

**Exploring the Solar System**  
**Exploring the Planets: What if? How Come? And Why?**

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*Space, the final frontier. These are the voyages of the Starship Enterprise. Its five-year mission: to explore strange new worlds, to seek out new life and new civilizations, to boldly go where no man has gone before.*

- Captain James T. Kirk, start of every episode of the original TV series 'Star Trek'.

**Synopsis:**

What if the solar system had formed differently? How come Earth is the only planet with liquid water? Why do we see the rings of Saturn but not the rings of the other Jovian planets? These questions are just the beginning in our study of the Solar System during this science unit. This unit is appropriate for middle school students studying the Solar System and the planets specifically. Students will create a culminating project that will be the driving force of instruction throughout the unit. Students will research, design and build a simulated Space Probe or Lander created for travel to a student chosen planet. The Space Probe will require parts to perform planet-specific tasks and achieve mission goals. Unit study will focus on a comparison of the planets to recognize their differences so that student probes will be factually accurate in their design. Hands-on, inquiry based learning stations will allow students to experience the characteristics of each planet. Students will investigate Mercury's craters, the greenhouse effect on Venus, and the composition of the rings of the Outer Planets. Students will recognize the vastness of our solar system through creation of a simulated solar system using a variety of objects.