Galileo’s “Falling Bodies” Experiment Template

In this experiment, you will do your own tests to determine whether heavier objects fall faster than lighter ones. Was Aristotle right, or did Galileo prove him wrong? How do you think ***gravity*** and ***inertia*** will affect your results? Get ready to test some ancient ideas and see how scientific history was made!

Use the headings and sentence starters below to create your experimental report.

Aim

In this experiment I aim to…

I will do this by…

Hypothesis

I predict that when I drop the cricket and tennis balls at the same time, from the same height…

Materials

Use bullet points to list all the materials you used in YOUR experiment.

* 1 Cricket ball and 1 tennis ball
* A measuring tape or metre long ruler.
* ADD MORE ITEMS HERE

Method

Here, list every step you completed in the experiment instructions. Make sure you use your own words and number every step.

1. If you are using an iPad to record your experiment, set the camera up first with the measured drop height visible
2. Drop the two balls from the same height at the same time. Be sure to have your partner record the balls falling and hitting the ground. Also make sure to state for the camera each trial number.
3. Did one ball hit the ground before the other? Did they hit at the same time? Record your results in the table. Use your video to see which ball landed first, and how long it took.
4. Repeat the experiment (steps 1 to 3) at least 9 more times, making a total of at least 10 trials. Be sure to always record your results in the data table.
5. When you are done, add up the total number of trials each type landed first and write this in the "Total" row at the bottom of your data table.
6. Look at your results and answer the discussion questions

Results: Complete this table by ticking which ball fell faster.

| Trial # | Heavy Ball | Light Ball | Same Time |
| --- | --- | --- | --- |
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| 4 |  |  |  |
| 5 |  |  |  |
| 6 |  |  |  |
| 7 |  |  |  |
| 8 |  |  |  |
| 9 |  |  |  |
| 10 |  |  |  |
| Total |  |  |  |

### Discussion Questions: Answer each question using 1-2 sentences.

1. Which force causes all objects to fall to the ground?
2. Where does this force come from?
3. What is inertia?
4. If an object has a lot of inertia, how does this affect how easy it is to move that object?
5. Why did we drop the balls ten times?

## Conclusion:

## *Summarise your experiment using a TEEL paragraph (Topic, Evidence, Explanation, Link). Below are some sentences to help you get started.*

## This experiment was a success/not a success…

## The reason one ball was faster / slower than the other was…

## If I was doing this experiment again, to make it better I would …