

## Solar System Designer Activity

Before beginning this activity read the information located at:

Wikipedia Planetary System, [http://en.wikipedia.org/wiki/Solar\\_systems](http://en.wikipedia.org/wiki/Solar_systems)

Wikipedia Solar System, [http://en.wikipedia.org/wiki/Sol\\_System](http://en.wikipedia.org/wiki/Sol_System)

Some helpful websites include:

Planet Quest New Worlds Atlas, [http://planetquest1.jpl.nasa.gov/atlas/atlas\\_search.cfm](http://planetquest1.jpl.nasa.gov/atlas/atlas_search.cfm)

Wikipedia Extrasolar Planet, [http://en.wikipedia.org/wiki/Extrasolar\\_planet](http://en.wikipedia.org/wiki/Extrasolar_planet)

Wikipedia Dwarf Planet, [http://en.wikipedia.org/wiki/Dwarf\\_planet](http://en.wikipedia.org/wiki/Dwarf_planet)

Wikipedia Gas Giant, [http://en.wikipedia.org/wiki/Gas\\_giant](http://en.wikipedia.org/wiki/Gas_giant)

Wikipedia Hot Jupiters, [http://en.wikipedia.org/wiki/Hot\\_jupiter](http://en.wikipedia.org/wiki/Hot_jupiter)

Wikipedia Pulsar Planet, [http://en.wikipedia.org/wiki/Pulsar\\_planet](http://en.wikipedia.org/wiki/Pulsar_planet)

Wikipedia Terrestrial Planet, [http://en.wikipedia.org/wiki/Terrestrial\\_planet](http://en.wikipedia.org/wiki/Terrestrial_planet)

Our solar system currently consists of 4 terrestrial, 4 gas giant, 5 dwarf planets, and many smaller objects. Now is your chance to design your own solar system, which must be different than our own! Your solar system may consist of any reasonable combination of **at least 3 total planets**. Your planets may be any combination of terrestrial, gas giant or jovian, hot Jupiters, hot Neptunes, dwarf, and pulsar planets.

Write a one to two page, double-spaced description of your *realistic* solar system that includes all of the following, based on what astronomers currently know about solar systems and their planets:

1. the radius of the central star in kilometers
2. number of *each* type of planet, and rationale for selecting the types and number of planets you chose
3. the distances of *each* planet in kilometers relative to its central star from closest to farthest and the rationale for placing each planet at those distances
4. radius in kilometers, orbital period around its star in days or years, rotation period in days or years for *each* planet
5. the number of moons for *each* planet and the rationale for selecting the number of moons
6. *each* planet's composition based on its type
7. *each* planet's surface characteristics, including plate tectonics, volcanoes, cratering, oceans and their composition
8. *each* planet's atmospheric characteristics, including atmospheric composition, wind speed, and storm types
9. special characteristics, existence and type of life, including rings, unusual tilt, or other characteristics, for *each* planet

Be sure that all of your reasoning makes sense! For example, your planets' distances from their star can't place them inside the star, terrestrial planets are unlikely to have wind speeds greater than those of jovian planets, jovian planets don't have solid surfaces which would enable us to observe tectonic activity, and larger planets are more likely to have rings and more moons than smaller planets.

You may include pictures and/or information obtained from additional sources, however you **must** include a **MINIMUM OF 3 REFERENCES** to receive credit, including those listed by the instructor, and must **type** this assignment in order to receive credit!