

Notes for Orbital Motion

- Motion and Forces

- Motion refers to a change in position and can only take place when a force (a push or pull) is applied.
- Direction of force determines direction of motion.
- Changing directions requires another force.

- Inertia

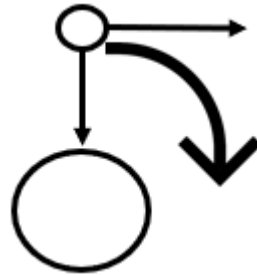
- Inertia is an object's resistance to a change in motion.
- Law of Inertia states that an object at rest stays at rest and an object in motion stays in motion, unless acted upon by a force.

- Gravity

- Gravity is an attraction force between two objects that is directly proportional to their masses and indirectly proportional to the distance between them. (Caused by the bending of space)

- **Orbital Motion**

- Object in space want to keep moving straight due to inertia but gravity pulls them toward the Sun, planets, or moons.
- The combined forces from inertia and gravity result in a circular orbital motion.



- **Year**

- Takes 365.25 days for Earth to orbit the Sun.
- Every four years, an extra day is added called leap day. Feb. 29th.

- **Day**

- Takes 24 hours for Earth to rotate on its axis.
- Rotates counter-clockwise – Sun rises in the east, sets in the west.
- 6 time zones in the 50 states, each varying by 1 hour.