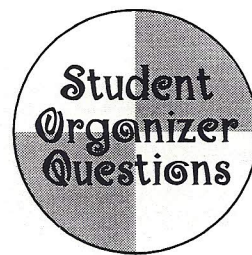


# "Understanding Car Crashes It's Basics Physics" Video Concept Organizer



TIME
5:20
5:35
6:05
6:18
6:45
7:10
8:20
9:04
9:42
12:55
13:50
14:30

### Surfers, Cheetahs, and Elephants ...oh my!

Momentum is \_\_\_\_\_ in motion. It is the product of an object's \_\_\_\_\_ and its \_\_\_\_\_.

Which has more momentum? An 80,000 pound big rig traveling 2 mph or a 4,000 pound SUV traveling 40 mph? circle one Big Rig SUV same

### Soccer Kicks, Slap Shots, and Egg Toss

What is it that changes an object's momentum? \_\_\_\_\_. It is the product of \_\_\_\_\_ and the \_\_\_\_\_ for which it acts.

If the eggs are of equal mass and are thrown at the same velocity they will have the same \_\_\_\_\_. The wall and the sheet both apply equal \_\_\_\_\_.

The wall applies a \_\_\_\_\_ force over a \_\_\_\_\_ time, while the sheet applies a \_\_\_\_\_ force over a \_\_\_\_\_ time.

With panic braking the driver stops in less time or distance and experiences more \_\_\_\_\_.

### Crashing and Smashing

The second animated vehicle's front end is less stiff so it crushes two feet instead of one, causing the deceleration to \_\_\_\_\_.

Extending the time of impact is the basis for many of the ideas about keeping people safe in crashes. List three applications in vehicle or highway safety.

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

### Conserving Momentum and Energy-it's the Law!

In a collision of two cars of unequal mass, the occupants of the lighter car would experience much higher \_\_\_\_\_, hence much higher \_\_\_\_\_ than the occupants of the heavier car.

Motion related energy is called \_\_\_\_\_. Energy due to an object's position or conditions is called \_\_\_\_\_.

At what point in the pendulum's swing is its potential energy equal to its kinetic energy? \_\_\_\_\_ When is its kinetic energy at its maximum? \_\_\_\_\_

Circle the correct formula for kinetic energy (KE).

KE = 1/2 m2v

KE = 1/2 2mv<sup>2</sup>

KE = 1/2 mv<sup>2</sup>

KE = 1/2 mv2