

Contact forces

James Stewart: Contact forces are forces that can only act when objects are touching each other, and there are several common contact forces.

Friction is a force between surfaces.

The base of the plant pot is in contact with the table.

So, as I push the plant along the table, friction acts on the pot in the opposite direction to the motion of the pot.

It's why a curling stone eventually stops sliding on the ice.

Normal contact force is what a surface exerts on an object that it is touching.

This force is always at right angles to the surface.

For example, the normal contact force of a sloped shelf pushing up on a book.

Now, if I pull the plant with a rope, tension is the force along the length of the rope.

Like so.

It's also the force in the string pulling up on a teabag.

And if I wave the plant around wildly, you can see that there's air resistance acting on the leaves.

Now air resistance is caused by air particles hitting an object, such as this moving car.

The air resistance increases as the car's speed increases.

And since cars travel quite fast, engineers try to reduce air resistance by aerodynamic designs.

Whereas skydivers like this, well, they make good use of air resistance.

Remember, to experience a contact force, the objects must be touching.
That includes friction, normal contact force, tension, and air resistance.