Forces

+ Forces - A push or pull

or Motion you feel

- Unit: newton (N)

Isaac Newton

- Eqn. - Newton's 2nd Law

$$\sum F = ma$$

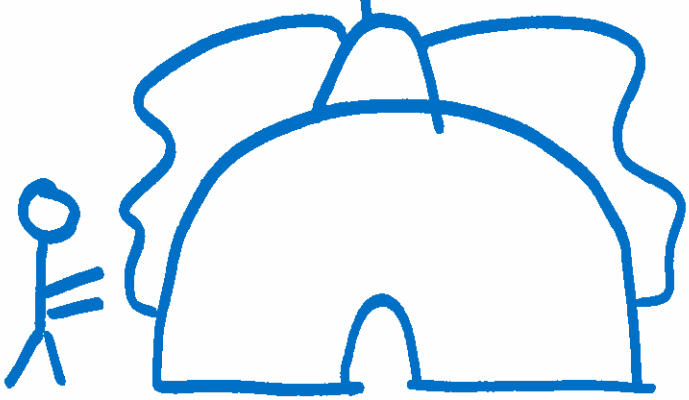
Sum of all Forces = mass X acceleratio

Push or shove

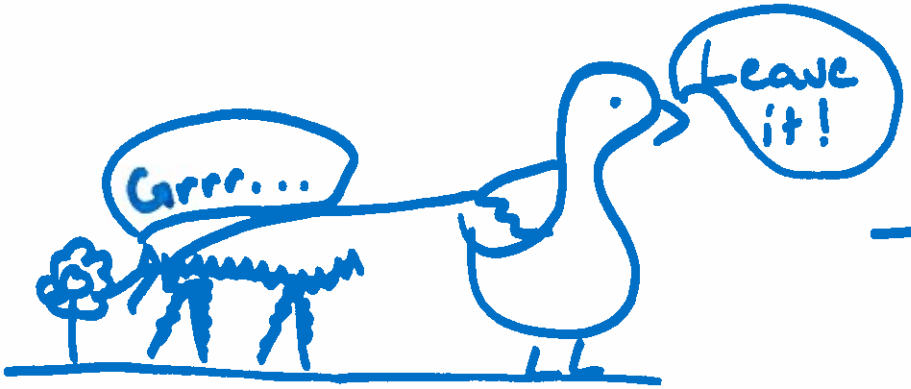
How much 'Stuff' there is

change in spee or Δ direction

- Examples

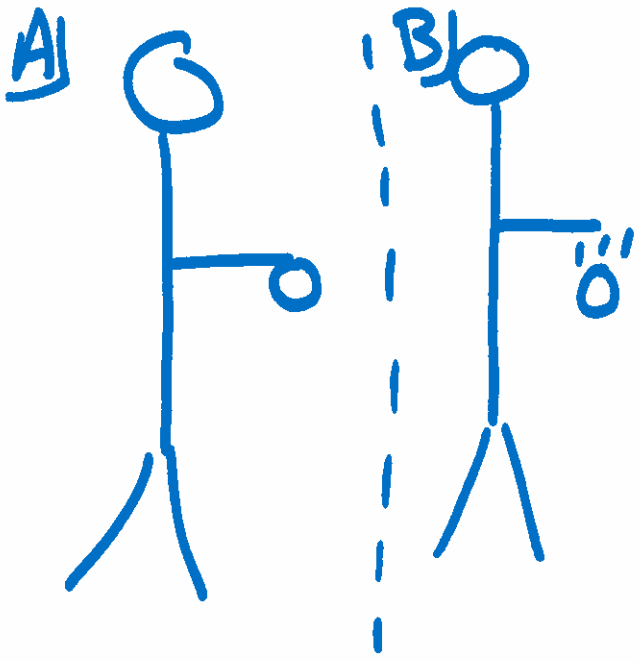


- You can not move an elephant.
- They have too much mass.



- You can move a small, evil, dog.

$+\Sigma$ - Sum of all



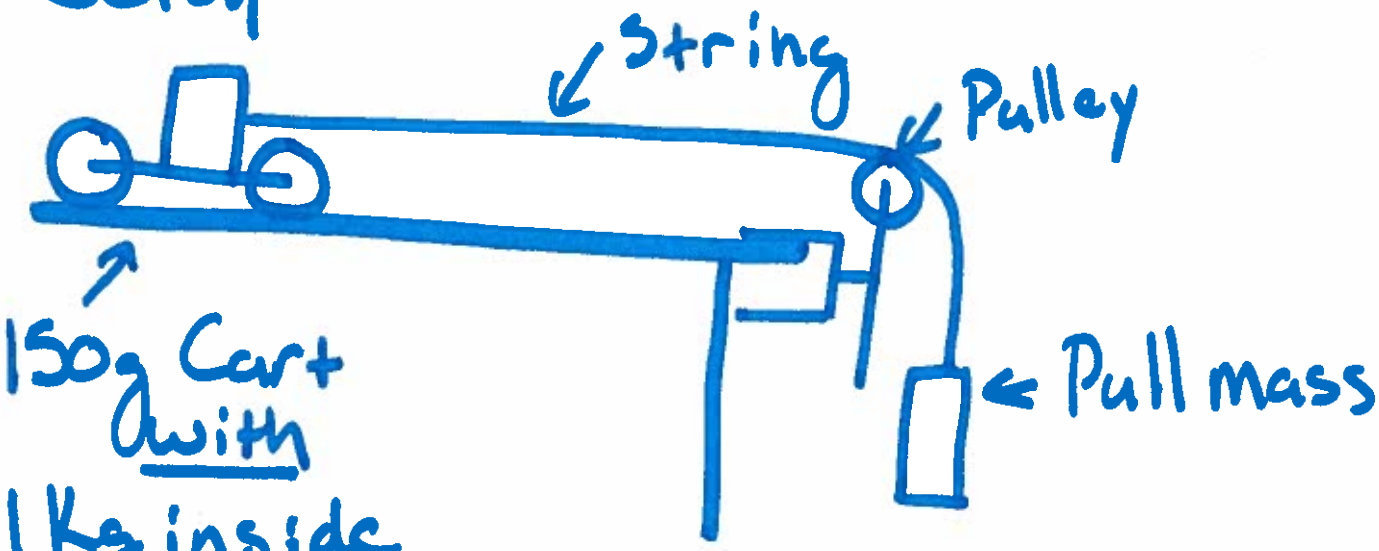
In A, the ball does not move because $\Sigma F = 0$, (the hand + gravity balance out)

In B, it falls because only gravity acts on the ball.

Forces Lab

Goal - Compare the acceleration of a cart to the force applied. The force will be applied by a mass hanging of the table.

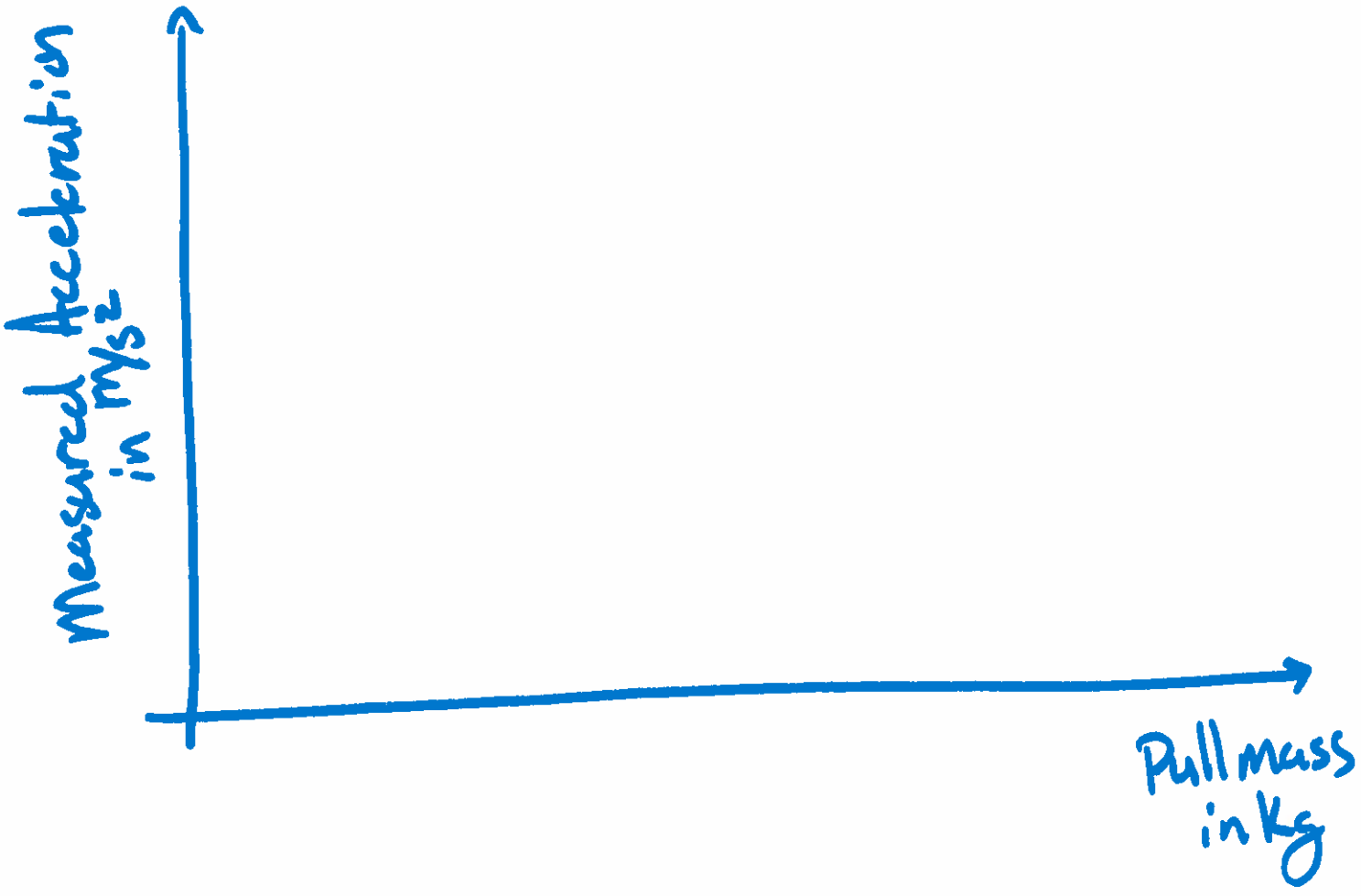
Setup -



150g Cart with 1Kg inside (1.150 Kg total)

1 Data

	Pull Mass	Measured Acceleration T1	T2	T3	Avg
1					
2					
3					



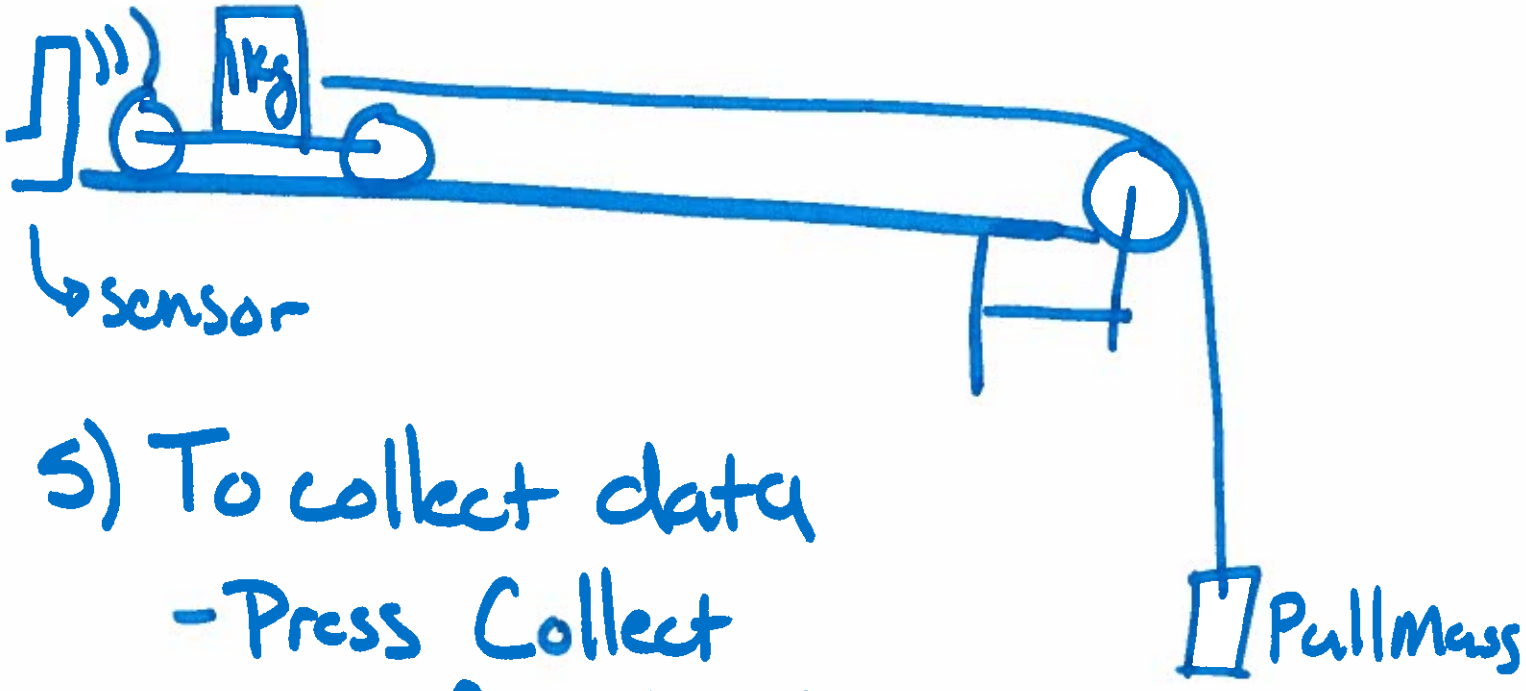
Instructions - Do NoT Copy 7

1) Download 'Forces Lab - LoggerPro' from website.

2) Open it.

3) Connect Sensor

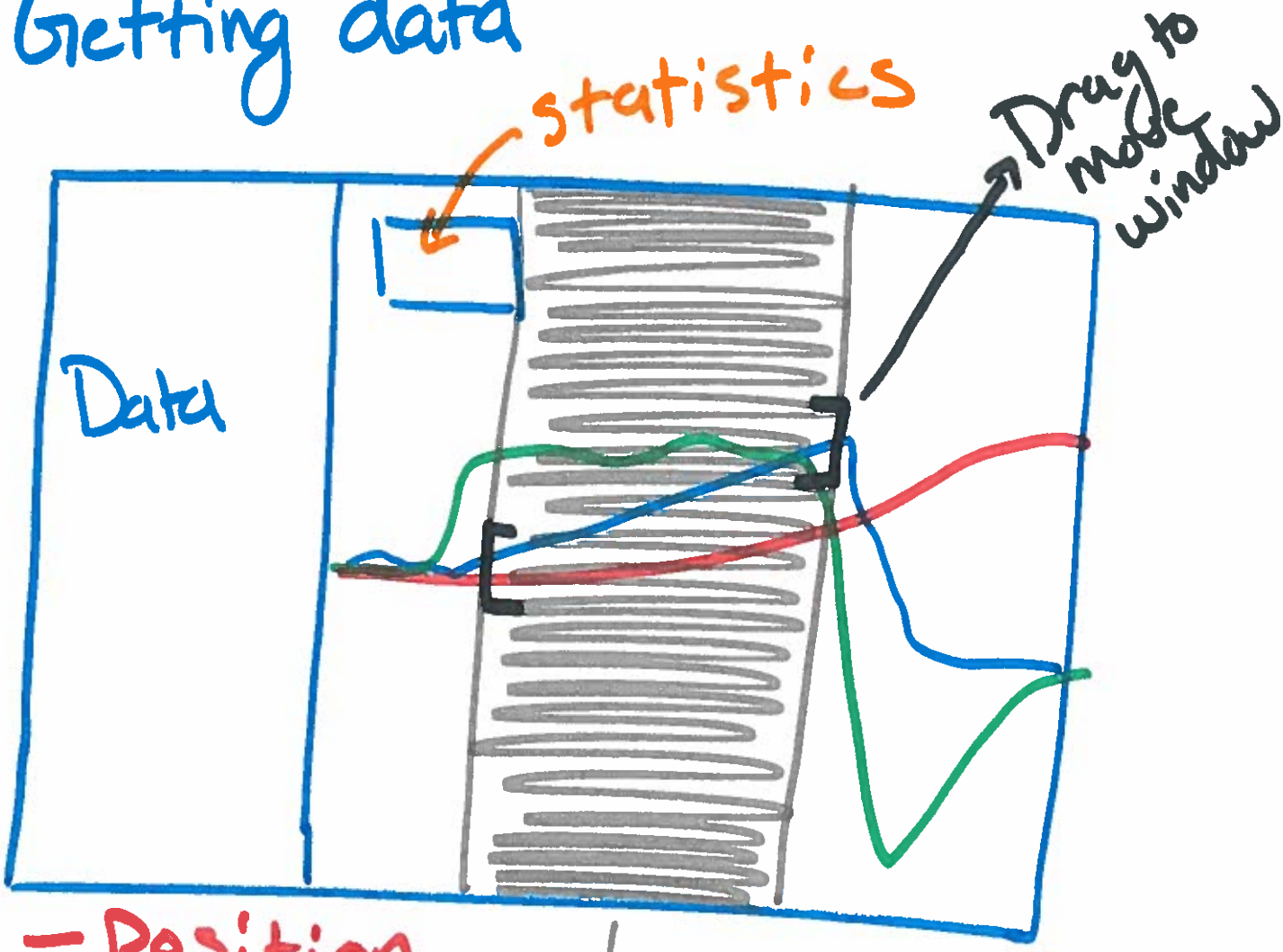
4) Setup cart + pull mass



5) To collect data
   - Press Collect
   - wait for clicking
   - release the car
   - Catch the car!

Instructions - Continued 8

6) Getting data



+ Adjust window so the ——— of the velocity is captured.
+ Record the 'mean' acceleration from the statistics window.