**Station 1**

1. Place the note card on the table so about 1/3 of the card extends over the edge of the table.

2. Place the washer on the card that is on the table.

3. Predict what will happen to the washer when the card is removed.

4. As quickly as you can, pull/push the card from under the washer.

5. Observe the motion of the washer.

1. Place the bottle containing the soap on the table.

2. Place the paper on top of this bottle.

3. Place the second water bottle mouth down on top of the card and first bottle.

4. Push the paper in so it bends, then pull as quickly as you can.

5. record your observation

**Station 2**

1. Place washer in the cup.

2. Hold the cup by the string.

3. Twirl the cup around in a circle.

4. Hold it lower on the string, repeat 1-3, any difference?

5. Hold it lower again, repeat 1-3, any difference?

**Station 3**

1. Predict which will be easier to balance; the meter stick or the ruler

2. Balance the ruler on one finger

3. Balance the meter stick on one finger

4. Which was easier?

5. Put the clay on the end of the meter stick. Try to balance it; do the same with the ruler

6. What affect did putting the clay at the end have on your ability to balance?

**Station 4**

1. There are two carts with different masses on the table.

2. Give the cart with the lower mass a gentle push and record how far it goes.

3. Give the other cart a push, just as hard, and record how far it goes.

**Station 5**

1. Set up the empty cart so that it is at the starting tape.

2. One partner runs the cart across the room while the other partner times.

3. Stop the stopwatch when the car reaches the finish line.

4. Repeat steps 1, 2, and 3 with the full cart

5. Record your two times.

**Station 6**

1. Place the first marble at the bottom mark on the track.

2. Place the second marble at the position 1 mark of tape

3. Release the top marble so that it rolls down the track and collides with the second marble.

4. Repeat steps 1-3 with the other 2 tape marks.

5. Hold both marbles at the same height at opposite ends of the track and release them at the same time.

What happens?

**Station 7**

1. At the same time, drop the wadded up piece of paper & the flat piece of paper **vertically** onto the lab table.

From the same height as measured from the bottom

Which hits first?

2. Try objects of different mass and see what happens

**Station 8**

1. Blow up the balloon completely.

2. Tape it to the straw on the string

3. Release the balloon.

4. Repeat steps 1-3, blowing up the balloon ½ way.

5. Return the balloon to your teacher.

**Station 9**

1. Stand with each of your feet on a separate sheet of paper.

2. Start to run.

3. Observe the paper

4. Sit on the rolly chair and push your partner standing there gently.

5. what happens to you both.

6. What happens when you push harder (but not too hard)?

**Station 10**

1. Pull both pendulums back about 25cm (10 inches).

2. Let the metal spheres fall into each other at the same time.

3. Watch what happens to each sphere following the collision.

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block \_\_\_\_\_\_ Binder Page # \_\_\_\_\_\_**

**Newton’s 3 Laws: A Stations Lab**

***Data Table***

|  |  |  |  |
| --- | --- | --- | --- |
| **Station #** | **Law #** | **What you did** | **Observations** |
| **1** |  |  |  |
| **2** |  |  |  |
| **3** |  |  |  |
| **4** |  |  |  |
| **5** |  |  |  |
| **6** |  |  |  |
| **7** |  |  |  |
| **8** |  |  |  |
| **9** |  |  |  |
| **10** |  |  |  |

***Post Lab Questions***

A. After you have completed all 14 stations, go back to your individual desk and read through your observations for each of the activities for Newton’s First Law of Motion. Find the one thing (**In Common**) that happens in each of the activities. Record in the table. Repeat for the Second Law activities and then the Third Law activities.

|  |  |
| --- | --- |
|  | **What observed in common** |
| **Newton’s**  **First Law of Motion** |  |
| **Newton’s**  **Second Law of Motion** |  |
| **Newton’s**  **Third Law of Motion** |  |

* 1. At station 6, what supplied the force necessary to make the nut drop into the beaker?
  2. At station 7, what supplied the force necessary to slow the penny down as it slid along the top of the table?
  3. Why is a meter stick easier to balance than a ruler?
  4. How many laws of motion did Sir Isaac Newton write?
  5. What are Newton’s three laws of motion?

1.

2.

3.