



Longboards Going Down a Ramp

M1-2 PHYSICS

Question

- ▶ How do different surfaces effect the speed of a longboard going down a ramp?

Abstract

- ▶ My experiment is to see how different surfaces of a ramp effect the speed of a longboard rolling down it. So basically I roll a longboard down a ramp and for each different variable I switch the surface of the ramp. My Independent variables are the surfaces of the ramp which are cardboard, plastic tarp, roofing tile, carpet, and plywood. My dependent variable is how fast the longboard will go down each surface. For each surface I testing it 20 times to ensure reliable results. My hypothesis is “if the surfaces of a ramp are changed to a surface with more friction then the longboard will go slower, because the friction affects the speed negatively.” The results were the longboard had the fastest speed of the plywood.

Hypothesis

- ▶ “If the surfaces of a ramp are changed to a surface with more friction then the longboard will go slower, because the friction affects the speed negatively.”

Materials

- ▶ The materials needed for my experiment are 1 kryptonics longboard that is 91 centimeters long. 1 sheet of plywood that is 2 meters long and $\frac{1}{2}$ meter wide, 1 sheet of carpet that is 2 meters long and $\frac{1}{2}$ meter wide, 1 sheet of pebble tech tile that is 2 meters long and $\frac{1}{2}$ meter wide, 1 sheet of cardboard that is 2 meters long and $\frac{1}{2}$ meter wide, and 1 sheet of plastic tarp that is 2 meters long and $\frac{1}{2}$ meter wide. And a stopwatch that times in seconds. Also a structure that is 26.5 inches tall to rest the plywood on.

Procedure

- ▶ The step by step procedure for my experiment will is first set up any structure that is 27.5 inches tall and rest the sheet of plywood that is that is 2 meters long and $\frac{1}{2}$ meter wide on top of the structure so that the end of the plywood is touching the top of the structure. Then take the longboard a put it on top of the plywood and long go and test the time in seconds. Repeat 20 times and record data. Place sheet of carpet on top of plywood and test the longboard times. Repeat 20 times and record data. Then replace the carpet with pebble tech tile and test longboard times. Repeat 20 times and record data. Replace the pebble tech tile with cardboard and test longboard times. Repeat 20 times and record data. Replace the cardboard with plastic tarp and test longboard times. Repeat 20 times and record data. Put all of data into a chart and analyze.

Experimental Pictures

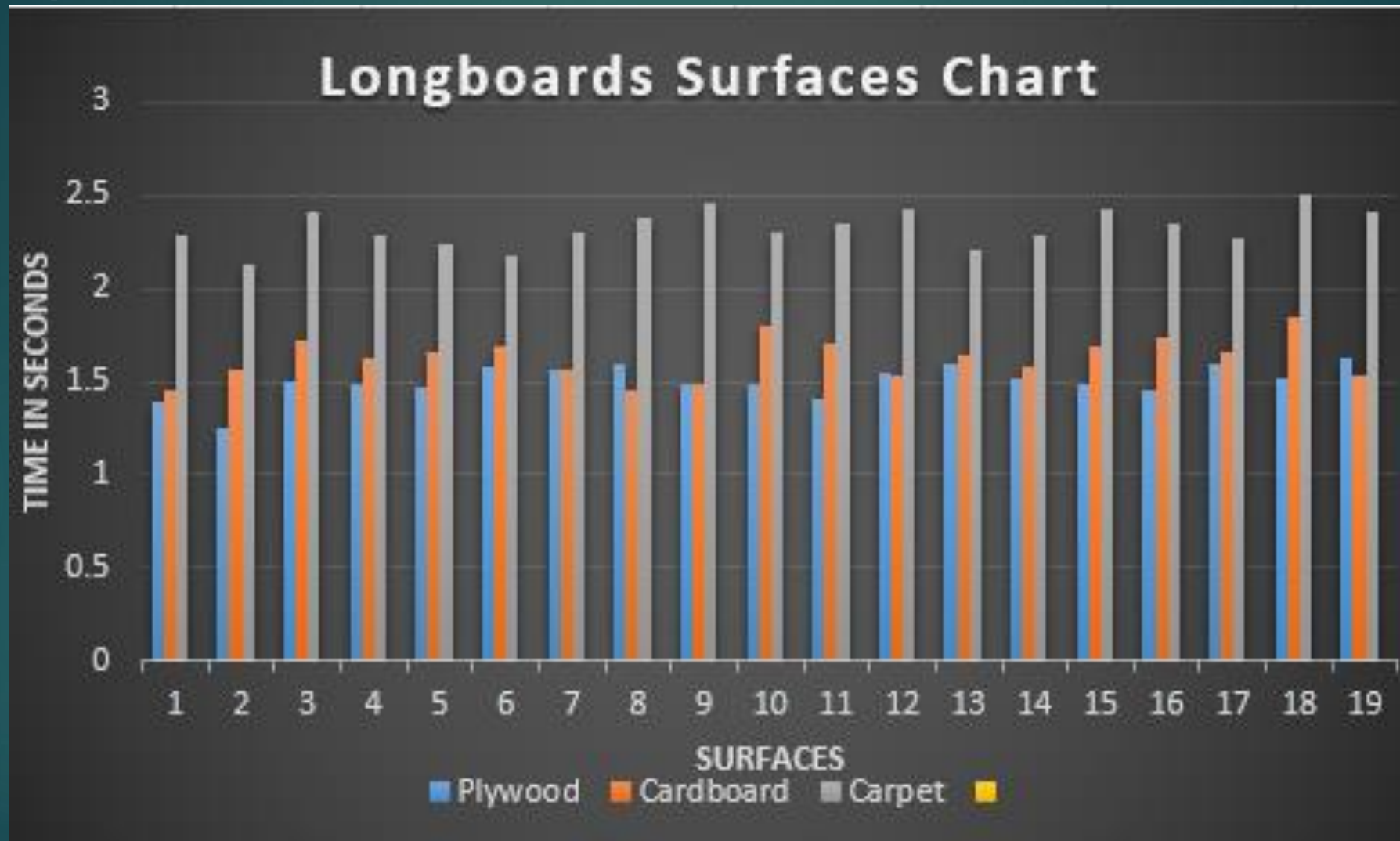


Results



Plywood	1.49
Carpet	2.33
Cardboard	1.61
Plastic Tarp	1.50
Roofing Tile	1.78

Graph



Graph Part 2



Conclusion

- ▶ The plywood surface got the fastest time and this is because it has probably the least friction. The slowest surface was carpet and that is definitely because it has the most friction that is being applied to the longboard. My hypothesis was correct because the surface with the most friction went the slowest and the surface with probably the least friction went the fastest.

Works Cited

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