UNIT 7: Kilo Hoku - Astronomy & Navigation  
The Ordered Solar System  

Powerpoint Questions & Key Words

DIRECTIONS: Complete the notes below as you watch the Powerpoint slideshow

**Slide 3:**
Three types of objects orbiting our Sun
1. 
2. 
3.

**Slide 4:**
What defines a planetary object as a planet?
1. 
2. 
3.

Why is Pluto no longer considered a planet?

**Slide 5:**
What defines a planetary object as a Dwarf Planet?
1. 
2. 
3.

What is the difference between a Dwarf Planet and a plutoid?
Slide 6:
List the 5 recognized Dwarf Planets
1. 
2. 
3. 
4. 
5.

Slide 7:
Who was the Dwarf Planet Haumea named after?
Who were Haumea’s two moons Hi‘iaka and Namaka named after?

Slide 8:
Who was the Dwarf Planet Makemake named after?

Slide 9:
Three objects that do not fall under the classification of a Dwarf Planet or planet (Small Solar System Bodies)
1. 
2. 
3. 
If an object is not massive enough to be rounded by its own gravity, it falls under what category?
* Dwarf Planets
* Planets
* small Solar System bodies
Slides 10-12:

Terrestrial planets are…
1. 
2. 
3. 
4. 

List the 4 planets in our Solar System that are considered terrestrial.
1. 
2. 
3. 
4. 

Gaseous planets are…
1. 
2. 
3. 
4. 

List the 4 planets in our Solar System that are considered gaseous.
1. 
2. 
3. 
4.
Slide 13:
Which planet in our Solar System has the hottest temperatures?
Which planet in our Solar System has the coolest temperatures?
One day on Venus is equal to how many days on Earth?
Which 4 planets have a one-day period that is equal to less than one Earth day?

Slide 14:
Which planet has the largest mass?
Which is the least dense planet? Which is the most?
Which 3 planets have a stronger gravity field than Earth?

Slide 15:
How many stars are estimated to be in the Milky Way Galaxy?
How thick is the Milky Way Galaxy?
How many light years across is the Milky Way Galaxy?
The Ordered Solar System: Key Words

- **Celestial** - of or relating to the sky or visible heavens (the sun, moon, and stars are *celestial* bodies).

- **Satellite** - A natural satellite or moon is a celestial body that orbits a planet or smaller body. Technically, the term *natural satellite* could refer to a planet orbiting a star, or a dwarf galaxy orbiting a major galaxy, but it is normally synonymous with *moon*.

- **Planet** - A planet is a body that orbits the Sun (e.g., this definition only applies to our Solar System), is large enough for its own gravity to make it round, and has "cleared its neighborhood" of smaller objects.

- **Gas Giants** - Jupiter, Saturn, Uranus, and Neptune are all examples of gaseous planets. They have more He and H, are less dense, are all ~ larger than Earth, are spaced farther apart than terrestrial planets, and are located farther from the Sun than terrestrial planets.

- **Terrestrial planet** - Mercury, Venus, Earth, Mars are terrestrial planets. They are also known as rocky planets. They are more dense, more closely spaced, and are smaller than the gaseous planets. They are also closer to the Sun than the gaseous planets.

- **Plutoid** - A plutoid is a dwarf planet located beyond the orbit of Neptune

- **Dwarf planet** - fails at least one of the IAU criteria for being a planet.

- **IAU** - The International Astronomical Union (IAU) was founded in 1919. Its mission is to promote and safeguard the science of astronomy in all its aspects through international cooperation.

- **Kuiper Belt** - The Kuiper belt is a region of the Solar System that is located beyond Neptune’s orbit and extends ~30 – 50 AU (or 30 to 50 times the distance of the Earth from the Sun). There are hundreds of orbiting Kuiper belt objects (KBOs); the dwarf planet Pluto is one of these KBOs.

- **Asteroid Belt** - The asteroid belt is a region of the Solar System that is located between the orbits of Mars and Jupiter (2.2 - 3.3 A.U.). Most asteroids are located here. There are more than 20,000 numbered asteroids in the asteroid belt and there are probably millions of asteroids in total. The range in size from Ceres, 940 km in diameter ~ one-quarter the diameter of our Moon, to bodies that are less than 1 km across.
Ordered Solar System Powerpoint Questions – ANSWER KEY

Slide 3:
Three types of objects orbiting our Sun

1. Planets
2. Dwarf Planets
3. Small solar system bodies

Slide 4:
What defines a planetary object as a planet?

1. A body that orbits the Sun
2. Is large enough for its own gravity to make it round
3. Has “cleared its neighborhood” of smaller objects

Why is Pluto no longer considered a planet?
Pluto can not clear its neighborhood of smaller objects

Slide 5:
What defines a planetary object as a Dwarf Planet?

1. Celestial body orbiting the Sun
2. Massive enough to be rounded by its own gravity
3. Has NOT cleared its neighboring region of planetesimals

What is the difference between a Dwarf Planet and a plutoid?
Dwarf planets located beyond the orbit of Neptune are Plutoids.
Slide 6:

List the 5 recognized Dwarf Planets

1. Ceres
2. Haumea
3. Eris
4. Makemake
5. Pluto

Slide 7:

Who was the Dwarf Planet Haumea named after?
The Hawaiian goddess of childbirth and fertility, Haumea.

Who were Haumea’s two moons Hi’iaka and Namaka named after?
They are named after two of Haumea’s daughters.

Slide 8:

Who was the Dwarf Planet Makemake named after?
Makemake was named after the Rapanui god of humanity.

Slide 9:

Three objects that do not fall under the classification of a Dwarf Planet or planet

1. Asteroids
2. Comets
3. All minor planets except dwarf planets

If an object is not massive enough to be rounded by it’s own gravity it fall under what category?

*Dwarf Planets
*Planets
*small Solar System bodies
Slide 10-12:

Terrestrial planets are…

1. Rocky (more dense)
2. Smaller than gas giants
3. More closely spaced than gas giants
4. Are located closer to the Sun than gas giants

List the 4 planets in our Solar System that are considered terrestrial.

1. Mercury
2. Venus
3. Earth
4. Mars

Gaseous planets are…

1. Gaseous (less dense)
2. Larger than terrestrial planets
3. Spaced farther apart than terrestrial planets
4. Are located farther from the Sun than terrestrial planets

List the 4 planets in our Solar System that are considered gaseous.

1. Jupiter
2. Saturn
3. Uranus
4. Neptune
Slide 13:

Which planet in our Solar System has the hottest temperatures? Venus

Which planet in our Solar System has the coolest temperatures? Uranus

One day on Venus is equal to how many days on Earth? 243

Which 4 planets have a one-day period that is equal to less than one Earth day? Jupiter, Saturn, Uranus, and Neptune

Slide 14:

Which planet has the largest mass? Jupiter

Which is the least dense planet? Which is the most? Saturn is the least dense, Earth is the most dense planet.

Which 3 planets have a stronger gravity field than Earth? Jupiter, Saturn, and Neptune

Slide 15:

How many stars are estimated to be in the Milky Way Galaxy? 200 billion stars

How thick is the Milky Way Galaxy? 1,000 light years

How many light years across is the Milky Way Galaxy? 100,000 light years