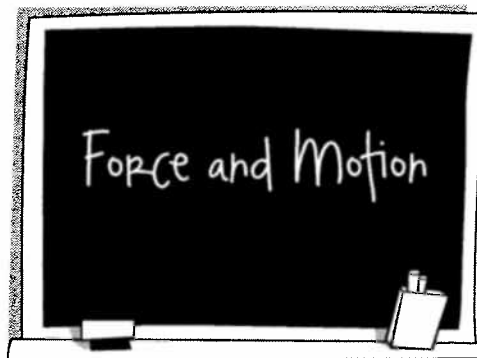


Force and Motion Ideas

Mrs. Li's students share their ideas about force and motion. Here are some of the ideas they come up with. Put an X next to each of the ideas you agree with.



- A** If there is motion, then a force is acting.
- B** If there is no motion, then there is no force acting.
- C** There cannot be a force without motion.
- D** Objects can continue moving in a straight line without applying force.
- E** When an object is moving, there is always a force in the direction of its motion.
- F** Moving objects stop when their force is used up.
- G** Forces act on objects at rest.
- H** The stronger the force, the faster an object moves.
- I** Constant speed results from constant force.
- J** A force is necessary in order to change the direction of motion.
- K** Forces make things go, losing energy makes them stop.
- L** Force can be transferred from one object to another during motion.

Explain your thinking. Summarize your own ideas about force and motion.

Video: Understanding Car Crashes: It's All Physics

1.a. What happened to the truck?

b. What happened to the dummy?

Why (one word)?

2. How does Newton's 1st Law work against you in a crash?

3. Why does the front end of a car crumple?

4. What did Newton define as "quantity of motion"?

5. What 2 variables cause changes in this quantity?

6. What is the equation for Impulse?

7. Do you want time to be small or large? WHY?

8. How many g's may an astronaut experience?

9. How many g's were involved in the crash of the white car?

10. In a crash, besides speed, what other property of the vehicle makes a difference?

11. How do crumple zones help?

12. What is the other name for the occupant compartment?

13. What parts of a car should deform?

14. What part should not?