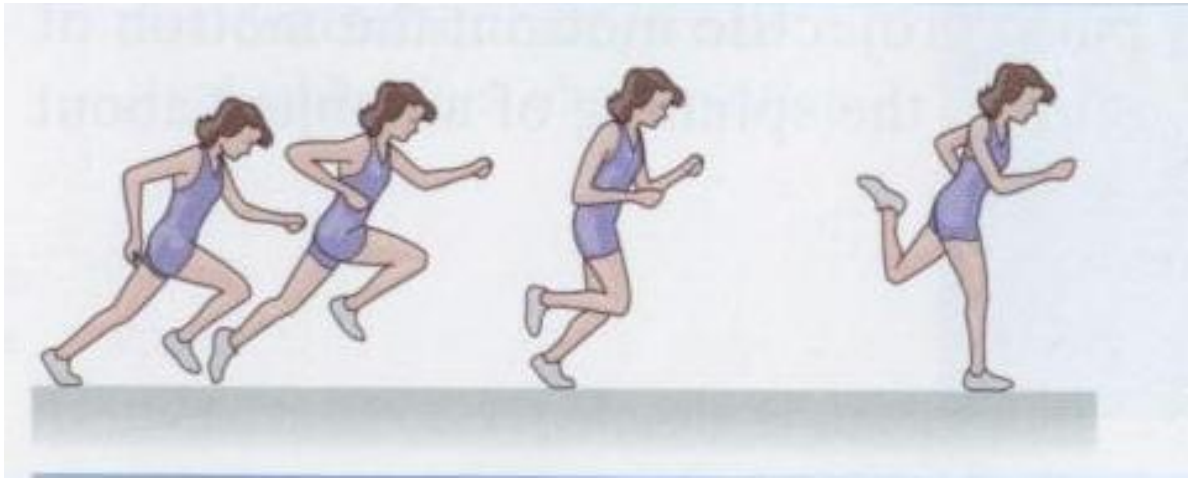
Car A

Car B

# Motion Diagrams

This runner is

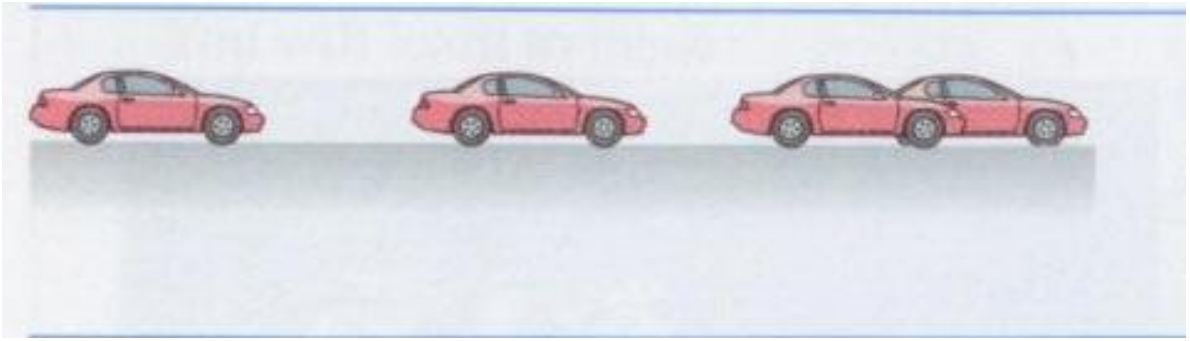
A. Standing still
B. Running at a constant speed
C. Speeding up
D. Slowing down



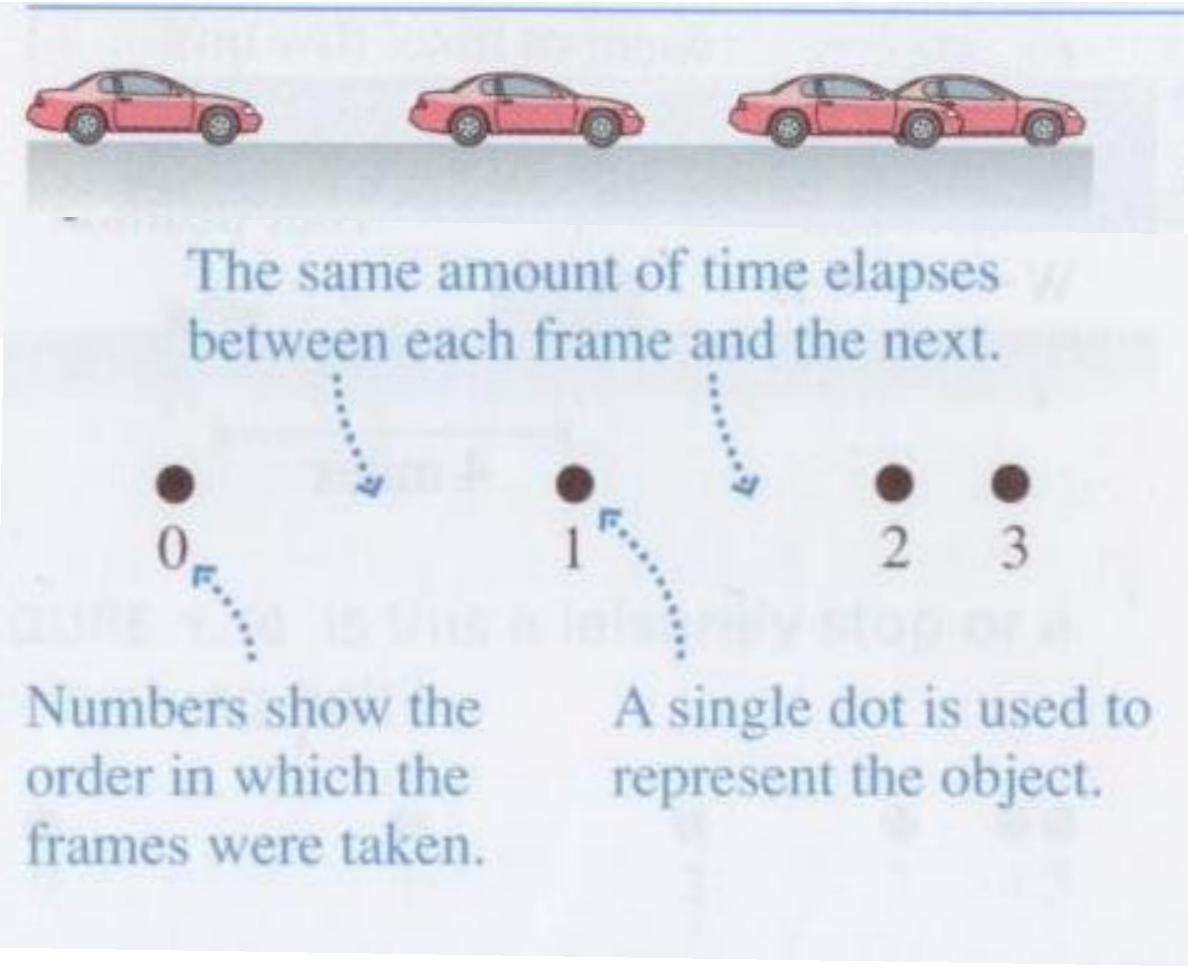
# Motion Diagrams

This car is

A. Sitting still
B. Driving at a constant speed
C. Speeding up
D. Slowing down



# Particle Model




Car slowing down

Same motion diagram using the *particle model*

# Sticky Note Movie

Draw an object – particle model is fine.

1. Moving at constant speed
2. Speeding up
3. Slowing down

Write your name on the front, label each motion and turn it in when complete.