

Solar System Vacation Work



INTRO

Our solar system is a vast expanse of almost nothingness that is completely hostile to life as we know it. The centerpiece, our sun, makes up about 99.8 % of the mass of our system. The remaining 0.2% of matter is miniscule when compared to the sun, however the bodies that comprise that matter are intriguing, interesting, and wildly different orbs of rock and gas orbiting our massive gravity-creator we call the sun. Each member of this family of bodies is as different and odd as the kids in an astronomy class; yet each is unique and marvelous in its own way.

PROJECT

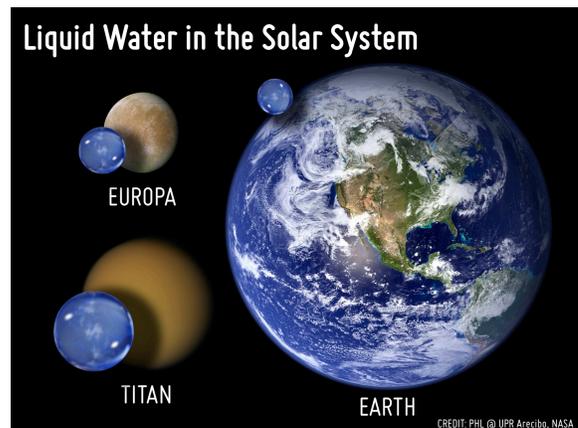
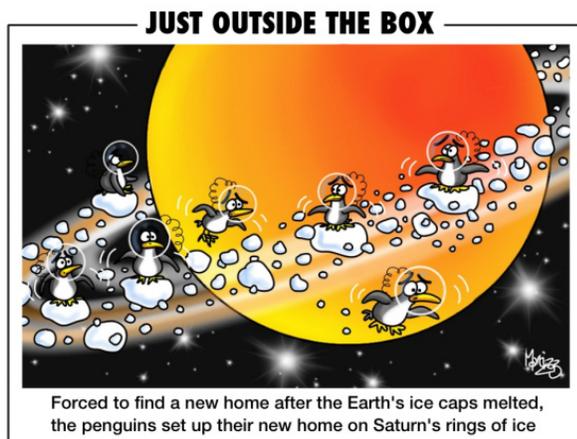
I will start the evening class talking about age of Earth and how we know how old Earth is.

Unless somebody would like to do this instead of a planet or moon: how we think the solar system formed.

https://www.youtube.com/watch?v=u9Nyl_cHJEc

You are going to follow by laying out the solar system planets and moons. To bring some excitement and creativity to the presentation we're going to pitch each body as if you're trying to sell it to the audience or make them want to visit. Make it sound good even if it isn't. ie., put some "spin" on it. If I am looking for a place to visit, vacation or buy I want to see pictures, I want facts, I want excitement. Include pictures throughout the presentation. Make it fun, make it come to life. Another idea: Pretend you're a politician, brag about your strong points, lie about your weak points (oh, wait, politicians don't have weak points), and bash the others.

If there is no info related to an item, say something like, "*scientists are not sure what created the rings around Uranus*"



PLANETS

- Your names and your planet as the intro
- # of planet from the sun, and how many A.U. from the sun (Mercury group will define what an AU is)
- when discovered and by whom; some planets have been known for forever, you would say something like: Mars is visible in the night sky and was known to the ancients.
- origin of the name
- planet diameter (**miles**), and size rank compared to the other planets (1 = largest planet and 8 = smallest)
- how much would 100 pounds weigh on your planet
<http://www.exploratorium.edu/ronh/weight/>
- how many earth days or hours to spin on its axis; rotational period
- how many earth days or years to orbit the sun; orbital period
- how old would you be on your planet
<http://www.exploratorium.edu/ronh/age/>
- does it have moons (if yes, how many)
- does it have rings
- temperature range or average temperature (**in Fahrenheit**)
- talk about the basic make up of the surface and atmosphere
- every planet has been visited by a satellite. Tell us about one or two such visits. Mars: rovers, Jupiter: Juno and Voyager 1 and 2, Saturn: Cassini and Voyager 1 and 2, Uranus and Neptune: Voyager 2

This is where the sales pitch REALLY comes in:

- 2 or 3 oddities or curiosities about the planet: orbit, surface or anything unique or interesting that makes your planet special. Every planet on the list is unique, find the most unique stuff
- cite at least two different sources.... scientists are gathering new info all the time, use sources as current as possible

Moons

- Your names and your moon as the intro
- Planet your moon orbits and how many other moons orbit that planet
- when discovered and by whom
- origin of the name
- diameter (**miles**)
- size rank compared to other moons in the solar system
- distance (**miles**) from its planet and image of your moon's orbit about its planet
- how many days to orbit its planet (orbital period)
- orbital speed (in mph)
- does it have an atmosphere (if yes, what is it made of)
- temperature range or average temperature (**in Fahrenheit**).
- include a picture that shows your moon compared to Earth's moon (its ok if other moons are in the picture)
- how much would 100 pounds weigh on your moon <http://www.exploratorium.edu/ronh/weight/>
- discuss what the moon is made of
- explain how tidal interactions and gravitational pull from other bodies affect your moon
- is the surface "young", what makes it young (in geologic terms a few million years is considered young)
- have we ever sent a satellite to observe it (if yes, name one of the satellites and what it observed)

This is where the sales pitch REALLY comes in:

- 2 oddities: orbit, surface or anything unique or interesting that makes your solar system body special. Every body on the list is unique.. find the craziest stuff you can
- cite at least two different sources.... scientists are gathering new info all the time, use sources as current as possible

be excellent to each other!!

Asteroids, comets meteoroids

Comets: Oort Cloud, Kuiper Belt, Haley, Hale-Bopp (many of the adults may remember its flyby in 1997), Shumaker-Levy, any recent missions to explore, annual meteor showers,

Asteroids: Jupiter's Trojan and Greek asteroids (Lagrange points) and the proposed mission in the early 2020s, why we're interested in these small bodies

Here are some pretty good websites:

www.nineplanets.org/

<https://pds.jpl.nasa.gov/planets/>

<http://airandspace.si.edu/exhibitions/exploring-the-planets/online/solar-system/>

https://www.windows2universe.org/our_solar_system/solar_system.html

Planets

Mercury

Venus

~~Earth~~

Mars

Jupiter

Saturn

Uranus

Neptune

Asteroids, comets
meteoroids

Moons/Satellites

Io

Ganymede

Callisto

Europa

Titan

Enceladus

Dwarf Planet

Pluto

PLANETS

- (2) Your names and your planet as the intro
- (2) when discovered and by whom; some planets have been known for forever... if yours is one of them tell us why
- ~~(2) where the name comes from~~
- (2) # of planet from the sun, and how many A.U. from the sun
- (2) planet diameter (**miles**), and size rank compared to other planets in our solar system (1 will be largest planet and 8 will be smallest)
- (1) gravity compared to earth
- (2) how many earth days or hours to spin on its axis; rotational period
- (2) how many earth days or years to orbit the sun; orbital period
- (2) does it have moons (if yes, how many)
- (2) does it have rings (if yes, what are they made of)
- (2) temperature range or average temperature (**in Fahrenheit**) if the temperature is given in °C, find a conversion site and convert to °F.
- (1) how much would 100 pounds weigh on your planet
<http://www.exploratorium.edu/ronh/weight/>
- (1) how old would you be on your planet
<http://www.exploratorium.edu/ronh/age/>
- (1) orbital speed **in mph**
- ~~(3) of what is it made (terrestrial planets be certain to include surface and atmosphere (if it has one), gas giants talk what is the atmosphere made of and the core (if it has one))~~
- ~~(3) have we ever sent a satellite to observe it (if yes, name one of the satellites and what it observed)~~
- (3) 2 oddities or curiosities about the planet: orbit, surface or anything unique or interesting that makes your planet special. Every planet on the list is unique, find the most unique stuff
- (2) 2 things about your planet that make it uninhabitable for humans
- (2) cite at least two different sources.... scientists are gathering new info all the time, use sources as current as possible
- (7) fonts are readable and contrast with background, spelling is correct, info is accurate and current, lots of pics that relate to your body, voices can be heard and it sounds like you know your stuff.
- (11) selling points