

Aristotle & Galileo's understanding of forces and motion

Read 3.1 for the answers needed below.

Aristotle – was born in 384 BC in Greece. He went to an Academy of learning established by Plato, a famous philosopher. Aristotle believed you could learn by studying the physical world. His book, Physics, was about the study of nature.

1. Aristotle believed there were 4 elements and they rose to their natural order
earth (lowest) , water, air & fire (highest)
2. Aristotle believed objects needed a force to keep them in motion. This paradigm of thinking actually works if you don't know about friction!

“An object at rest likes to stay at rest”

Galileo Galilei – was born in 1564 in Pisa, Italy. Galileo was a mathematician by nature and sought to use logic and collected evidence to form theories. Galileo is credited with promoting the idea that collected evidence (data!) is important to advancing science. His ideas about our solar system eventually resulted in his excommunication from the church.

Galileo's Thought Experiment – sketch & explain.

This is nicely sketched and explained in text. We covered/discussed in class.

Galileo was the father of 'modern' science and often did experiments that generated data. However, this was one of his 'thought' experiments and from it he deduced that **an object in motion will stay in motion** if there is no other force acting on it.

Newton – born 1642 (the year Galileo died actually) in England
He put it all together and published his ideas of motion in
“Philosophiæ Naturalis Principia Mathematica”
He described 'Inertia' and called it his First Law of Motion

1st Law of Motion = Objects in rest like to stay at rest and an object in motion likes to stay in motion unless acted upon by an unbalanced force.