



# ***The Science of Sliding***

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## **Grade 5: JORMS (Wemindji)**

### **Our Experiment**

Our aim was to measure the distance and speed of each sled, to scientifically prove which the best was. We wanted to also prove that weight makes a difference in sliding. We already knew that sleds help you go faster and further down a hill, but we wanted to take it further and discover which sled is best because sleds have an important role in our culture. The sleds we tested included a plastic circle sled, 3ski, foam circle sled, inflatable tube, regular plastic sled, wooden toboggan, and crazy carpet. We ensured that each run was equal by keeping the same course with a start and stop line.

### **Scientific Variables and Our Hypothesis**

To make sure the test was reliable we had to ensure that the rules were being followed. Everyone had the same track with a start and finish line and the same run off distance of 3m. We used the same stopwatch when recording the times and the same meter stick when measuring the distance. We made sure everyone had their feet inside the sled and measured the distance for the very front of each sled to keep it equal. We also weighed everyone in the classroom before we went to the hill.

With that in mind, we hypothesized that the foam-based sleds will be the fastest. We thought that the plastic-based sleds would go the furthest. We thought that the heavier the person, the faster they would go. We also believed that the lighter the person, the further they would go.

## **Analysis of Results**

Results of overall best performance:

*1<sup>st</sup> Place – Plastic Circle Sled*

*2<sup>nd</sup> Place – Regular Plastic Sled*

*3<sup>rd</sup> Place – 3-Ski*

We believe that the plastic circle sled won for two reasons. The first reason being that it is made of smooth plastic. All of the top three sleds were made of plastic; therefore proves that smooth plastic has less friction than other materials on the snow. The second reason is that it does not have much surface area touching the snow, which then causes less friction than all of the other sleds. We were surprised to find no connection between a person's weight and their distance or speed.

## **Other Factors to Consider**

There were many things that we did not factor in when creating our plan. We learnt that we would need to consider a few other things if we were to do this experiment again. Here are a few.

- 1) People went off track: we would need to build a smaller track to force everyone to go down the exact same route without veering off.
- 2) Skidoo tracks: the skidoo tracks caused more friction than we expected, which really slowed us down.
- 3) The tube was slow: some people let the string get caught under the tube which made the results less reliable.
- 4) Crazy carpet was too unstable: every single person wiped-out on the crazy carpet. It was too fast, too flat, too open and generally not solid enough to hold the test subject to the finish line.
- 5) Not enough time: we tried to test too many types of sleds, with too many test subjects all in one go. By the time everyone had tried each sled we were very cold and tired. We should have chosen four to test.