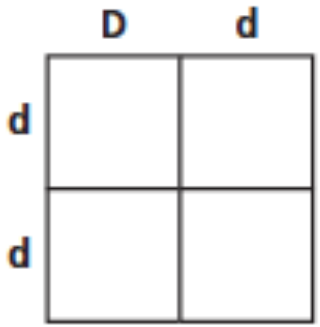
August 21, 2014

9 The characteristic for having dimples (D) is dominant to the characteristic for not having dimples (d). A Punnett square showing a cross between a dimpled person and a non-dimpled person is shown below.



What percentage of the offspring from this cross will most likely have dimples?

A 25%

B 50%

C 75%

D 100%

You must explain why your answer is correct.

Please write the page number in your book that supports your explanation.

Use the index of your book to help you.

Chapter 13
(Lesson 3)Day 9

CHAPTER 13 LESSON 3

I can identify how Newton's laws of motion relate to the movement of objects.

GLE: 0707.11.4 Investigate now Newton's laws of motion explain an object's movement

What You Will Learn

- How balanced forces affect motion
- What Newton's first law says
- How it looks in real life

What Mastery Looks Like

23 **Which is the best example of Newton's first law of motion?**

A A basketball thrown in the air falls to the ground.

B A soccer ball remains motionless until it is kicked by a player.

C A baseball player swings at an approaching ball.

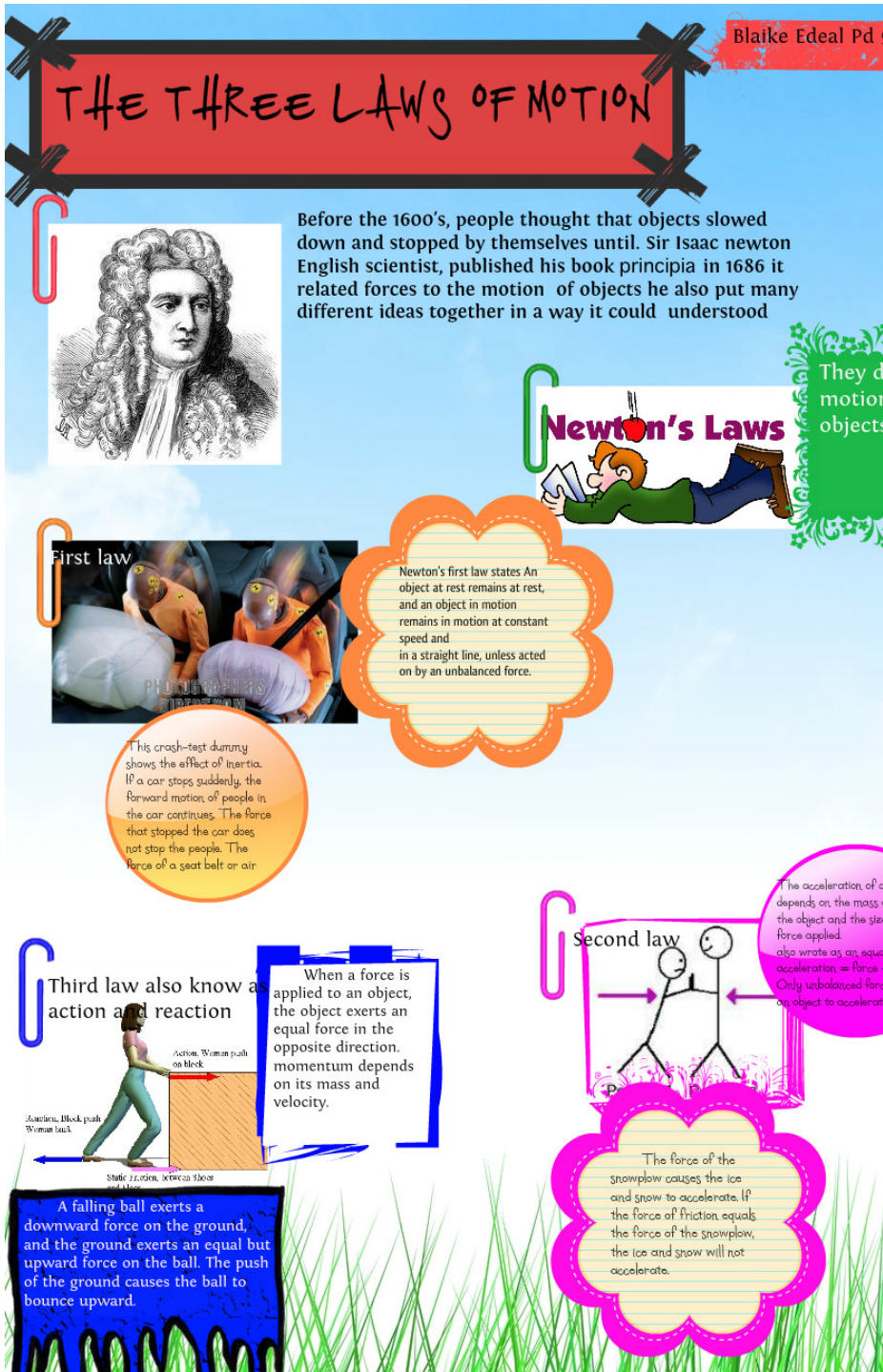
D An ice skater pushes off from a wall and moves backwards.

Why it's Important

- Newton's three laws explain how forces cause motion to change.

I. Newton's Laws of Motion

- Changes in motion are caused by the forces that act on them.
  - ex. Galaxies in the universe, planets in the solar system, and cars on a busy street
- Laws were first presented by Sir Isaac Newton – 1687.
- These rules apply to all objects

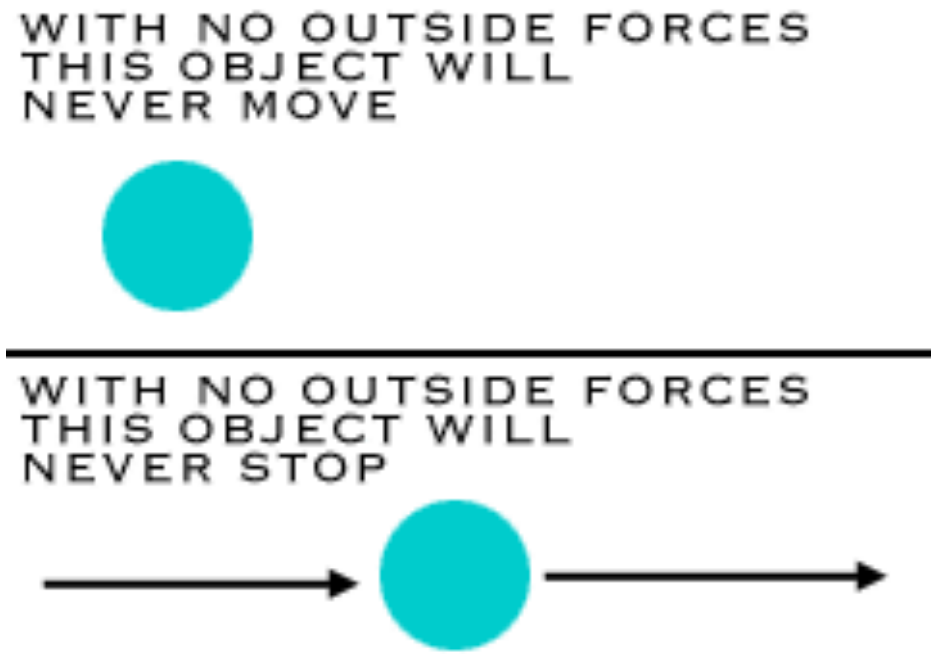


II. The First Law of Motion

- How does an object move if the forces acting on it are balanced?

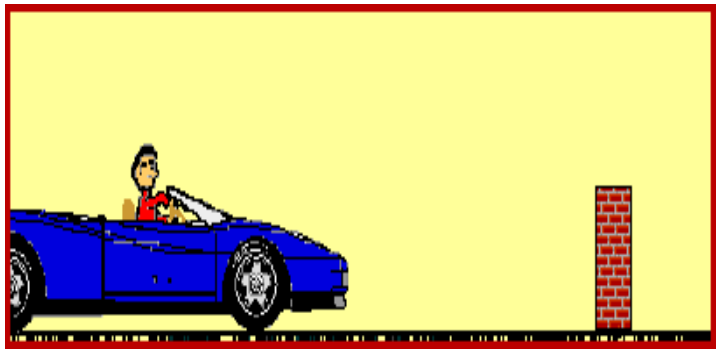
- If the forces acting on an object are balanced, then an object at rest remains at rest and an object in motion keeps moving in a straight line with constant speed.

- When the forces on an object are balanced, the motion of the object doesn't change



https://www.youtube.com/watch?v=Q0Wz5P0JdeU

II. First Law of Motion cont.



- Why does the net force acting on the basketball in Figure 14 cause it to move in a curved path? see 410

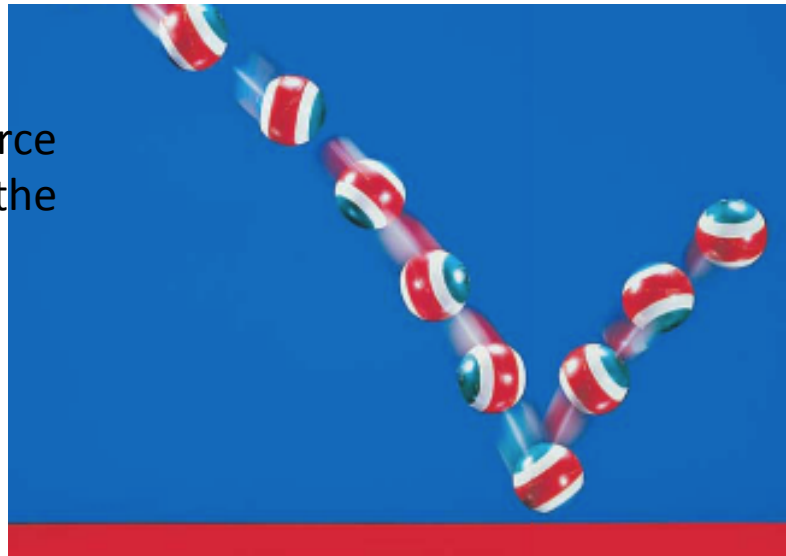
- According to the first law, the **net force** acting on the object must <u>not</u> be zero for an object to change speed or direction.

- https://www.youtube.com/watch?v=t8WEcA_VqHQ

A. Changing Direction

1. A moving obj. changes direction when the net force acting on the obj. is not in the same direction as the object's motion.

2. Then, the direction of motion curves toward the direction of the unbalanced force.
see 410 Figure 14

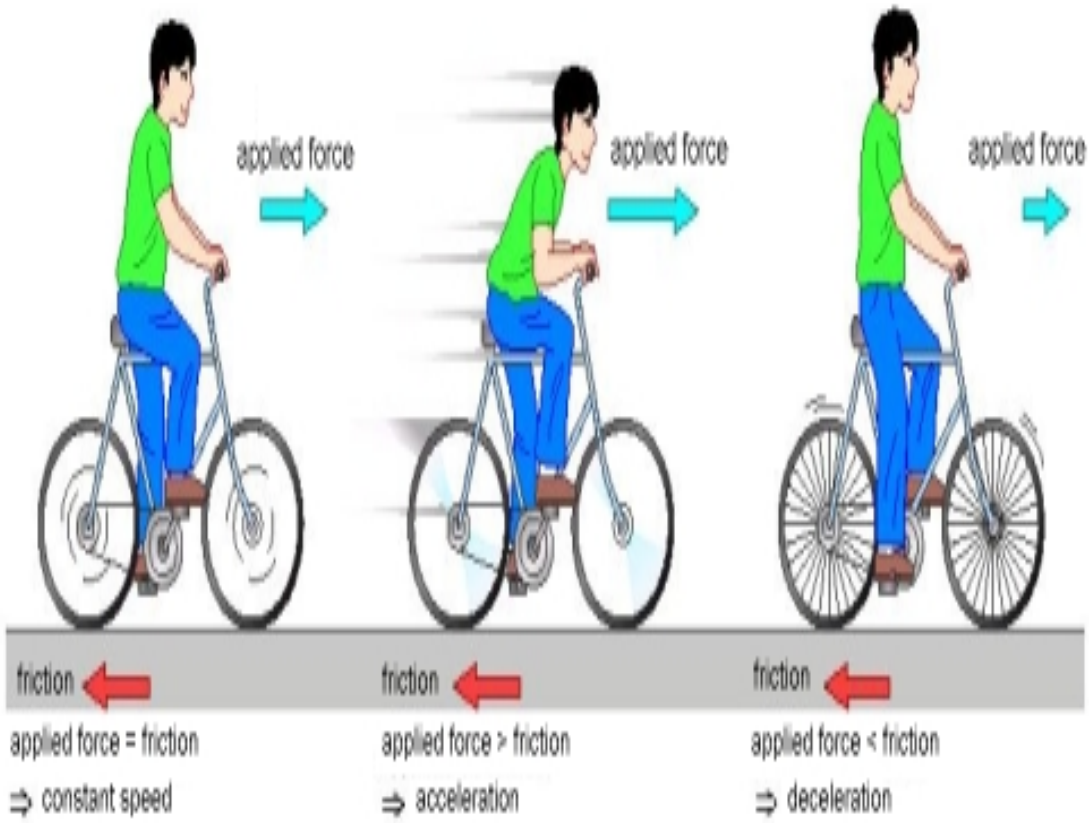


II. First Law of Motion cont.

B. Changing Speed

- If the net force is in the same directions in which the object is moving
  - It speeds up and continue to move in a straight line.

- If the net force acts in the direction opposite to an object's motion
  - the object slows down and moves in a straight line.



Exit Ticket

- If I want to keep an object moving, do I need to keep applying a force?

A. Objects eventually stop because a force – such as friction or gravity- acts against the object's motion. Once an object is in motion, the energy that was used to initiate the motion is irrelevant. In the absence of forces acting against that motion, a moving object would, in fact, continue to move forever! This is true of a bouncing ball, a speeding care, a galloping horse and a shooting star.