



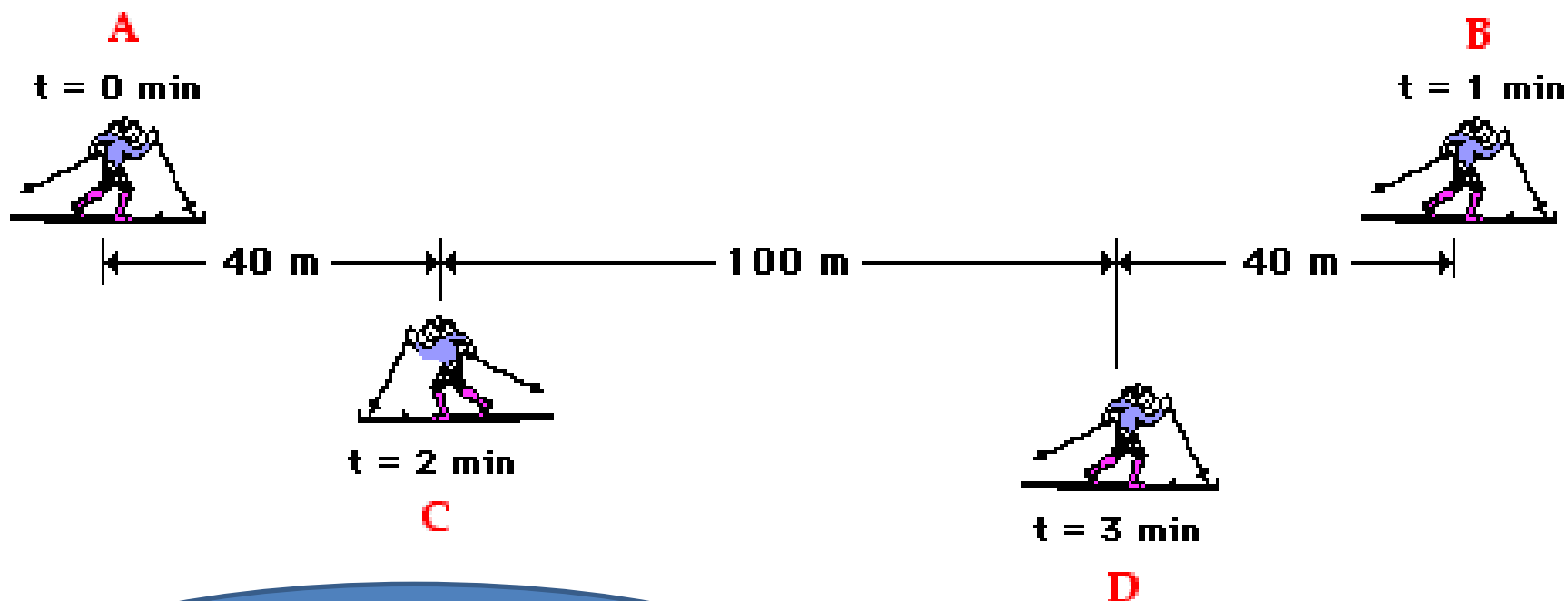
Unit-1

STATICS OF PARTICLES

Topic-1

Introduction – Units and Dimensions –
Laws of Mechanics

Use the diagram to determine the resulting displacement and the distance traveled by the skier during these three minutes. Then click the button to see the answer.



The skier covers a distance of $(180 \text{ m} + 140 \text{ m} + 100 \text{ m}) = 420 \text{ m}$ and has a displacement of **140 m, rightward.**

Which car or cars (red, green, and/or blue) are undergoing an acceleration?
Study each car individually in order to determine the answer.



If you inspect each car individually, you will more likely notice that only the green and the blue cars accelerate. The red car moves with a constant speed, covering the same distance in each second of the animation.

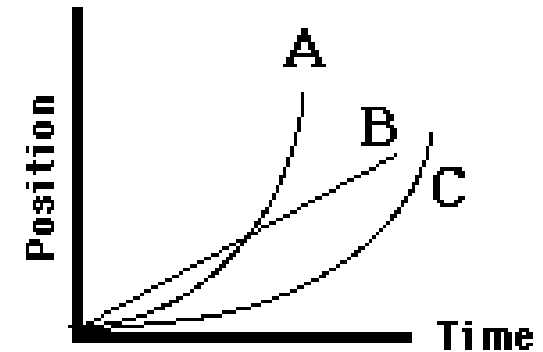
The green and the blue cars are speeding up, thus covering an increasing distance in each second of the

Which car (red, green, or blue) experiences the greatest acceleration?



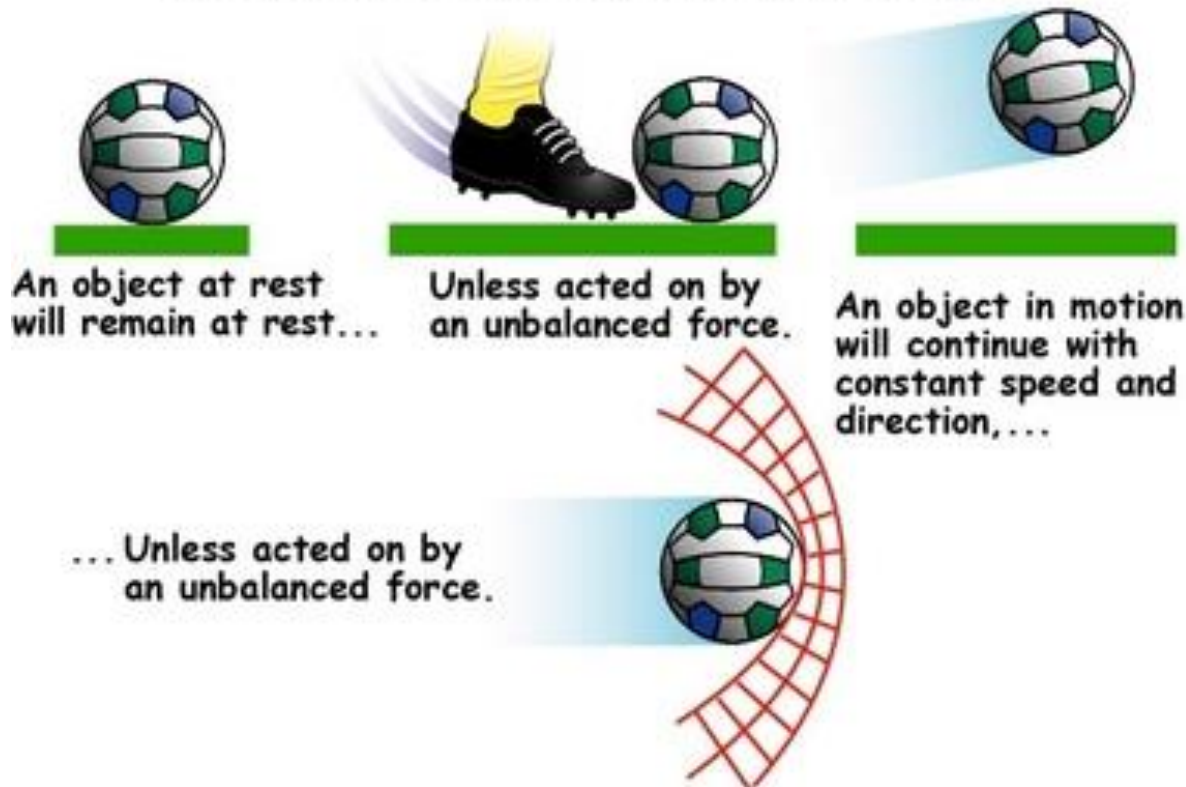
The blue car has a greater acceleration. It is changing its velocity at a more drastic rate.

Consider the position-time graph at the right. Each one of the three lines on the position-time graph corresponds to the motion of one of the three cars. Match the appropriate line to the particular color of car.

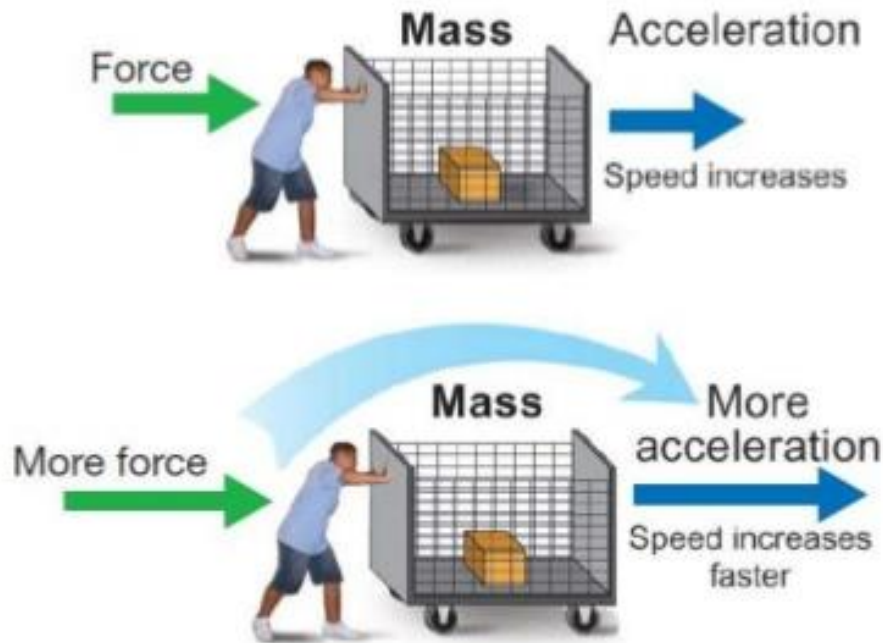


- **Newton's first law of motion:**

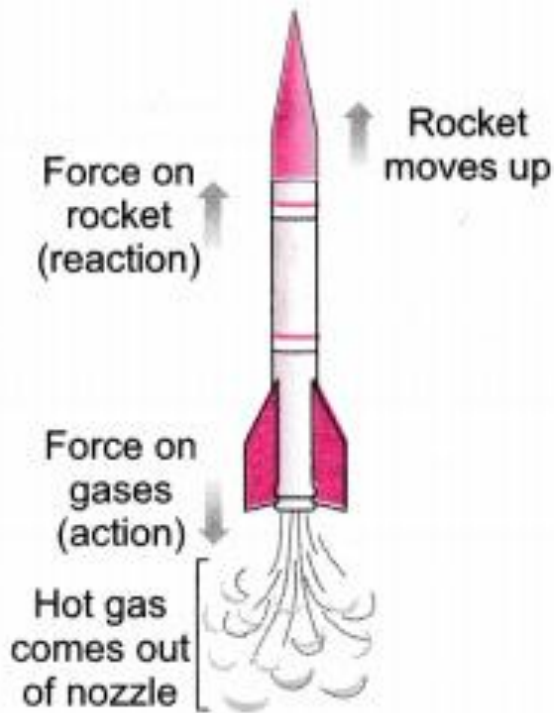
Newton's First Law of Motion



- Newton's second law of motion:

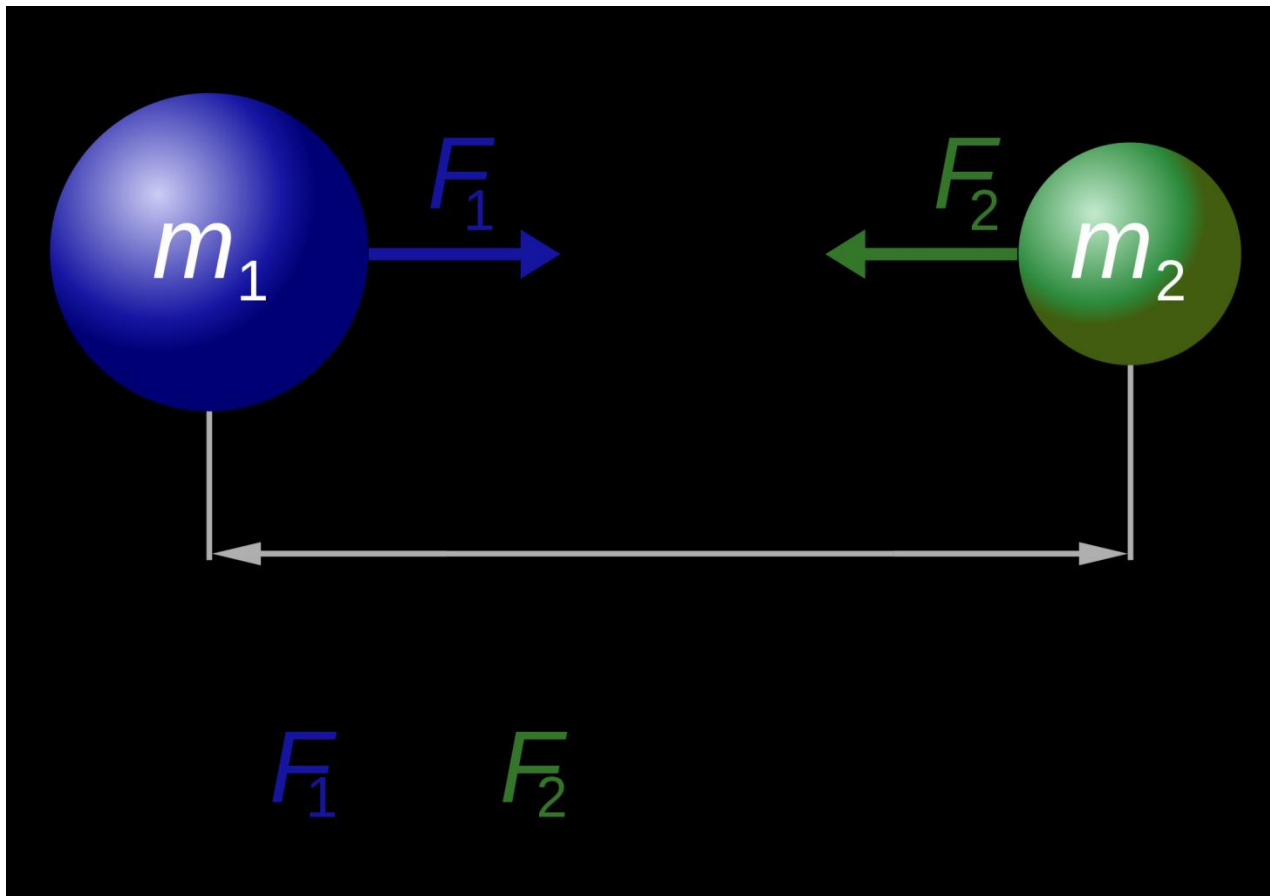


- Newton's third law of motion:

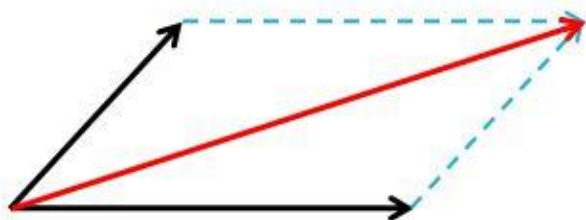




Gravitation law of attraction

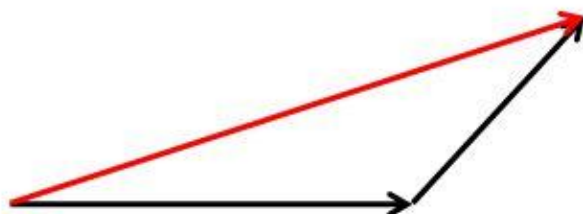


The Parallelogram Law



- ▶ When two vectors are joined tail to tail
- ▶ Complete the parallelogram
- ▶ The resultant is found by drawing the diagonal

The Triangle Law



- ▶ When two vectors are joined head to tail
- ▶ Draw the resultant vector by completing the triangle

Guess the Dialogues....!!!!



“Thallu Thallu Thallu Thallu Thallu **Thallu**” is a word
“Enna Kaiyya Puduichu **Iluthiya**” Is an Emotion



Am going to speak about....



Here is the CLUE..!!!!!!



FORCE

DEFINITIONS:

- ✓ Force is a **push or pull**.
- ✓ Force is **the capacity to do work or cause Physical Change**.
- ✓ **Physical power or strength possessed** by a living being.



CHARACTERISTICS OF A FORCE

How Much.....?? – **Magnitude**

Where....????? – **Point of Application**

Path.....!!!! – **Direction (or) Line of Action**

SYSTEM OF FORCES

