

PHYSICS
Newton's First Law

Mechanics – the study of Physics that deals with motion and force.

Major Players:

Aristotle (father of _____) 384 – 322 BC At 17 he entered Plato's academy – until 37. Tutored Alexander the Great. Started own school. Classified almost all existing knowledge. Natural motion vs. violent motion (imposed from without). 4 Kingdoms: Earth, Air, Fire, and Water ... and 5th is Quintessence (the perfect substance of the perfect spheres of heavenly bodies).

[experiments: 1) heavier objects naturally fall faster (later found to be taken as incorrect if you take this as an absolute statement), 2) accurate zoology]

Galileo (father of _____) 1564 – 1642 Died on Christmas day. Studied motion in U. of Pisa (dropped objects from leaning tower), telescope in U. of Padua (saw mountains on moon, moons of Jupiter, sun spots). House arrested for publishing disagreement with Church (telescope observations, Copernican Earth centered view, disagreements with Aristotle). Went blind at 74. [experiment: 1) objects accelerate from gravity 2) heavier and lighter objects fall the same if friction is ignored]

Newton (father of _____) 1642 – 1727 Born on Christmas day as Galileo died. Many discoveries and inventions (gravity, calculus, 2 laws of motion, white light has colors of rainbow, reflecting telescope) At 14 – 23 worked on farm but planned science and math. At 42 published perhaps greatest scientific paper ever: "Principia". Parliament for 2 years – never spoke – one day he stood up – everyone fell silent to hear the great Newton speak – he asked someone to close the window because there was a draft.[experiments: 1) celestial mechanics operate like an object on a rope 2) prism 'breaks up white light']

The Law of Inertia

An object at _____ tends to stay at _____ and an object in _____ tends to stay in _____

Examples of the 1st Law

The tablecloth and dishes – *please do not try this at home.*

The coin & glass

The dollar and book

Chinese ball game

Pail of water

Net Force

What is a force? ... It is a _____ or _____.