

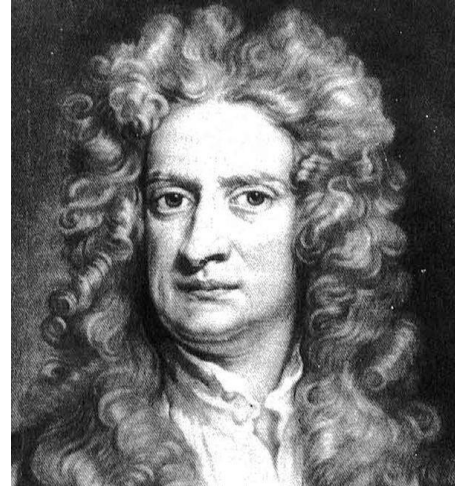
Background

Name: _____

Isaac Newton

Sir Isaac Newton (1642 – 1727) was an English astronomer, mathematician, physicist, theologian, and teacher. He is regarded by many to be one of the most important people in the history of science.

He made important discoveries about the behavior of light, mathematics, and motion. Using a prism, he discovered light was a mixture of all the colors of the spectrum. He theorized light was made of very small particles. His investigation of light led him to develop a more powerful reflecting telescope using a mirror to collect and reflect light.



In 1687, he published *Philosophiae Naturalis Principia Mathematica* (*Mathematical Principles of Natural Philosophy*). In his book he mathematically described how gravity, not only made things fall to the ground, but also kept planets in orbit as they traveled around the sun. His book is most well known for describing three important laws of motion that we still use today.

Newton's Laws of Motion

1st Law – Objects in motion or at rest want to stay that way until another force acts on them. This law is sometimes referred to as inertia.

2nd Law – The force of an object depends on it's mass and acceleration or $F = ma$.

3rd Law – For every action there is an equal and opposite reaction.

Name: _____

Isaac Newton Background Questions

1. What did Isaac Newton discover about light?

2. What did *Philosophiae Naturalis Principia Mathematica* (*Mathematical Principles of Natural Philosophy*) describe?

3. What are Newton's 3 laws of motion?



Newton and the falling apple

While sitting in an apple orchid, Newton's observation of an apple falling to the ground made him wonder why all things fall straight down, rather than sideways or upward. This eventually led him to develop his universal law of gravity.

Isaac Newton

MATCHING

In the space provided, write the letter of the definition that best matches the term or law.

_____ 1. Newton's 1st Law

_____ 2. Force

_____ 3. Newton's 3rd Law

_____ 4. Newton's 2nd Law

_____ 5. Friction

a. a push or a pull

b. an object in motion or an object at rest wants to stay that way until another force acts on it

c. resistance that occurs when one surface moves over another

d. $F = ma$

e. for every action there is an equal and opposite reaction

SHORT ANSWER

Provide the information requested in the space provided.

6. Describe an example of Newton's 3rd Law of Motion.

7. What is inertia?

8. What would the world be like without friction?

