

	TEAM: 2	
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Smartphone- accelerations into physics situations	Italy	Anita Donati , Anna Mosconi, Jasmine Afruni
EXPERIMENT: Phone in car tire from a slope		

1. ORIENTATION

We will put a phone in a car tire to see what happens with the acceleration when the tire rolls down a slope.

1.1. Research question:

Is the acceleration of a rolling tire constant?

Sub-questions:

What happens with the acceleration if we change the distance that the tire needs to roll?

1.2. Hypothesis

The acceleration will be negative and not constant because the tire will slow down due to the friction with the surface.

2. PREPARATION

2.1. Material:

A car tire

A phone with phyphox attached in the tire

A flat surface

A slope to have equal initial speed every measurement

A ruler

Method:

- Put a phone with phyphox in a tire (experiment with the roll)
- Using Phyphox:
 - press on the three points in the right upper corner and press on timed measurement.
 - Delayed start 10s and duration experiment 15s. (check when you are doing the experiment)
 - Press on start button and start rolling the tire
- let it roll down from a slope and began measuring the speed (phyphox measures the speed)
- Then change the time so for example from 5,10 or 15 seconds (so measure 3 times)
- measure again
- Measure every time 3 times to make the measurements more accurate, do 3 different times
- Make sure you know the circumference of your tire.
- To let the tire have the same initial speed, let it roll from the same slope to the flat surface during different times
- Export the data
- Now calculate the acceleration with the velocity

3. DATA ANALYSIS and DISCUSSION

3.1. Observations and Measurements:

3.2. Discussion:

4. REFLECTION

4.1. Conclusion:

4.2. Comparison of the results of the different countries

4.3. Reflection:

5. REFERENCES