Forces friction

Science, Physics

Forces Have you ever wondered how forces link to our life? Everything we’ve learned in science has got me thinking about it. Forces are an essential part of our daily lives. Forces act on all objects. And we need force for everything we do, whether it’s a push, pull or twist. Force gives an object the energy to move, stop moving or change direction. Newton’s first law states that an objects velocity cannot change unless it is acted upon by a force. Here are examples of force in everyday life. A mother pushing a baby stroller would be an example of a push. This diagram shows two teams of players while they are pulling the rope in a game of tug-of-war. Here is one we learned in class: The up thrust of the water and the weight of the boat , help the it float. Though there are many different types of forces but I have chosen to talk to you about friction. Friction is the force between two objects in contact with each other, making it a contact force. It causes moving objects to slow down. Air resistance is a type of friction. Friction is an important force in our lives. We rely on friction in many ways. An athlete usually wears shoes which provide him/her with a greater friction between the shoe and the surface. We rely on friction as an important aspect of motion. Friction can be a very useful force because it prevents our shoes slipping on the pavement when we walk and stops car tires skidding on the road. Ice causes very little friction, which is why it is easy to slip over on an icy day. But this is a good thing for ice skating and sledding. There are two main types of friction: static friction and kinetic friction. Static friction is a force which resists the movement of two objects which are touching each other. A simple example of static friction might be a wooden block sitting on a ramp. Unless sufficient force is exerted, the block will not slide down the ramp, because static friction holds it place and resists sliding. When objects have a high coefficient of friction, it means that a lot of force will be required to break through the force of static friction and create movement, while a low coefficient means that less force will need to be exerted. Imagine you are pushing a box along the floor. When the box is at rest, it takes some effort to get it to start moving again. That’s because the force of static friction is resisting your push and holding the box in place. In the diagram to the side, the weight and the normal force are represented as W and N and the force applied to the box is represented by F (push). The force of static friction is represented by F (static) also, where F(static)= F(push). The net force on the box is zero, and so the box does not move. This is what happens when you are pushing on the box, but not hard enough to make it move. Static friction is only at work when the net force on an object is zero, and hence when F(static)= F(push). If there is a net force on the object, then that object will be in motion, and kinetic rather than static friction will oppose its motion. Kinetic friction is the force between two objects that are moving relative to each other. Friction between solid objects that are is often referred to as dry friction or sliding friction and between a solid and a gas or liquid as fluid friction. Both of these types of friction are called kinetic friction. Once you exert a strong enough force, the box will begin to move. However, you still have to keep pushing with a strong, steady force to keep it moving, and the box with immediately slide to a stop if you stop pushing. That’s because the force of kinetic friction is pushing in the opposite direction of the motion of the box, trying to bring it to a stop. Though the force of kinetic friction will always act in the opposite direction of the force of the push, it doesn’t need to be equal in magnitude to the force of the push. In the diagram above, the magnitude of F (kinetic) is less than the magnitude of F (push). That means that the box has a net force in the direction of the push, and the box accelerates forward. The box is moving at velocity V in the diagram, and will speed up if the same force is steadily applied to it. If F (push) were equal to F(kinetic), the net force acting on the box would be zero, and the box would not move. CONCLUSION Clearly, forces are a huge part of our life styles. Without it who knows where we would’ve been. Forces may be invisible, but they truly are visible to me. For they are a big part of the survival sources we have in the cycle we call life.