

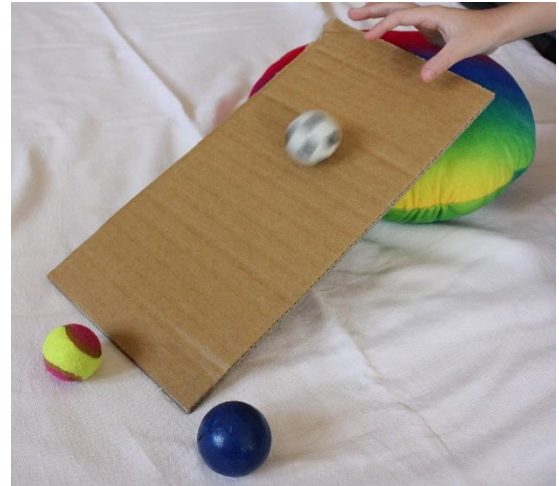
Rolling Ramp

Materials

- Rigid cardboard, pieces of wood or plastic lids to make ramps
- Cushions to support ramps
- Balls and toy cars

Instructions

1. Prop the ramps up on a cushions and test how objects roll down each ramp. Allow children to explore the ramps to test different ramp lengths and slopes, and experiment with how to make objects roll faster or slower down the ramps.
2. Place a flat object, such as a rectangular block at the top of the ramp. Does this object roll down? Does it slide?



What happens?

As a ball rolls down a ramp, a number of different forces act on the ball. Gravity is pulling the ball straight down, but the ramp is pushing up on the ball, causing it to move forwards as well as downwards. As the ball rolls down the ramp, friction and air resistance act to slow down its movement.

When a flat object, such as a block, is placed at the top of a ramp, the flat object might slide down the ramp or it might not move at all. The force of friction acts between any two objects that are sliding against each other and, if the force of friction is strong enough, it can prevent an object from sliding.

The round shape of a ball or a wheel is very useful as it allows these objects to roll across a surface with very little friction.