

Make sure to put number of decimal places 3 for everything

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Frictional forces

- 2 pages
- First page: 2 graphs, 1 table
 - o Graph 1: velocity (m/s) on the left, and on the bottom time (s)
 - o Graph 2: force (N) on the left, and on the bottom time (s) (find max & (mean after highlighting))
 - o Table 1: (three columns) containing F_s (N), F_k (N) and N (N)
- Second page: 2 displays, containing 2 graphs
 - o Graph 1: F_s on the left and N (N), on the bottom (find linear)
 - o Graph 2: F_k on the left and N (N), on the bottom (find linear)
 - **Note that you set a timer for 5 sec instead of clicking it manually**
 - **Note that normal force = mass of the tray+ mass of the bar * gravity**
(convert the grams to kg first by %1000)

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Spring forces

- 1 page
- Table & graph
- Table:
 - o Column 1: x_1 (m) (convert distance from cm to m, note you'll go from 10/20/30cm... until the dr tells you to stop)
 - o Column 2: Force (N)
- Graph:
 - o On the left Force (N), on the bottom x_1 (m) (find linear)
 - **Make sure to use 'keep mode'**

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Newton's law

- 2 pages
- Page one: Two small, one large display
 - o 2 graphs
 - Graph 1: velocity (m/s) on the left and time (s), on the bottom (find the linear)
 - Graph 2: force (N) on the left and time (s), on the bottom (find the mean)
 - o 1 table: 2 columns
 - first column: a (m/s²) acceleration
 - second column: F (N) force
- Page two: Table & graph
 - o Create the same table as page 1 but there is no need to enter the information manually
 - o As for the table put F (N) on the left and a (m/s²), on the bottom (find linear)

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Conservation of energy

- 1 page
- Two small, one large display
- 2 graphs:
 - o Graph 1: position on the left (m), on the bottom time (s)
 - o Graph 2: velocity on the left (m/s), on the bottom time (s)
- 1 table, 2 columns:
 - o Column 1: position (m)
 - o Column 2: velocity (m/s)
 - No need to find max, min, mean, or linear

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Conservation of momentum

(Elastic and inelastic collisions)

- 1 page
- 2 displays; 2 graphs
 - o Graph 1: velocity ch 1+2 (m/s) on the left, on the bottom time (s) (find max and min after highlighting) (note that it looks like a hat, if it doesn't switch one of the yellow wires with the black)
 - o Graph 2: velocity ch 3+4 (m/s) on the left, on the bottom time (s) (find max and min after highlighting)
- **Note you must manually add the sensors twice**
 - o Hardware setup:
 - Add sensors/instruments:
 1. "scienceWorkshop digital sensor"
 2. "Rotary motion sensor"
- **Remember to put the car you're crashing into in the middle**
- **Note that you'll run it twice once both mass the same and once not equal**