WARM UP

- pg. 402 # 2 & 3

TYPES OF MOTION

Why did it appear to many people as though the night sky was moving?

- Years ago, we believed it was because the universe revolved around us.

- This was because of one of two types of motion our planet exhibits

1. Rotation - a spin of an object around its axis

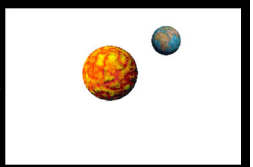
2. Revolution - a rotation around a larger object (an orbit)

REVIEW

We live on the planet Earth, and the Earth is moving two different ways.

1. The Earth is spinning. (Rotation)

2. The Earth travels around the Sun. (Revolution)



ROTATION

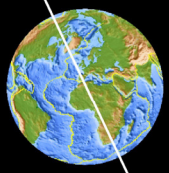
- One complete spin takes 24 hours, meaning we are spinning at 1670 km/h

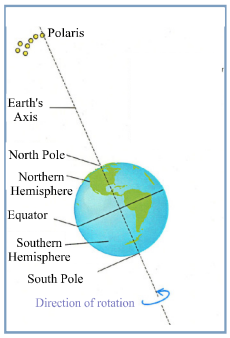
  - Our concept of one day is based on this length of time.

- The Earth's axis is tilted 23.45°

  - Without this, we wouldn't have seasons.

AXIS - An imaginary line from the north pole to the south pole.





What about the other planets? Click Here

As the Earth rotates on its axis, the part of the Earth facing the Sun is experiencing day, and the part away from the Sun is experiencing night.
One rotation of Earth takes 24 hours. There are 24 time zones.

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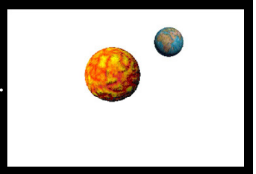
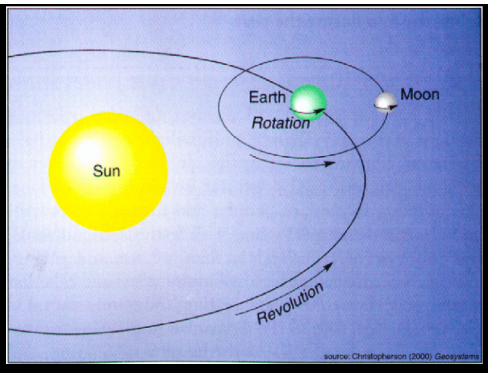


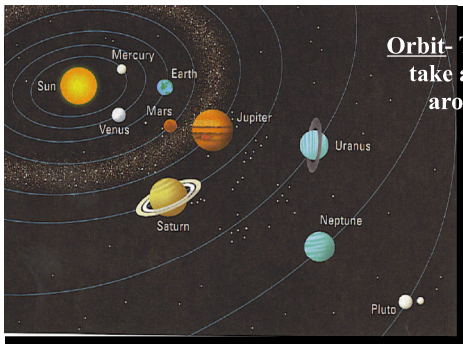
REVOLUTION
- Think of this as one trip around the sun.
- We are orbiting this star at just under 30 km/s

https://www.youtube.com/watch?v=JaG70cJ8vDE



- The Earth and the other planets revolve around the Sun.
- It takes the earth 1 year to revolve around the sun.

- Many think it takes 365 days to complete the trip
  - The exact time is 365.2422 days
  - So, we actually add one day every four years



Orbit- The path planets take as they revolve around the Sun.

The period of time for one revolution around the Sun is called an orbital period.

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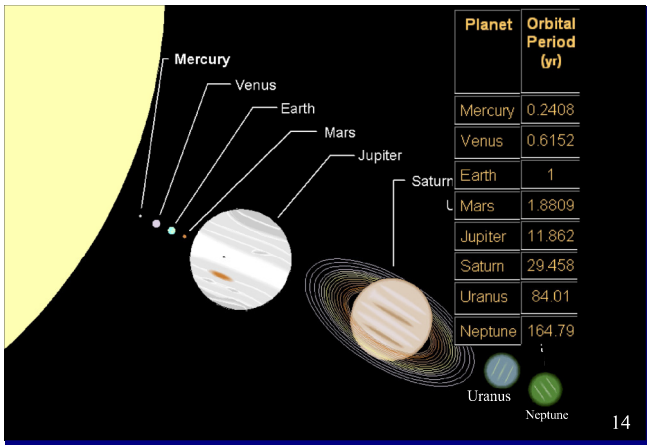

Planet	Orbital Period (yr)
Mercury	0.2408
Venus	0.6152
Earth	1
Mars	1.8809
Jupiter	11.862
Saturn	29.458
Uranus	84.01
Neptune	164.79

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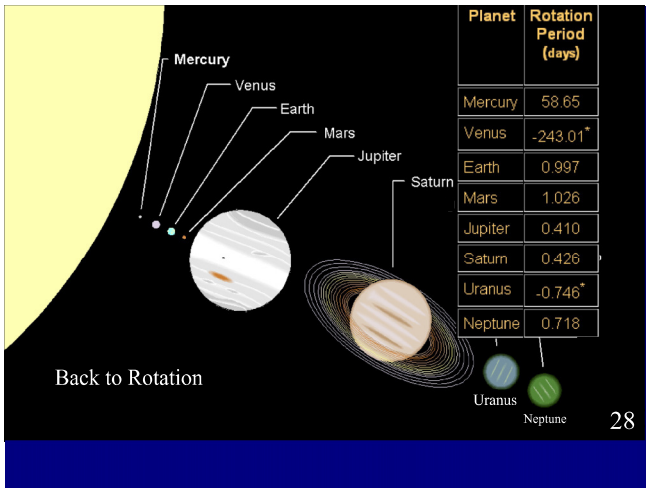

Planet	Rotation Period (days)
Mercury	58.65
Venus	-243.01*
Earth	0.997
Mars	1.026
Jupiter	0.410
Saturn	0.426
Uranus	-0.746*
Neptune	0.718

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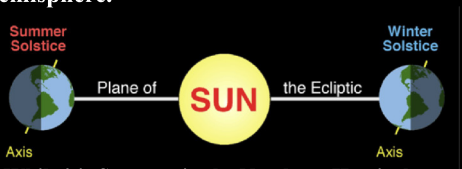
During the Summer, we receive the Sun's energy directly.The sun shines more on the northern hemisphere.

During the Winter, we receive the Sun's energy at an angle. The sun shines more on the southern hemisphere



While it's Summer in the Northern Hemisphere, it's Winter in the Southern Hemisphere.

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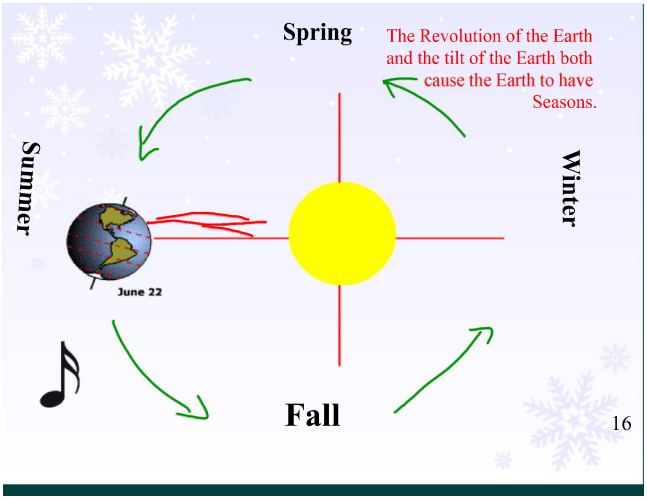

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Solstice represents the shortest and longest periods of daylight

Winter solstice - shortest period of daylight (Northern hemisphere - *Dec. 21*)

Summer solstice – longest period of daylight (Northern hemisphere - *June 21*)

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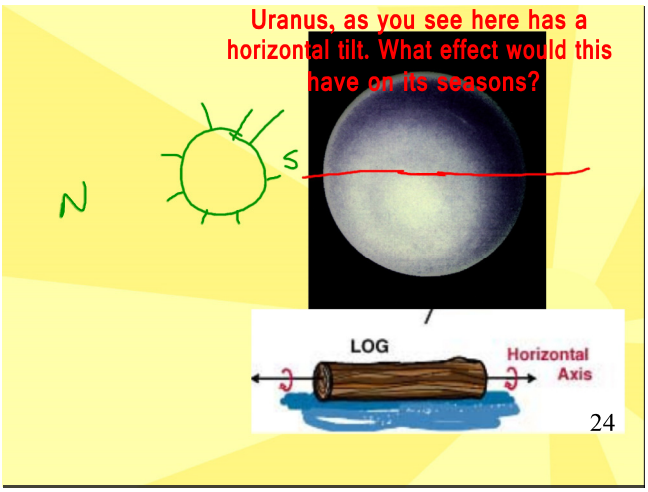
The Earth's seasons are caused by?
A) The Earth's tilt
B) The Earth's Rotation
C) Proximity to the Sun
D) The Earth's Revolution
Click Best Answer
21
H.J. SIMPSON


It takes the Earth how long to make one Revolution?
Click Best Answer
A) One day
B) One Week
C) One Month
D) One Year
22


If it's winter in New Brunswick, then
would be Summer in which contine
1) North America
2) Europe
3) Australia
4) Whoville
Click Best Answer
23


Uranus, as you see here has a horizontal tilt. What effect would this have on its seasons?
N
S
LOG
Horizontal Axis
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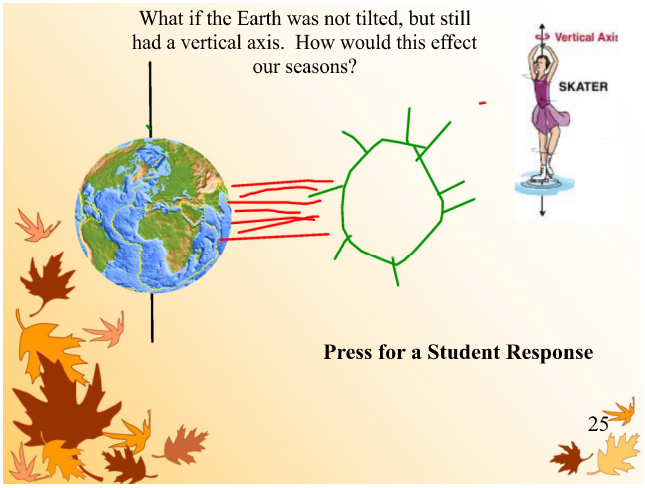

Assignment for Today

Read section 13.10 on pages 418-419.
Questions from Understanding concepts 1, 2(omit 2c), 4,5.

Complete the challenge - which planet would be suitable for possible colonization? Give reasons for your choice. How will the planet conditions need to be considered in the design of your space colony? What would need to be done to make life sustainable on this planet?

Page 419

1) a) Scientist believe that Mercury has no atmosphere.

b) Mercury being the closest planet to the sun may not contain an atmosphere because of this reason. The sun's heat would destroy and gases that existed.

2) a) Venus and Mars seems to be two planets that share some similarities with Earth. If you compare size Venus and Earth are approximately the same size. If you look at Mars its rotational period is 24 hr 39 min and Earth's is 24 hrs. All three planets have nitrogen in it atmosphere.

b) The planets that are the least similar to Earth are Jupiter, Saturn, Uranus and Neptune. Each of these four planets are extremely large compared to earth, their orbital periods take years and their temperatures are extremely cold.

c) Pluto is no longer considered a planet and is now known as a dwarf planet

4) The atmosphere on the four larger planets would not support lif because living organism need oxygen and nitrogen to survive.