

Dynamics of Uniform Circular Motion & Gravity Learning Targets

Students will be able to understand, explain, discuss and apply the ideas of Newton and Kepler as they pertain to uniform circular motion and gravity.

Student Targets

1. I can distinguish between centripetal and centrifugal.*
2. I can identify the direction of acceleration for an object undergoing uniform circular motion.*
3. I can calculate centripetal acceleration.*
4. I can apply Newton's 2nd Law to solve uniform circular motion dynamics problems.*
5. I can calculate the gravitational force between two masses.
6. I can calculate the acceleration due to gravity (gravitational field) on other planets and at various distances from a planet's surface.*
7. I can recognize Kepler's Laws of Planetary Motion.*
8. I can use Newton's form of Kepler's 3rd Law to determine a planet's mass based on an object in circular orbit about the planet, or the period of an orbit based on a planet's mass.*

* Pre-AP Physics target