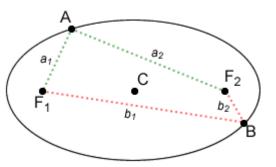# Vocabulary: History of Gravity

- Ellipse – a flattened circle.

    - An ellipse contains two foci, labeled "F_1" and "F_2" on the diagram at right.

    - The sum of the distances from any point on the ellipse to the two foci is constant. On the diagram, $a_1 + a_2 = b_1 + b_2$.

    - The orbits of planets and other objects in the solar system are elliptical, with the Sun at one focus.

- General relativity – a geometric theory of gravity developed by Albert Einstein.

    - According to general relativity, a large mass causes a warp in the space-time continuum.

    - The predictions of general relativity have been confirmed by many experiments.

    - General relativity has supplanted Newton's law of universal gravitation as the accepted theory of gravity in physics today.

- Geocentric – a model of the solar system in which the Sun and planets revolve around Earth.

    - Geocentric is Latin for "Earth-centered."

- Gravitational constant – the constant G in the law of universal gravitation.

    - The gravitational constant is equal to the gravitational force (in newtons) between two 1-kilogram masses separated by a distance of 1 meter.

    - If mass is measured in kilograms and distance in meters, the value of G is 6.67259×10^{-11} m³/kg·s².

- Gravity – the force of attraction between all objects in the universe.

    - The magnitude of the gravitational force between two objects depends on the masses of the two objects and the distance between them.

- Heliocentric – a model of the solar system in which Earth and the planets orbit the Sun.

    - Heliocentric is Latin for "Sun-centered."

- Law of universal gravitation – an equation that states that the force of gravity between masses m_1 and m_2 separated by distance r is proportional to the product of the masses divided by the distance squared:

$$F_{gravity} = G \frac{m_1 m_2}{r^2}$$