Force in Motion-Explore Outdoors Name: _____

Forces acting on an object can set that object into motion or stop it from moving. Different forces can affect motion in every sport.

Rolling Distance Experiment

1) Find a ball-like a soccer ball, tennis ball or basketball. **Type of Ball used: _____**

2) Go outside, find two different surfaces like grass, pavement, or dirt to safely roll the ball a long distance. In the box below, describe the two surfaces that you choose to use in this experiment.

What type of surface? Is the surface bumpy, uneven, uphill, downhill, smooth or rough?

Experiment Surface #1	**Experiment Surface #2:**

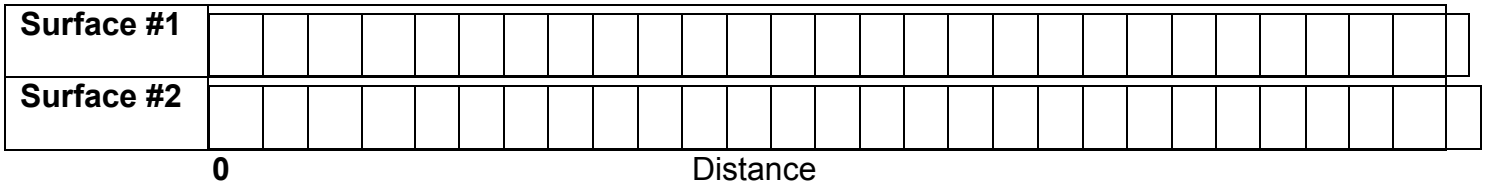
3) Roll the ball across each of the surfaces. Apply the same amount of force when rolling your ball.

4) Measure the distance that the ball traveled with a tape measure, or measure using your "steps".

Distance traveled surface #1_____ Distance traveled surface #2 _____

5) Make a bar graph to show your data of the experiment

Title: Rolling Experiment



Results: How does the rolling surface affect the distance a ball travels?

Use the space below to explain what you now understand about the forces affecting the distance of the ball on each surface. How are forces affecting the ball's motion? Did you observe any changes in the ball's speed or direction during the experiment? How were the forces of gravity and friction different between your two surfaces?

Keep on experimenting...test a ball with a greater mass on the same surfaces and make new observations about the ball's motion. What are your results?