

Which would be more damaging: Driving into a massive concrete wall, or driving into a head-on collision with an identical car traveling toward you at the same speed? Explain your answer.

If someone weighing 500 N stands evenly on two bathroom scales, what would the reading be on each scale? If that person decides to shift their weight so one scale reads 300 N, what does the other read? Explain your answer.

Consider an apple at rest on a table. If we call the gravitational force exerted on the apple ACTION, what is the reaction force according to Newton's 3rd Law? Explain your answer. Can you think of any other examples similar this one demonstrating the 3rd Law?

A diver is planning a dive from a cliff into the river. He knows that dives are safe only from certain heights. He does not know the height of this cliff, but he knows his physics. He drops a large rock from the top of the cliff into the water below. It takes 12 seconds for the rock to hit the water. How tall is the cliff in meters?

Have you ever gone outside in the fall and noticed the leaves falling from a tree? Ever wonder why some fall faster than others? What about the twigs in the tree that break when a gust of wind picks up? Why don't the leaves accelerate like the twigs? In your own words, try to explain this common experience in your journal.

If an alien from another planet came and visited Earth, how would you explain to him how to find the weight of an object from his spaceship? What method could be used as a universal procedure? Explain your answer.

Transparency #4

Suppose you have a large crate you wish to lift off the floor. Using only simple machines, devise a plan to accomplish this task without ever touching the crate. You must use at least three machines. Be sure to draw a plan of action in your description.

Transparency #5

If an automobile had a 100 percent efficient engine, would it be too hot to touch? Would you be able to feel the engine exhaust if you were close by the car? Would the engine make any noise when cranked? Would you feel any bumps, vibrations or other kinks in the car? What about fuel efficiency? Explain your answer.

Michael Jordan wants to promote the best shoe on the market for Nike by having the shoe prevent too much sliding on the court. You are on the design team to create this “dream shoe.” What features would you add to the shoe to satisfy Michael Jordan? Be specific.