

**Table 1** Comparing Planets and Stars

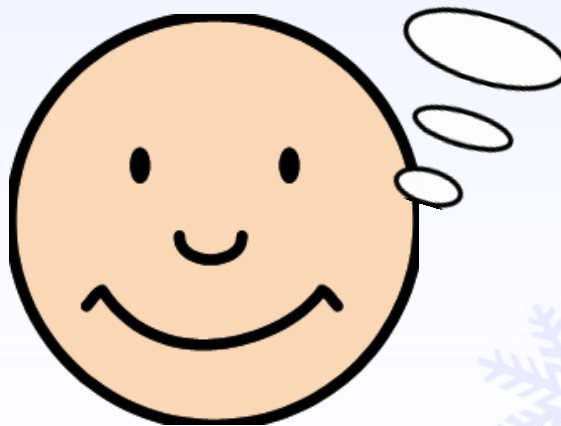
Feature	Planet	Star
location	in the solar system	far beyond the solar system
distance from Earth	fairly near	very far
real size	smaller than most stars	usually larger than planets
reason we see object	reflects light from the Sun	emits its own light
surface temperature	usually cool or very cold	very hot
what object is made of	usually rocks or gases	gases under high pressure and temperature
observable feature	does not appear to twinkle	appears to twinkle
long-term observable feature	very slowly wanders through constellations	appears to move through sky as part of a constellation

I want you to think about this question. What ways are you moving right now?

*Rotating*

*Revolving*

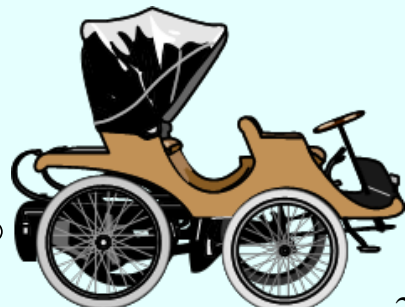
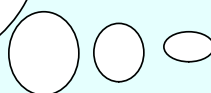
Write down student answers.

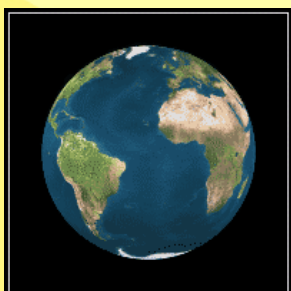


We live on the planet Earth, and the Earth is moving two different ways.

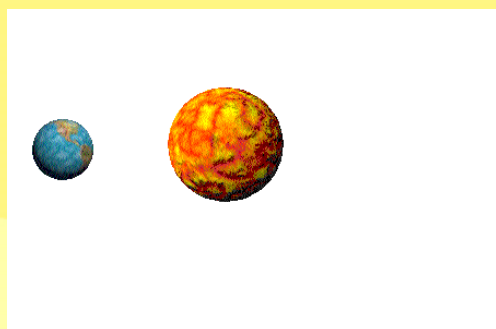


Let's see the two types of Earth's motions.





The Earth is spinning.



Revolution 

The Earth travels around the Sun.

Let's start with the Earth Spinning.<sup>4</sup>

**Vertical Axis**

**SKATER**

**EARTH**

**Axis 23.5° Angle**

**To the Sun Ecliptic**

**Tilted**

**LOG**

**Horizontal Axis**

Look!!! The Earth is tilted on its axis

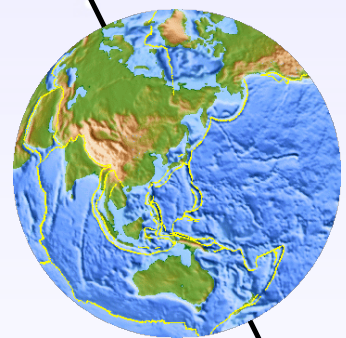
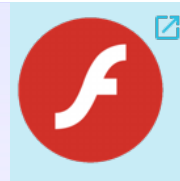
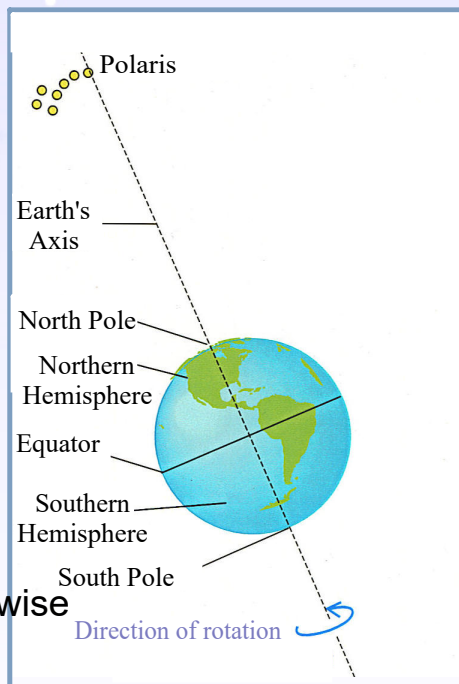
**Axis- An imaginary line from the north pole to the south pole.**

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(Spinning)  
**Rotation- The movement of an object around its axis.**

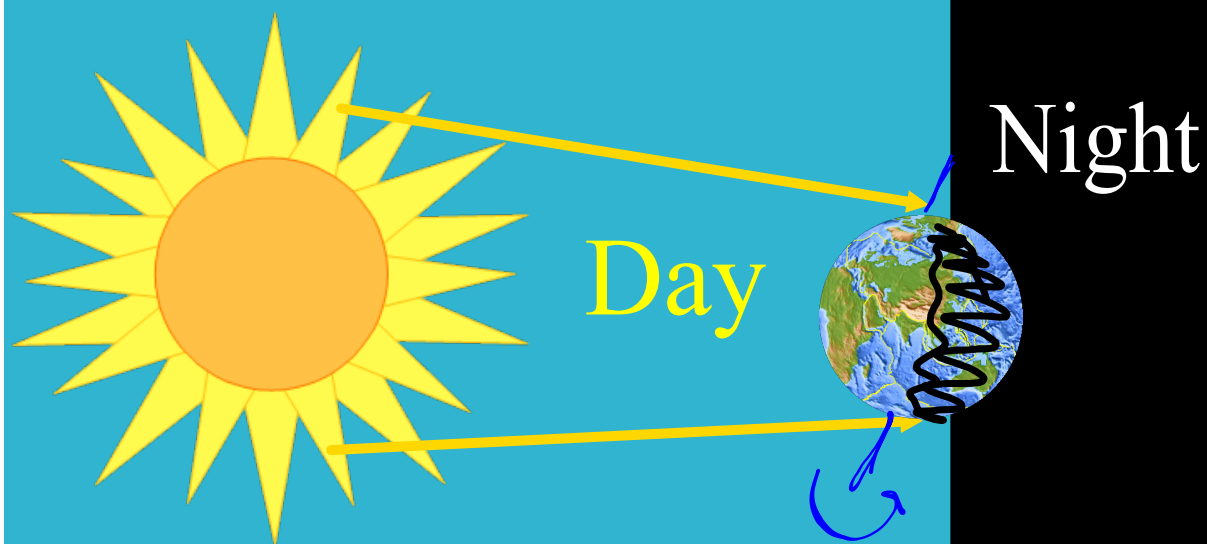
→ 24 hours

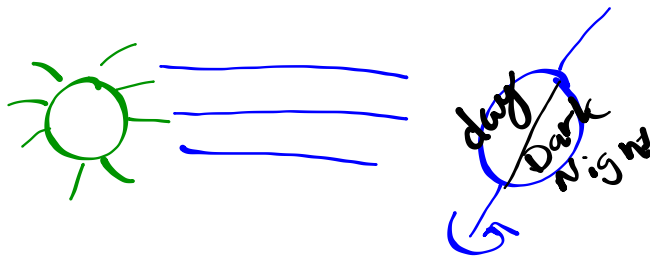
Earth rotates Counter clockwise



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.**









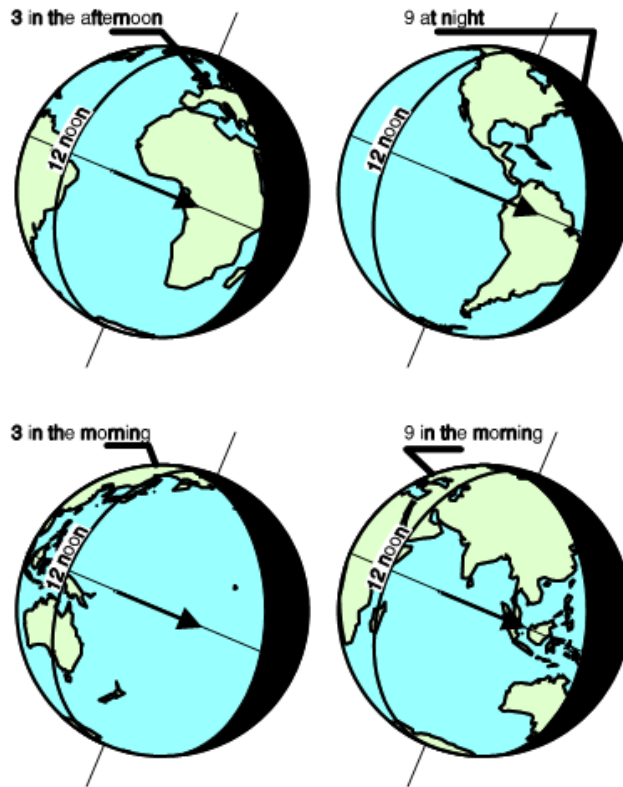
Use the Spotlight to again show day and night. By placing the spotlight on the line, we can see how the Earth experiences day and night.

[https://www.youtube.com/watch?v=lz4KtSy\\_81k](https://www.youtube.com/watch?v=lz4KtSy_81k)



Put Here

**That means that there are 24 time zones on the Earth.**  
**If I try to phone my friend in China at six o'clock at night here, it is six in the morning for him.**



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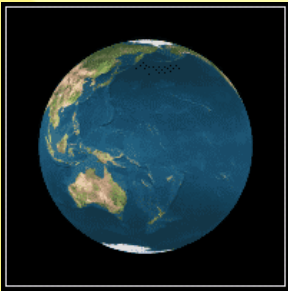
Miramichi

Japan

7:29:09 <sup>AM</sup> <sub>PM</sub> set 11 hours ahead

Philadelphia

7:32:44 <sup>AM</sup> <sub>PM</sub> set one hour behind



The Earth is spinning.



The Earth travels around the Sun.

Now let's try the Earth going around the Sun.

# REMEMBER

**Vertical Axis**

**SKATER**

**EARTH** Axis  $23.5^\circ$  Angle

To the Sun  
Ecliptic

**LOG** Horizontal Axis

Yup! It's still tilted. How might this effect the Earth?

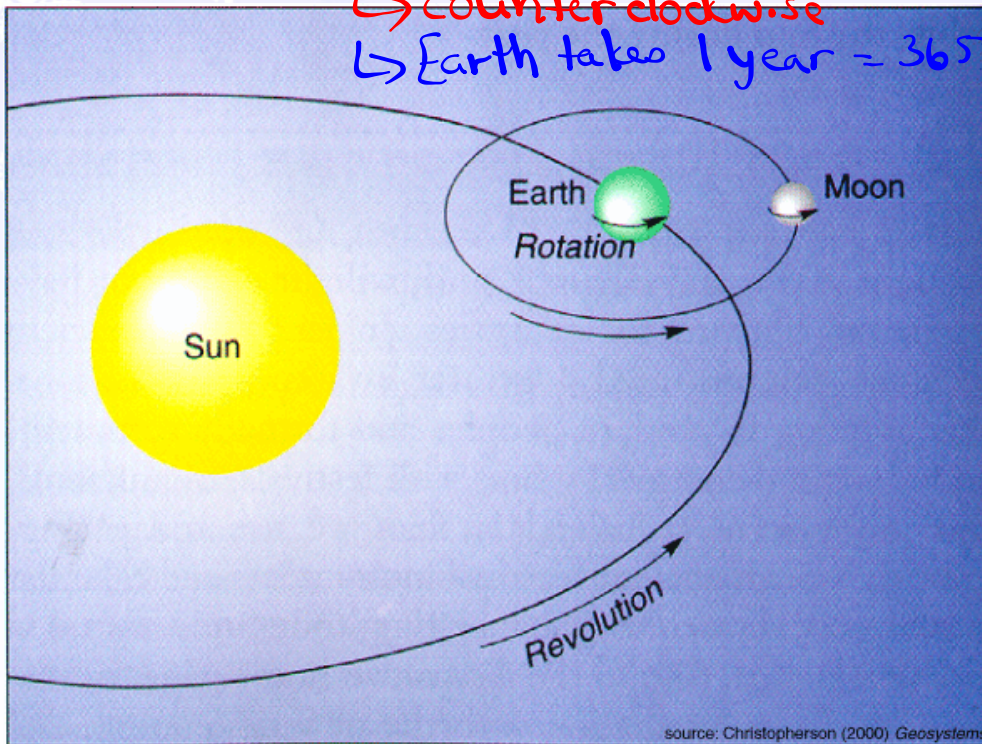
**Axis- An imaginary line from the north pole to the south pole.**

Revolution-The movement of an object around another.

(earth goes around sun)

↳ counter clockwise

↳ Earth takes 1 year = 365 days



source: Christopherson (2000) Geosystems

<https://www.youtube.com/watch?v=EXasopxAFoM>



## Attachments

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student response no tilt.avi

seasons.avi

Uranus student response(4).avi