

Riverton Street Charter School

Class: _____

Name: _____

Date: _____

The Solar System

Scenario: Astronomers working with NASA's Kepler Space Probe Mission have discovered a new planetary system with a similar-sized star as our sun. The first data table below lists data for each of the planets found in the new planetary system. The second data table lists data for Earth.

Prompt: Write a scientific explanation that describes which planet would most likely be hospitable enough for humans from Earth to colonize.

New Planetary System Data

<u>Planet</u>	<u>Composition</u>	<u>Distance from the Star</u>	<u>Tilt</u>	<u>Water Availability</u>	<u>Atmospheric Composition</u>
Planet A	Terrestrial	62.1 x 10 ⁶ km	5°	No water or ice	45% oxygen 30% sodium 25% hydrogen
Planet B	Terrestrial	85.9 x 10 ⁶ km	180°	Small pockets of frozen ice found deep in the crust	94% carbon dioxide 6% nitrogen
Planet C	Terrestrial	115.1 x 10 ⁶ km	38°	Ice found at the poles and liquid water beneath the surface	96% carbon dioxide 4% nitrogen
Planet D	Terrestrial	163.2 x 10 ⁶ km	23°	75% of Planet D's surface is covered by water	73% nitrogen 27% oxygen
Planet E	Gaseous	347.8 x 10 ⁶ km	123°	Water droplets might be found in certain gas layers	93% hydrogen 7% helium
Planet F	Gaseous	527.3 x 10 ⁶ km	100°	Water droplets might be found in certain gas layers	97% hydrogen 3% helium

Earth's Data

<u>Planet</u>	<u>Composition</u>	<u>Distance from the Star</u>	<u>Tilt</u>	<u>Water Availability</u>	<u>Atmospheric Composition</u>
Earth	Terrestrial	149.6 x 10 ⁶ km	23.5°	70.8% of Earth's surface is covered by water	78% nitrogen 21% oxygen

Claim: _____

Evidence: _____

Matching Directions: Fill in the missing words in the definition. Then match it to the correct word or phrase that it defines.

Word Bank

floating rotate celestial causes planets
other indefinite condense volume asteroids

Definition	Word
A force that _____ objects to attract to each _____.	solar system
A large area, mostly made up of stars, gas, and dust, but also planets, moons, and other _____ bodies.	dust
All the planets, moons, _____, comets, and the sun they _____ around.	gas
A form of matter with _____ shape and _____.	galaxy
Very small pieces of matter _____ in space. When they _____, they can form stars and _____.	gravity

The Sun is a star. The reason it looks so big and bright as compared with the stars in the night sky is that it is very close to the Earth. Most stars that we see are much further away from the Earth; this is why they look so small in the night sky, even if they are similar to the Sun. The Sun is at the center of the Solar System. The planets, asteroids and comets all revolve around the Sun. The Sun's role as the center of the planetary system comes from its high mass; it has 99.8% of the mass in the Solar System and, therefore, guides the movement of the other objects via gravitational forces. The light emitted by the Sun brings energy to the rest of the Solar System and largely dictates the temperatures on the planets.