Solar System Project

**Introduction:** You have been working on NASA’s Kepler’s Mission to explore the universe in search of Earth-like planets and you have found a new solar system. This solar system has a star at the center and at least one planet.

**Objectives:** I can investigate Kepler’s three laws of planetary motion; I can model the life cycle of the star; I can analyze star composition through spectroscopy.

**Directions:** Create an illustrated book or poster of your new found solar system (3-Dimensional Models will be extra credit).

**Part 1:** Create a model of your planet and include the following on the planet

1. Name of planet and picture.
2. Mass (Kg)
3. Diameter (Km)
4. Period of Orbit (Earth Years)
5. Distance to the nearest star (AU)
6. Atmosphere
7. Two geographic features
8. Aliens?

**Part 2:** Create a star at the center of your solar system and include the following information.

1. Name of star and picture
2. Stage of star
3. Composition and energy source
4. Where is the star in the H-R diagram?

**Rubric**

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| **Characteristics** | **5 Exemplary** | **4** | **3** |
| Content (x4) | All characteristics demonstrate a great understanding of planets and stars. The planet and star’s information shows that research is evident. | Characteristics demonstrate an understanding of planets and stars. Research was completed. | Characteristics show some understanding of stars and planets. |
| Kepler’s laws (x2) | Kepler’s Laws are accurately used. Calculations are accurate and displayed to show Kepler’s Laws. | Kepler’s laws are used. Calculations are displayed. | Kepler’s laws were attempted. |
| Craftmanship (x1) | Students demonstrates great effort and take pride in their work. | Students demonstrate good effort and craftsmanship. | Students put forth some effort. |