



force-friction

By [REDACTED]

Mentor: [REDACTED]

CLASS: [REDACTED]

Equipment

- **Chalk**
- **Timer**
- **foil**
- **Carpet**
- **Dirt/leaf area**
- **Concrete**
- **Pull-back car**
- **Metre ruler**

Method

1. Pull car on concrete surface
2. Mark chalk where to start and mark position when to let go.
3. Push forward the car to the position to let go.
4. Let go of the car and start the stopwatch.
5. When it stops, stop the timer, record the time and record the distance in your book.
6. Repeat 1-6 on carpet, foil and dirt/leaf area.



Question and Hypothesis

Question - What is the effect of different surfaces on the time it takes to stop the forward movement on an object?

Hypothesis - Carpeted surfaces will slow and stop a toy car more quickly than surfaces



Acim

To measure and compare how far a car can go on different surfaces.





results

Masters

Time

Distance

Average

Leaf Area

1

2sec 03ms

1m 16cm

2

2sec 34ms

85cm

99

3

1sec 79ms

72cm

Foil

1

2sec 09

1m 14cm

ms

2

1sec 56ms

1m 45cm

43%

3

6sec 69ms

1m 90cm

Overall result

• *Overall result was that air preparation was carpet would slow down the car the fastest was incorrect. This was the concrete caused the car to slow down. This was due to the concrete being bumpy.*



Complication

Our biggest complication was that the hall was being used so we couldn't use the wood in the hall. As a result of that we had to use a leafy area.

Another complication was that with the car we couldn't just pull it back, we had to mark a spot to pull it back to.

Why do surfaces cause friction?

Why does foil cause friction?

If you put something on foil it will
scrunch up and cause the wheel to be
trapped by the bumps.

Why does leafy soil area cause friction?

By running something over the top of a
leafy soil surface it causes the soil to
become less and less fertile.

possible for your skin to burn.

If you walk on carpet and touch a metal doorknob you get zapped. (It is called triboelectricity) (Tribo means friction.)

Acknowledgments

- We would like to thank our mentor, [REDACTED] Fang for helping us plan and discuss our experiment to get it right. Also, thank you to our wonderful teacher [REDACTED] who gave us ideas and gave us a lot of help. We are very thankful to have them.

fall

turn

Hypothesis

pull

push

fly



conclusion

glide

SCIENCE =

eg

friction

burst

question

force

Procedure

- 1) Put car on carpet surfaces.
 - 2) Pull back the car to the maximum.
 - 3) Mark the position with chalk.
 - 4) Let go of the car and press the timer.
 - 5) When it stops, stop the timer and record the time.
 - 6) Mark its position and measure the distance and also record it.
- 7) Repeat 1-6 on wood, and oil surfaces.

Mentor [REDACTED]

18.03.10 -

The people in our group are [REDACTED]
We were assigned to have our topic as 'force'. So we are doing 'friction' and grip.

Hypothesis - Carpeted surfaces will slow and stop a toy car more quickly than surfaces of leafy soil, concrete, and foil surfaces.

So we came to a question - What is the effect of different surfaces on the time it takes to stop?

Equipment Needed - Timer, toy pull-back car, carpet, wood and concrete, ruler

Our plan is to...

Firstly, we will set up...

Then we will set up all our...

Then we will begin.

Our hypothesis is that...

So record

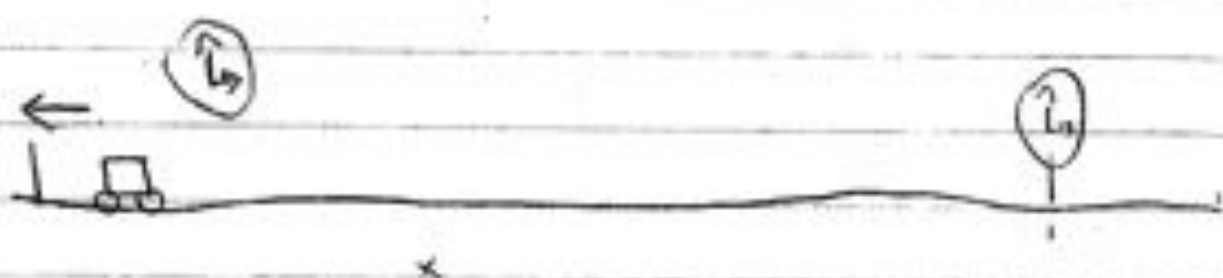


Diagram 1 Procedure

Material	Time	Distance	Average
loamy soil	25.08 ms	1m 16cm	
2	↓	↓	
2	25.34 ms	85 cm	
3	15.79 ms	72 cm	
Carpet	6.43	3.40 m	
1	5.81 sec	3.40 m	
2	6.83	5m	
3	6.43	3.74 m	
Concrete	4.28 sec	2.58 m	
1	5.75 sec	2.8m	6.21 cm
2	4.94 sec	2.85 m	
3			
foil			
1	2.09	1.45	
2	1.56	1.45	
3	6.69	1.90	

Procedure -

Aim - To get how far a car can go using different surfaces.

Equipment:

Timer

chalk

Foil

chalk

Carpet

Wood

car

concrete

ruler-metre

Method -

1. First, we will put the car on carpet surface.
2. Pull back the car to the maximum.
3. Mark the position with chalk.
4. Let go of the car and press the timer.
5. When it stops, stop the timer and record the time.
6. Mark its position and measure the distance and also record it.
7. Repeat 1-6 on wood, concrete and oil surface.

What is friction?

Friction is a type of force produced when two objects are rubbed together.

Why does an oil surface cause friction?

If you put oil on the foil and put a car on it it will cause less friction.

How does carpet cause friction?

If you rub your skin against carpet it is possible for your skin to burn.

If you walk on carpet and touch a metal door knob you can get zapped.

(it is called tribo-electricity)

(tribo means friction)

MyScience-Observation-29.04.10

Today, all the mentors come in and help and talked about our MyScience experiment which today we have completed. Min helped us she had to change wood for leaf area because at that time the hall was occupied. Today we finished our experiment so we can publish it in our powerpoint. The results of each surface was quite near each other so it didn't take much time to complete our experiment. When we were using the car we had to put it back to front because the wheels at the back were easier to push forward. We had to change the fact that we couldn't put oil on the foil because we were borrowing someone else's roll of foil, and also because ours was too short.

rubbed together

it caused

able for your

our knob

3rd 5th

1. What happened when we did our experiment? - Outcome

2. Did it go exactly as planned? What went wrong? Why?

Everything went as planned.

3. How did you change it?

4. Was the outcome of your experiment exactly the same as you expected? Yes it did!

5. Did you prove or disprove your hypothesis? It proved that my answer was correct!

+ Results-Recording

Table, graph, chart

Weekly Logbook

28 Oct 08

Every week on Friday morning we go to the computer lab. And daily during the day, we are doing our MyScience posters.

is as you

proved that