Marbles & Cup

Place a marble onto the table and put a cup over it. Move the cup in a circular motion to make the marble spin around on the inside of the cup. Observe the motion of the marble. Now, with the marble moving, lift the cup off the table and observe the motion of the marble.

Balloons & Pennies

Take a penny and place it inside the neck of the balloon until it is completely inside the balloon. Blow up the balloon and tie it off, penny inside the inflated balloon. Move the balloon to make the penny spin around inside of the balloon. Observe the path of the penny. What path would the penny take if you were to pop the balloon as the penny spins around inside?

Coins, Cup & Index Card

Place the cup face down on the table. Place the index card on top of the cup. Place a penny on top of the index card. Flick the index card quickly with your finger. Observe what happens with the penny. Now turn the cup face side up and do the same thing. Observe what happens to the penny.

Newton’s Scales

Zero the two Newton Scales. Hook the two ends together. Hold one scale in one hand and the other scale in the other hand. Pull lightly with both hands. Observe the force recorded on each of the scales.

Ruler & Marbles

Place several marbles into the slot in the center of the ruler so they are touching one another. Take another marble and slide it down the slot so it rolls into the marbles resting on the ruler. What will happen when that rolling marble strikes those stationary in the slot? Try it with two marbles rolling down the groove and striking the stationary marbles. What would happen if you used marbles of obviously different masses? What would happen if you rolled one marble from each side simultaneously into the group of stationary marbles?

Pull- Back Truck (Red)

Place the pull-back car on the floor. Pull it back, then release. Observe. What would happen if you pulled the truck back just a little and then released it?

Barbie & Her Car

Set the Barbie onto the toy car. Roll the car quickly across the floor and crash it into the wall. OW!! What happened to Barbie? Now place Barbie back onto the car and secure her with her seat belt—a rubber band. Roll her across the floor again and crash her into the wall. Observe what happened to Barbie this time.

Dropping Balls

Take a ball into each hand. Hold them at the same height above the floor and release them simultaneously. The BOTTOM of each ball should be at the same level before you drop them. Which one will reach the floor first? Observe. You might need to try a few times before you are able to drop them at precisely the same time from the same height.

Balloons

Blow up a balloon. Do not tie it off. Let it go. What happened when you released the balloon? Observe and explain.

Balancing Bird

Pick up the bird and rest it in your hand. Put the bird’s beak onto your fingertip and let go. If it flies away, get another bird. If it pecks your fingertip, let it go. Otherwise, observe what happens with the bird on your fingertip.

Balance Balls

Let the balls hang loosely. Pull back one ball. What will happen when you release this one ball and allow it to fall back to where it was before? What will happen if you pull back TWO balls and release them simultaneously? What will happen if you pull back one ball from each side and release them both at the same time? What will happen if you pull back ONE ball from one side and TWO balls from the other side and release them at the same time? Observe and explain.

Air Pucks

Turn on the switch on the bottom of the air puck. Place it onto the floor and give it a gentle push. Observe what happens. Turn on the other air puck and place it on the floor. Gently push the first air puck into the second so that they collide. What happens? What would happen if you push them gently into one another? Observe and explain.

Ball

Place the ball onto the table. Look at it closely. Observe. Pay attention to its motion. Look again. Describe the ball’s motion on the table.

Pushing on Wall

Stand facing the wall, half a meter from the wall. Reach out your hands and push against the wall. DO NOT hit the wall. Simply push against the wall. Observe.

Blue Car

Turn on the car and place it onto the floor. Describe its motion. What will happen when it rolls into the wall? Observe and explain.

Newton’s Beads

At this station, you will carefully put the string of beads into the cup. Don’t just throw them in, willy-nilly. But instead place them into the cup, starting with one ends and feeding them into the cup until they are all in. Then hold the cup upright in the air at eye level with one hand and hold the end of the line of beads in the other hand. Drop the beads that are in your hand over the edge so that they will fall to the floor. Observe what happens to all of the beads.

Stomp Rockets

Place foam stomp rocket on the stand. Place your protective eye gear onto your face. Stomp on the launch mechanism, making certain that it points at the ceiling. What do you observe? Try again, this time stomping with a different amount of force.

Two Bathroom Scales

This station requires two students working in a COOPERATIVE manner. Each holds a bathroom scale in their hands and faces one another. Place the bottoms of the two scales together. Each student exerts a force towards the other person. There is no need to attempt to knock the other over. Each student reads the scale. What do you observe?