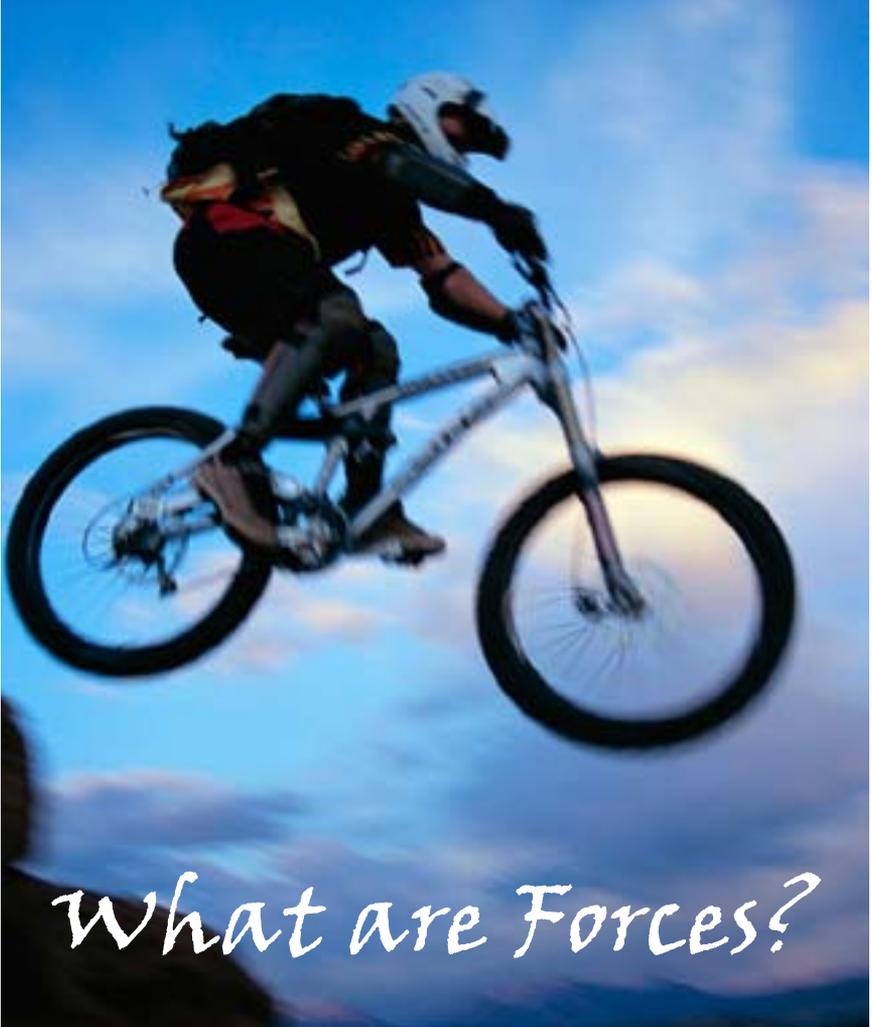


Take Home Booklet

Forces in Motion



What are Forces?



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Dear Family,

Your child is learning about forces in motion. We are learning how to describe motion and to measure and record the position and direction of an object's motion. We are looking at a simple machine, the bicycle, to learn about the kinds of forces that cause motion, such as gravity and friction.

Your child is also learning many new vocabulary words that describe forces. Help your child to make these words a part of his or her own vocabulary by using them when you talk together about the forces you see and use every day.

WORD

DEFINITION

measure	to find the size, amount, capacity, or degree of something
record	to make a written note, to put in writing
direction	the line or course something follows or points to
force	a push or pull that acts on an object
friction	a force between two surfaces rubbing against each other
motion	change in an object's position; movement
gravity	the force that pulls objects toward each other
pendulum	a weight hung, as in a clock, so that it can swing in a back and forth motion

The following pages include activities that you and your child can do together. By participating in your child's education, you will help to bring the learning home.

Family Science Activity

Balancing Ball

Try this experiment at home with a family member. It shows the force of air pressure.

Materials:

- ◆ a hair dryer (blower)
- ◆ a ping pong ball



Steps:

- Hold the hair dryer so it blows a stream of air straight up.
- Carefully balance the ball above the airstream.
- Now, pull the ball slowly out of the flow. Notice that when only half the ball is out of the airstream, you can feel it being sucked back in.
- Let go of the ball and notice that it hovers back and forth and then settles down near the center of the airstream.

Talk About It

When the ball is suspended, the air flowing upward hits the bottom of the ball and slows down, generating a region of higher pressure. The high-pressure region of air under the ball holds the ball up against the *pull* of *gravity*.

When you pull the ball partially out of the airstream, the air flows around the curve of the ball and then continues outward above the ball. This outward-flowing air exerts an inward *force* on the ball, just like the downward flow of air beneath a **helicopter** exerts an upward *force* on the blades of the helicopter. This *force* is what makes the ball feel like it is getting sucked back in.