Planetary motion

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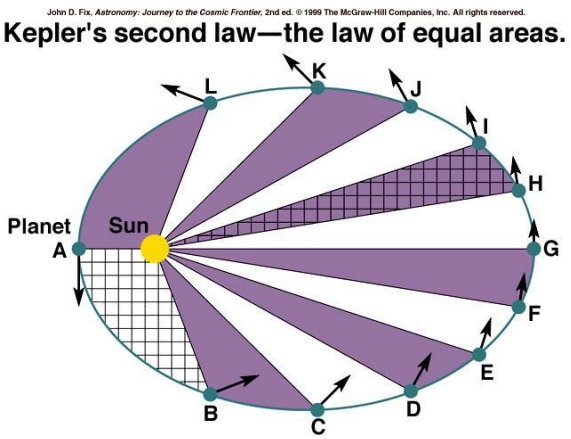
Exploring Planetary Orbits

- As the distance from the Sun to the Planet changes, so does the velocity in which the Planet, or satellite, orbits.
- We can observe how different elasticities changes the orbital velocity of the Planet
- According to Kepler's Second Law states that a line between the sun and the planet sweeps equal areas in equal times.



Standards Of Mathematical Practice

- Plotting and tracing a point that has Planet's distance as the independent variable and Velocity as the dependent variable.
- Sliders that control the Speed, Time Span, and Elasticity to show how the Orbital Velocity is effected.

- MP 1: Making sense of problems and persevering in solving them.
  - Analyze information from exploring different elasticities.
  - Checking answers generated with program compared to actual calculations.
- MP 4: Model with Mathematics
  - By applying knowledge of Kepler's 2nd Law, we can explore different elasticities of orbit.
  - We can apply formulas to calculate the velocity and plot the changes.

The best part about my project is that I can easily show students the concepts of Kepler's 2nd Law without drawing many different diagrams for different elasticities.