Name: _____ Date: _____ Period: _____

# The Solar System: Who's A Planet?
# Readers Theatre

**Characters**

| | | |
|---|---|---|
| Sun | Jupiter | Comets |
| Mercury | Saturn | Asteroids |
| Venus | Uranus | IAU Member |
| Mars | Neptune | |
| Earth | Pluto | |

*(All current planets are wearing signs around their neck saying planet. Asteroids and comets have individual signs.)*

***Sun:*** (*Motioning to everyone else present*). Quiet, celestial bodies, quiet. You know the "solar" in solar system means _____. That means I'm the boss. Since I am at the _____ of the solar system, please gather around me… No, no, not circular…in an _____ orbit. Now…

***Earth*** *(interrupting):* People used to think that you (*points to Sun*), the Moon and these other guys (*pointing to other planets*) orbited me. But then that darn scientist _____ _____ had to come along in the year _____ and prove that we all orbit you, Sun.

***Sun:*** Earth, you egomaniac, are you done interrupting? Planet _____, I need you closest to me, please. We are assembled here today to determine which of you planets can stay a planet in our great solar system, that was formed _____ billion years ago from a large cloud of dust and gas called a _____. We have a member of the International Astronomical Union here with us today to listen to your defense. Thank you for coming, IAU member.

***International Astronomical Union Member***: (*hurried*) Thank you for having me, Sun. But really, we can just cut to the chase because the IAU met in 2006…

***Sun:*** *(interrupting)* Let's just get started - so, going in order from closest to my core (the site of nuclear _____, where _____ becomes helium) to furthest away, you must tell me about yourself. Go ahead, Mercury.

***Mercury:*** I am a place of extremes. I have no _____, only traces of hydrogen and helium from solar _____. On my bright side, my surface reaches a maximum temperature of _____ºC. But my dark side is a frigid _____ºC. I am obviously willing to take a beating, as shown by the moon-like _____ on my surface, caused by bombardment of _____. I am quickest to make it around the sun in a total of _____ Earth days. I'm a pretty sad planet, 'cause no one seems to really like orbiting me – *(says with a frown)* I have _____ moon friends.

***Sun**:* Next, please.

***Venus**:* I am named after the Roman goddess for love and _____. But looks can be deceiving because my atmosphere is extremely _____ and composed of the gas, _____ _____. This creates a _____ effect, similar to what is happening on Earth. I also have sulfuric acid clouds that are responsible for high _____ that blow fiercely. Often, I am called the _____ planet of Earth, because we are similar in size and mass. But I am like Earth with a fever, as my surface temperature is _____.

***Earth:*** (*cocky*) Hey guys, good to be here. You know what they say, "welcome to Earth, _____ rock from the sun. What a pleasant place to be if you're a living creature. One of my most unique features is the abundance of _____ that supports life. My highest point is 8 km tall - my most *(using air quotes)* "intelligent" inhabitants call it Mount _____. My atmosphere is suitable for life and is made of mostly _____, oxygen and argon. It takes me reasonable _____ days to make it around you, Sun.

***Mars:*** Hey guys, what's up? I am Mars, named for the Roman god of _____. I am considered the last of the "_____ Planets", which are made of entirely of rock. Lots of people call me the _____ Planet, due to the presence of _____ in the soil. I have the largest volcano,_____ _____ in the whole solar system. Many Earthlings think I harbor aliens called Martians, but I haven't seen any yet. I do have _____, which could support life, and I have seasons similar to Earth because my _____ is tilted ____. I have two small moon friends that hang around me. Their names are _____ and _____. It takes me _____ Earth days to make it around you, Sun.

***Asteroids:*** We are small pieces of _____ material. We are not spherical, but rather _____ in shape. The total mass all our other asteroid friends in the solar system roughly equal the mass of Earth's natural satellite, the _____. More than 100,000 of us asteroids lie between the space between Mars and Jupiter called the _____ _____. Our largest brother is _____.

***Sun**:* Outer planets, who's next?

***Jupiter**:* (*Walks up confidently with chest puffed out)* I'm the bully of the solar block, being the largest planet, with a diameter of _____ kilometers. I am gassy – Ia mostly composed of _____ and _____. My many different colors are actually _____ and my huge _____ spot is a storm that has been brewing for 400 years. I am so awesome that all the moons want to hang around me. I have at least _____ of them. My largest is _____. The moon _____ is the most volcanically active. My two other large moons are_____ and _____.

***Saturn** (walking unsteadily, arms flailing out to side):* You will have to excuse me, but I spin around my axis every _____ Earth hours that I am quite dizzy. *(props himself*

*against a desk)* Ok, I feel more stable now. My most brilliant features are the numerous _____ that surround me, which are made of ice particles. My atmosphere is composed of 97% of this element _____, which definitely won't support the Earthlings. I have more than _____ moons, including the largest, which I appropriately call _____. It takes me _____ Earth years to make my orbit around the sun.

***Uranus**:* Despite what everyone says, I am not bland or boring or named after an Earthling's body part. I may look _____- _____ in color, but I am not sick. I have faint _____ that surround me. Also interesting is the fact that my axis is tilted nearly on its side, so my poles are directly facing the sun. And I am nearly _____ times as far away from the sun as Saturn is, which makes me very _____ in temperature.

***Neptune**:* I look greenish-blue in color because of the presence of _____ gas. Like Uranus and Jupiter, I have thin, narrow rings surrounding me. While I appear pretty non-threatening, my atmosphere has _____ that blow nearly 1,000 miles per hour. It was recently discovered that some of my moons have spouting _____ on them, just like Old Faithful in Earth's Yellowstone Park.

***Pluto:*** I was named by a schoolgirl from England in the 1930s. My surface is composed methane found in this state of matter: _____. Even though my average surface temperature is a chilly _____º C, I have a warm personality. I am really small compared to the rest of these guys – my diameter is only _____ kilometers. It takes me _____ years to orbit the sun.

***Comets:*** We go by the nickname "dirty snowball" because we are made of frozen _____ and gases, but we don't particularly like this name. We have the ability to look invisible unless I get close to you, Sun. Then your solar _____ pushes our gases and dust into a _____ that is visible to Earthlings. We gather together in the _____ _____ just past Pluto.

***Sun:*** Thank you to all celestial bodies for your inspiring defense of your unique qualities. IAU member, any comments?

***International Astronomical Union Member***: On behalf of the IAU, I extend my appreciation for the great turnout by all of you celestial bodies. You all present your unique and interesting characteristics well; however, the IAU determined that planets must have specific traits. *(Clears his/her throat)*

First, a "planet" is a celestial body that _____ the sun. Please step forward if this applies to you.

*(Everyone moves forward)*

***International Astronomical Union Member***: Second, a planet must have sufficient _____ for its self-gravity to overcome rigid body forces so that it assumes a

hydrostatic equilibrium. This means you have a nearly _____ shape. Please step forward if this applies to you.

*(Everyone except for Asteroids & Comets)*

***Asteroid:*** *(looking at Comet):* Oh darn, we won't be upgraded to planet status.

***Comet:*** *(joking)* We'll need to gain some weight before the next IAU meeting!

*(Comet and Asteroid step off to the side)*

***International Astronomical Union Member***: Finally, a planet must have cleared the _____ around its orbit. This means it is gravitationally dominant.

*(Everyone except Pluto, who is starting to cry, steps forward)*

***International Astronomical Union Member:*** Pluto, I'm sorry, but you can no longer be called a planet because you share your orbit with other icy bodies called _____ _____ _____ . I regret having to do this to you Pluto, but the fact of the matter is if we kept you, we would have to add many other planets that have characteristics similar to yours- and that would be too many for eighth graders across the world to memorize. Pluto, please hand over your planet status. (*Pluto hands over Pluto sign).* On the bright side, now you can be a _____ planet. *(Hands over new sign)*

***Pluto****: Begins to sob uncontrollably.* I'll do a better job. Just one more chance. Please!?! I'm begging you. I know I can do it! I can be a planet!!!

***International Astronomical Union Member:*** I'm sorry. The decision is final for now. Until another group of scientists get together and change the definition again.

***Asteroid and Comet:*** *Consoling Pluto.* Poor Pluto, it's ok. We know how you feel.

***All other Planets***: Tough break, Pluto, but at least you still get to be a dwarf planet.

Created by Laura Stock