

The Autumn Equinox



The Autumn Equinox (Student Video)

Sometimes, planetary rotation requires a good visual to truly make sense. Have students watch this [6-Minute Autumn Equinox Video Lesson](#) on your projector for a quick, zero-prep introduction to the concept.

While students watch, have them fill out the **Video Companion Organizer**. This interactive, four-column layout gives them space to record information about the equinox. It fits perfectly into an interactive notebook with plenty of room for illustrations and labels!

Teachers can download the free organizers and activities that go with this lesson at:

<https://bookunitsteacher.com/wp/?p=166>

Activity 2: The Autumn Equinox (Video Organizer Companion)

Select between the organizer and the guided notes.

Assembling the Organizer

1. Print the organizers.

- Print the organizers either directly from this packet.

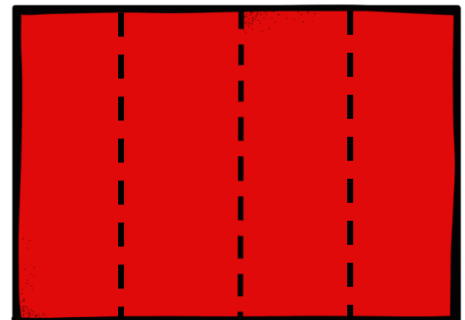


2. Using the Organizers:

- Have students watch the instructional video that goes with the organizer. After viewing, have students complete the organizer.

3. Fold the Organizer.

- This organizer requires no cutting or coloring. I recommend telling students that they can color the blackline drawings at home if they wish to, but it is not necessary.
- The organizer folds like a fan. Make sure the first fold is under, so the definitions are on top and will be visible when flipping through the interactive notebook.



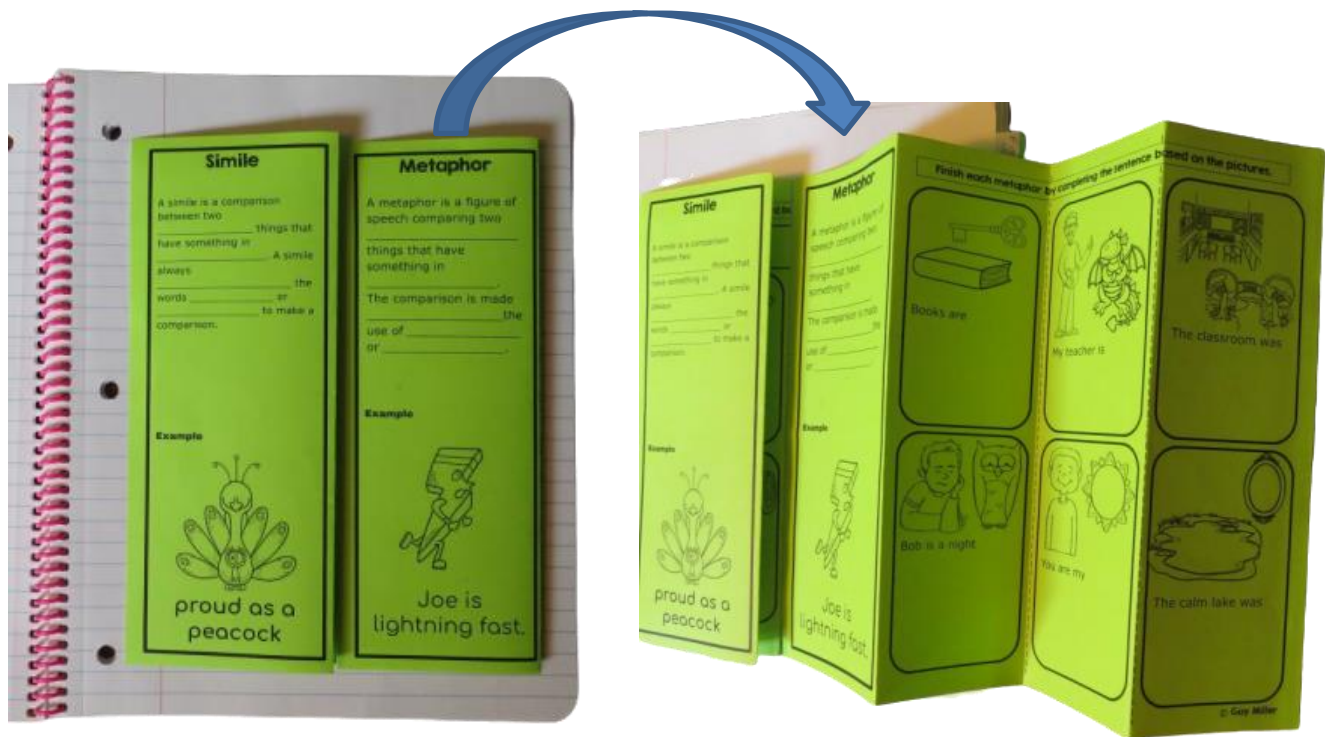
4. Gluing the Organizer:

- Flip the organizer over with the text box containing the definition face down. Have students place a single line of white school glue down the back right-hand side of the organizer. Glue the organizers two to a page (four to an open notebook). See photos on the next page.



I love interactive notebooks. I have found students return again and again to their notebooks to find rules and examples. The only problem is foldable organizers take a lot of time to create. Because of this, I played around with paper to come up with a design that is quick and easy for students to make.

Note: The organizers in the photos are for demonstration purposes only. Not all are included in this download.



Creating the Foldable Organizers in the Unit

Print

Pun

Fill in the blanks to complete the definition of pun.

A pun is a _____, the different _____ of a word or the fact that there are words which _____ alike but _____ meanings.

Example:

A chicken farmer's favorite car is a _____.

She had a photographic memory but never developed it.

Find the word or phrase in each sentence that makes it a pun. Under the sentence, write the word and then explain its two meanings.

 I am a baker because I knead the _____. Dough - _____ OR _____	 It's _____ to write with a broken pencil. Pointless - _____ OR _____	 What do you call a sleeping bull? ----- A bulldozer. Dozer - _____ OR _____
 I was struggling to figure out how lightning works when it struck me. Struck - _____ OR _____	 What was the reporter doing at the ice cream shop? ----- Getting the scoop! Scoop - _____ OR _____	 What do you get from a pampered cow? ----- Spoiled milk. Spoiled - _____ OR _____

Fan Fold

Pun

Fill in the blanks to complete the definition of pun.

A pun is a _____, the different _____ of a word or the fact that there are words which _____ alike but _____ meanings.

Example:

A chicken farmer's favorite car is a coupe.

Find the word or phrase in each sentence that makes it a pun. Under the sentence, write the word and then explain its two meanings.

 I am a baker because I knead the _____. Dough - _____ OR _____	 It's _____ to write with a broken pencil. Pointless - _____ OR _____	 What do you call a sleeping bull? ----- A bulldozer. Dozer - _____ OR _____
 I was struggling to figure out how lightning works when it struck me. Struck - _____ OR _____	 What was the reporter doing at the ice cream shop? ----- Getting the scoop! Scoop - _____ OR _____	 What do you get from a pampered cow? ----- Spoiled milk. Spoiled - _____ OR _____

Glue

Fill in the blanks to complete the definition of pun.

A pun is a _____, the different _____ of a word or the fact that there are words which _____ alike but _____ meanings.

Example:

A chicken farmer's favorite car is a _____.

She had a photographic memory but never developed it.

Find the word or phrase in each sentence that makes it a pun. Under the sentence, write the word and then explain its two meanings.

 I am a baker because I knead the _____. Dough - _____ OR _____	 It's _____ to write with a broken pencil. Pointless - _____ OR _____	 What do you call a sleeping bull? ----- A bulldozer. Dozer - _____ OR _____
 I was struggling to figure out how lightning works when it struck me. Struck - _____ OR _____	 What was the reporter doing at the ice cream shop? ----- Getting the scoop! Scoop - _____ OR _____	 What do you get from a pampered cow? ----- Spoiled milk. Spoiled - _____ OR _____

Hyperbole

Fill in the blanks to define hyperbole.

Hyperbole is a figure of speech in which _____ is used for emphasis or it may be confused with a _____ because it often compares two items. The difference is that with a hyperbole the comparison is an _____.

Example



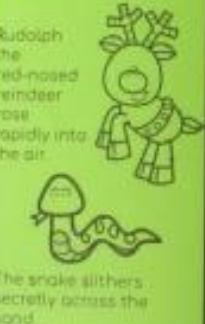
Alliteration

Fill in the blanks to define alliteration.

Alliteration is when several words in a row begin with the _____.

[You may have words in between alliterated words that don't start with the same _____ as long as they don't break the sound pattern.]

Examples



Assonance

Fill in the blanks with words to show the definition of assonance.

Assonance is the repetition of _____ words. It is used to reinforce the meanings of words or to let the _____ that is important and not the _____ used.

Example



Onomatopoeia

Fill in the blanks with words to show the definition of onomatopoeia.

Onomatopoeia is the _____ of natural _____ in word form. These words help us form mental _____ about the _____ or _____ that are described.

Examples



The Autumn Equinox

1. What Is the Autumn Equinox?

2. Why Does Autumn Happen?

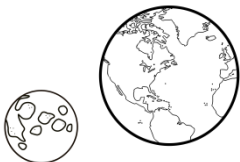
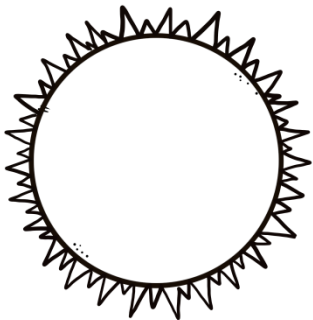
Earth is tilted at _____ degrees.

After the Autumn Equinox, the _____ tilts

away from the Sun.

This causes _____

Autumn begins in the _____ Hemisphere.



3. What Changes in Nature?

List **three** things that begin to change after the Autumn Equinox.



4. Cultural Connections

People around the world celebrate the Autumn Equinox.

Write one tradition or celebration mentioned in the video.

5. Fun Sun Fact

Choose **one** interesting fact about the Sun from the video and write it here.

6. Quick Sketch: Earth's Tilt

Draw Earth and the Sun.

Show Earth's **23.5° tilt** and label the **Northern Hemisphere**.

7. What Happens on the Exact Day?

Fill in the blanks:

The Sun rises due _____ and sets due _____.

Day and night are about _____ each.

8. Why is the Autumn Equinox important for plants, animals, or people?



The Autumn Equinox

1. What Is the Autumn Equinox?

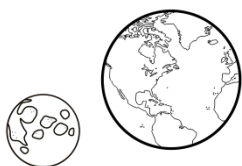
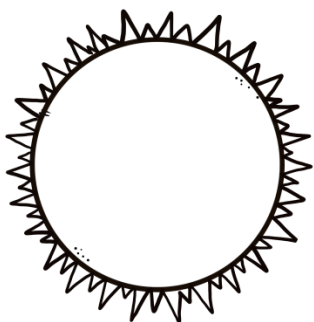
The Autumn Equinox is the day when daylight and nighttime are almost exactly equal — about 12 hours each.

2. Why Does Autumn Happen?

Earth is tilted at **23.5** degrees. After the Autumn Equinox, the **Northern Hemisphere** tilts away from the Sun.

This causes **weaker sunlight**, **shorter days**, and **cooler temperatures**.

Autumn begins in the **Northern Hemisphere**.



3. What Changes in Nature?

List **three** things that begin to change after the Autumn Equinox.

Possible answers:

- Leaves change color.
- Days get shorter.
- Shadows grow longer.
- Temperatures drop.
- Animals begin migration.
- Plants start preparing for winter.



4. Cultural Connections

People around the world celebrate the Autumn Equinox.

Write one tradition or celebration mentioned in the video.

Possible answers:

- Harvest festivals
- Moon festivals
- Seasonal celebrations
- Traditions marking the change in daylight

5. Fun Sun Fact

Choose **one** interesting fact about the Sun from the video and write it here.

Possible answers:

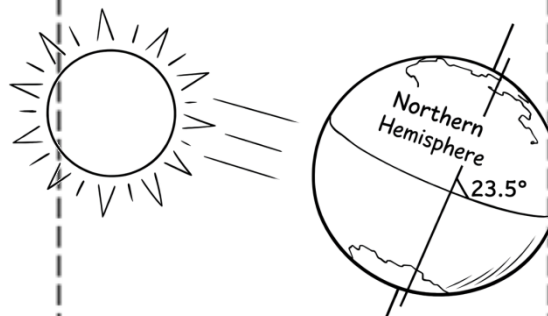
- The Sun is 4.6 billion years old
- Light takes 8 minutes and 20 seconds to reach Earth
- The Sun is 960,000 times bigger than Earth
- The Sun flips its magnetic poles every 11 years
- The Sun rotates at different speeds at the equator and poles

6. Quick Sketch: Earth's Tilt

Draw Earth and the Sun.

Show Earth's **23.5° tilt** and label the **Northern Hemisphere**.

Teacher key: Earth drawn with a 23.5° tilt, Sun on one side, Northern Hemisphere labeled.



7. What Happens on the Exact Day?

Fill in the blanks:

The Sun rises due **east** and sets due **west**.

Day and night are about **12 hours** each.

8. Why is the Autumn Equinox important for plants, animals, or people?

Possible answers:

- It helps plants know when to slow down for winter.
- Animals begin migration or food storage.
- People celebrate harvests and seasonal traditions.
- It marks the official start of autumn.



6 Hands-On Teaching Activities for the Equinox

Bring the equinox to life with these engaging, classroom-tested activities that get students thinking like real scientists:

Here are six hands-on activities that bring the equinox to life.

1. The Shadow Tracking Experiment

The equinox is hands-down the best day of the year to study shadows because the Sun rises due east and sets due west. Have students head outside to measure the length and direction of their shadows in the morning, midday, and afternoon. By graphing the changing angles, Earth's tilt becomes instantly visible.

2. Why Leaves Change Color Investigation

Give students a collection of autumn leaves to examine. Have them sketch the details, identify areas where the green is actively fading, and write a scientific explanation detailing how chlorophyll breaks down when daylight shrinks.

3. Daylight Graphing Activity

Turn your science lesson into a cross-curricular math connection. Have students research and graph the exact sunrise and sunset times for your local coordinates across three weeks: the week before, the week of, and the week after the equinox. The resulting line graph vividly illustrates daylight shrinking day by day.

4. Sun Facts Mini-Poster

Keep the core solar science alive by having students choose one of the "Interesting Sun Facts" below to illustrate on a mini-poster, complete with labels, arrows, and a brief caption explaining the science behind the fact.

5. Equinox around the World Map Project

Print out a blank world map and have students research and label various global celebrations such as the Mid-Autumn Festival in China, Michaelmas in the UK, or Mabon traditions. It's a fantastic way to blend geography with Earth science.

6. The Paper Plate Earth-Tilt Model

Grab a few cheap paper plates and pencils. The paper plate represents the Earth (complete with a drawn-on 23.5° axis line), and the pencil pushes through the center to act as the axis. Using a bright sticky note on their desk as the Sun, students rotate their plates around the "Sun" to physically model the difference between equinoxes and solstices.

FAQ: Autumn Equinox

What is the Autumn Equinox?

It is the specific day of the year when daytime and nighttime are almost perfectly equal—lasting about 12 hours each.

Why do the days get shorter after the equinox?

Because the Northern Hemisphere begins to tilt away from the Sun, causing solar rays to strike at an angle and shorten our period of daylight.

Does the equinox happen everywhere?

Yes! It occurs simultaneously across the entire planet, though it marks the start of spring for our friends in the Southern Hemisphere.

What makes the exact day unique?

On the equinox, the Sun rises precisely due east and sets precisely due west, making it an ideal day for compass and shadow navigation.

How does the equinox impact nature?

The drop in light signals plants to change colors and go dormant, while triggering animals to begin migration, food storage, and winter preparation.

Interesting Facts about the Sun



1. **A Cosmic Senior:** The Sun is approximately 4.6 billion years old!



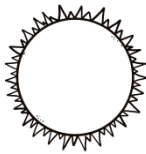
2. **The Yellow Dwarf:** Compared to the giant stars in the universe, our Sun is a medium-sized star known as a Yellow Dwarf.



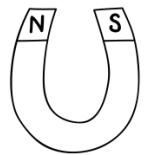
3. **Mind-Boggling Scale:** The Sun is so massive that you could fit about 960,000 Earths inside it.



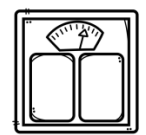
4. **A Cosmic Commute:** Sunlight doesn't hit us instantly; it takes 8 minutes and 20 seconds to travel through space to Earth.



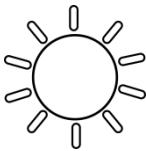
5. **Uneven Rotation:** Because it is made of gas, the Sun rotates faster at its equator than it does at its north and south poles.



6. **The Magnetic Flip:** Every 11 years, the Sun undergoes a major solar cycle in which its magnetic poles flip.



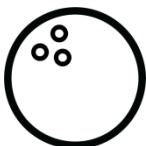
7. **Extreme Gravity:** The Sun's gravity is intense. A 150-pound person would weigh over 4,000 pounds if they tried to stand on it!



8. **Growing Brighter:** The Sun is slowly burning hotter and getting about 10% brighter every billion years.



9. **Tilt Over Distance:** Reminder—Earth is actually closest to the Sun in January! It is our planet's tilt, not its distance, that creates our seasons.



10. **A Near-Perfect Ball:** The Sun is the closest thing to a perfect sphere ever discovered in nature.

Sun Organizer

Instructions for Making the Organizer

Three versions of this organizer are offered: one with blanks for students to write their own sentences; one with the sentences provided but with blank spaces for students to write in key words; and one with the answers provided. The third copy of the organizer may be used as an answer key, for differentiated instruction, for students who were absent during instruction, or if you wish for the students to have the sentences already completed.

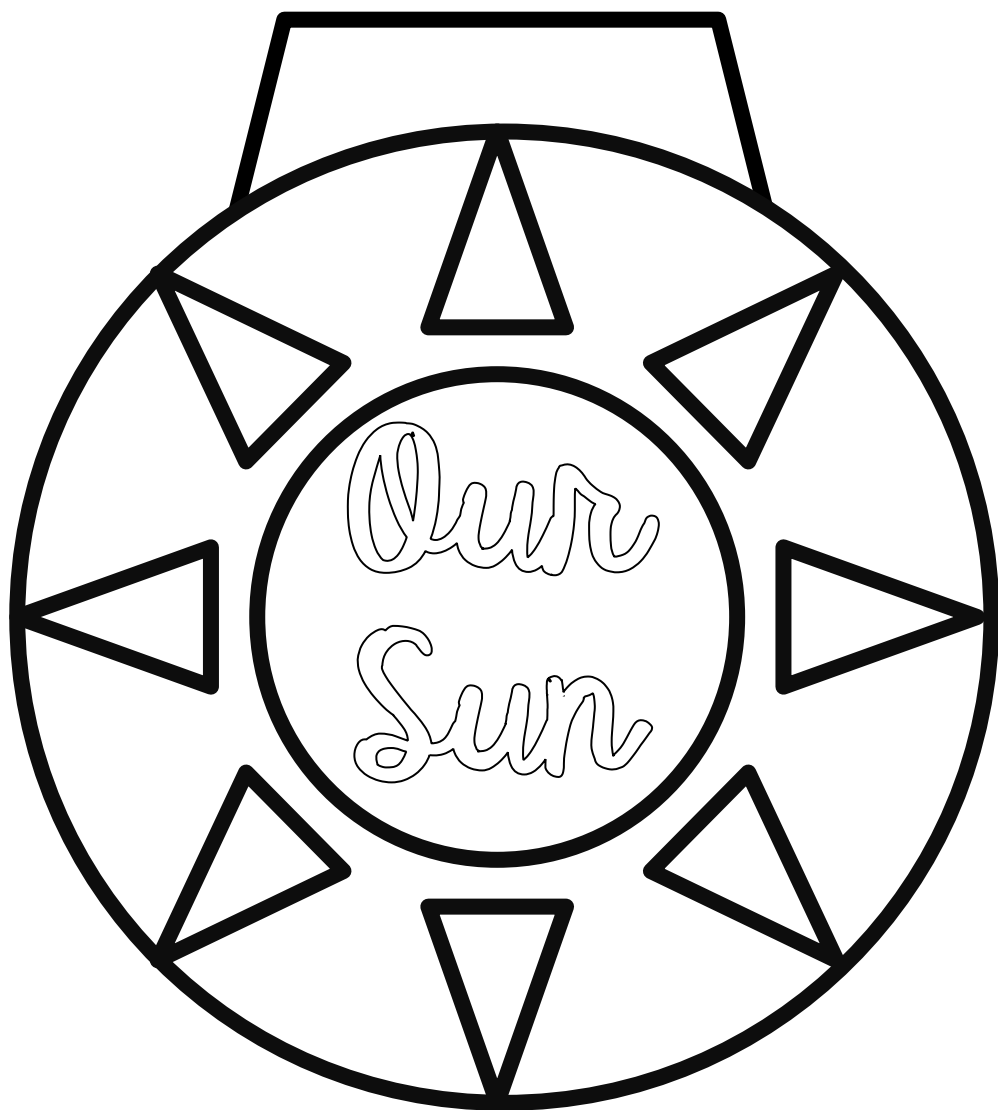
- Print the organizer. This organizer looks great printed on yellow paper.

- Have students cut out the pages.

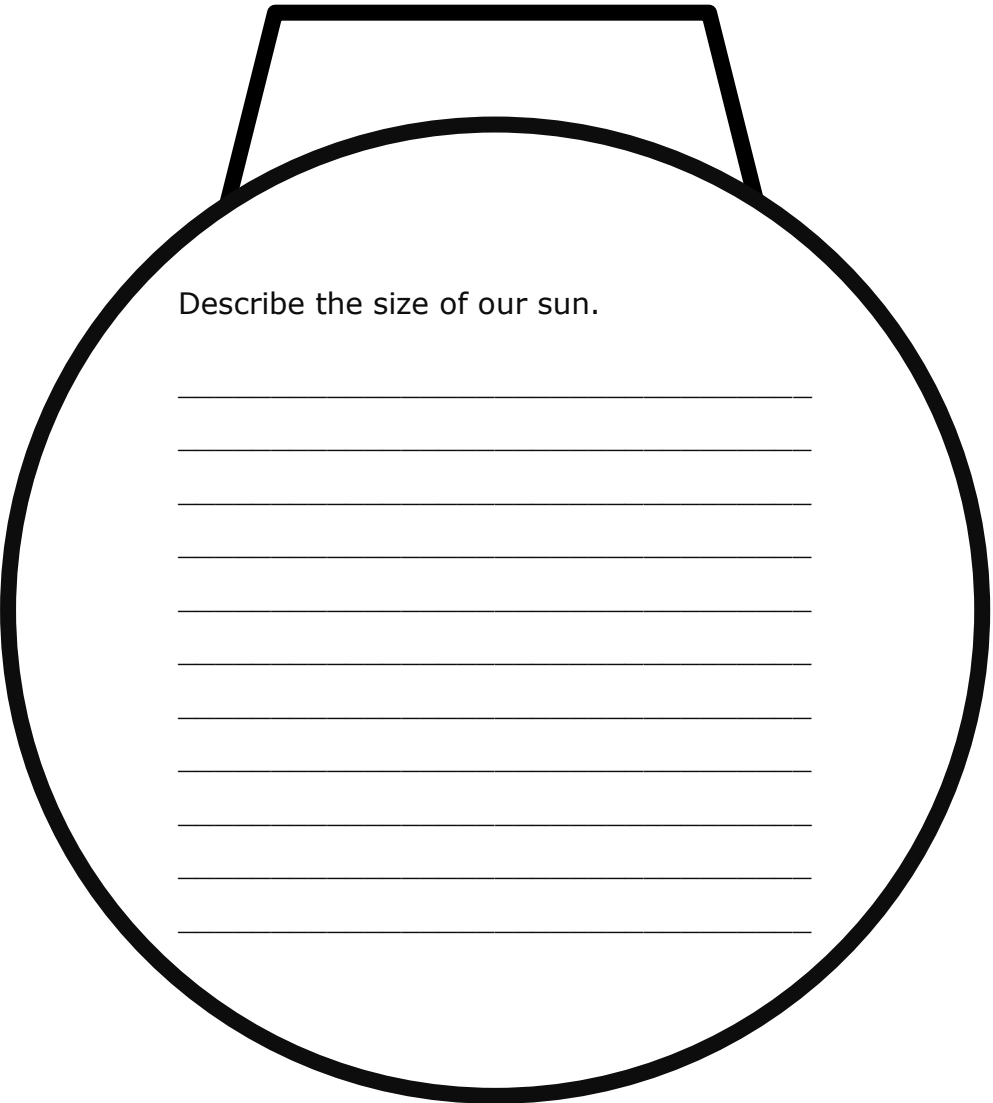


- Students should fill in the requested information.
- Fasten the pages together on the top tab. If you use a brad, the pages will twist apart as pictured below. You can also staple or glue the pages together on the tab area. [Note: After the cover which must come first, there is not a definite order to the pages; however, you might wish for all students to assemble their books in the same sequence to make locating information easier.]

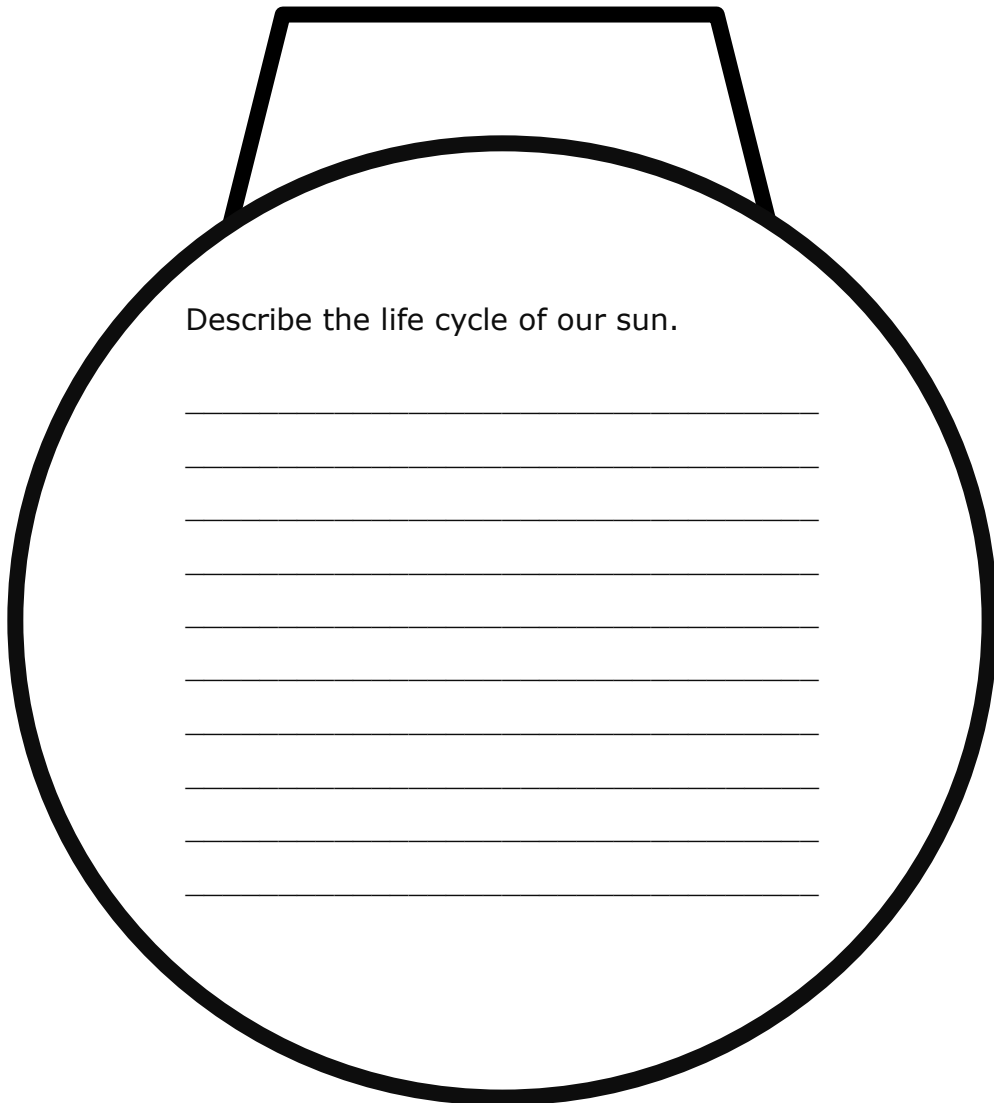




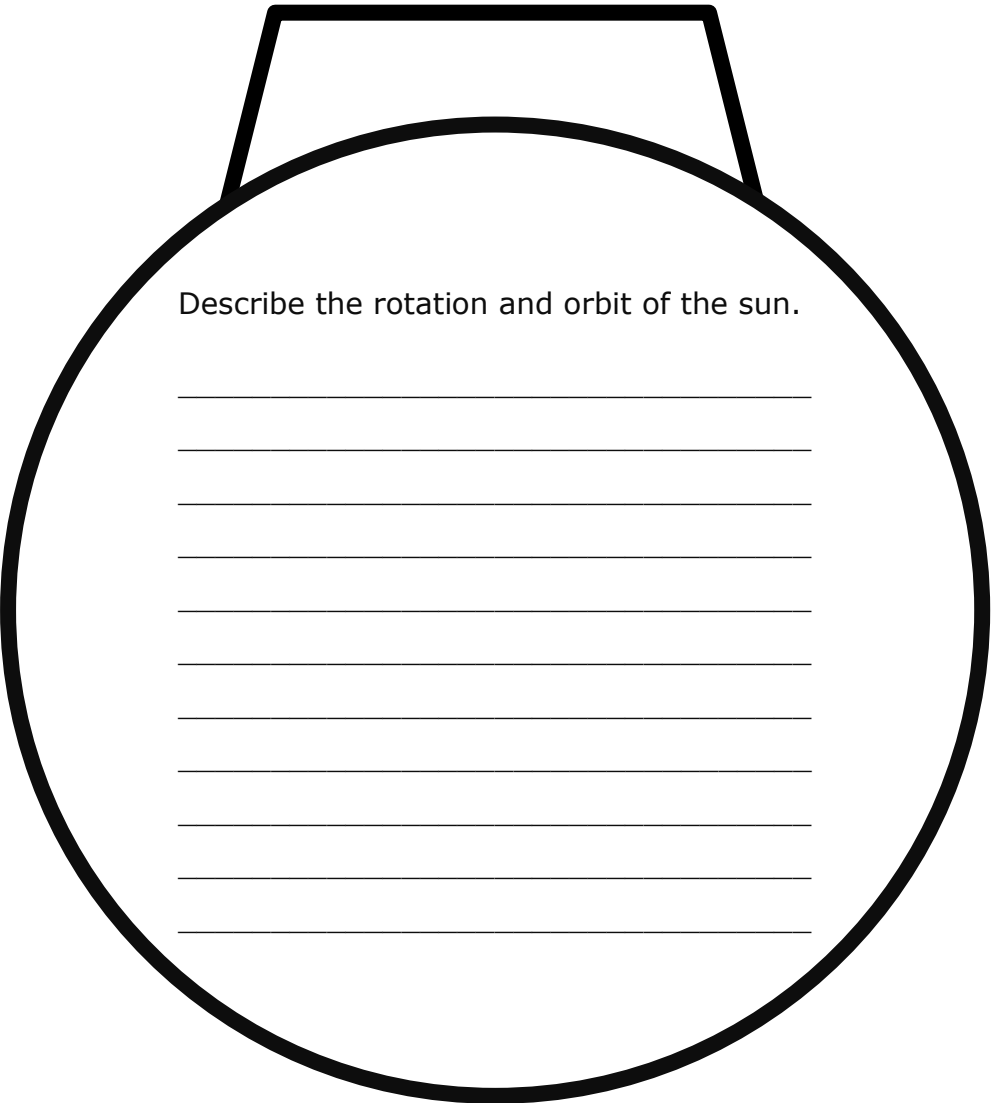
Describe our sun by telling its classification, age, and temperature.



Describe the size of our sun.



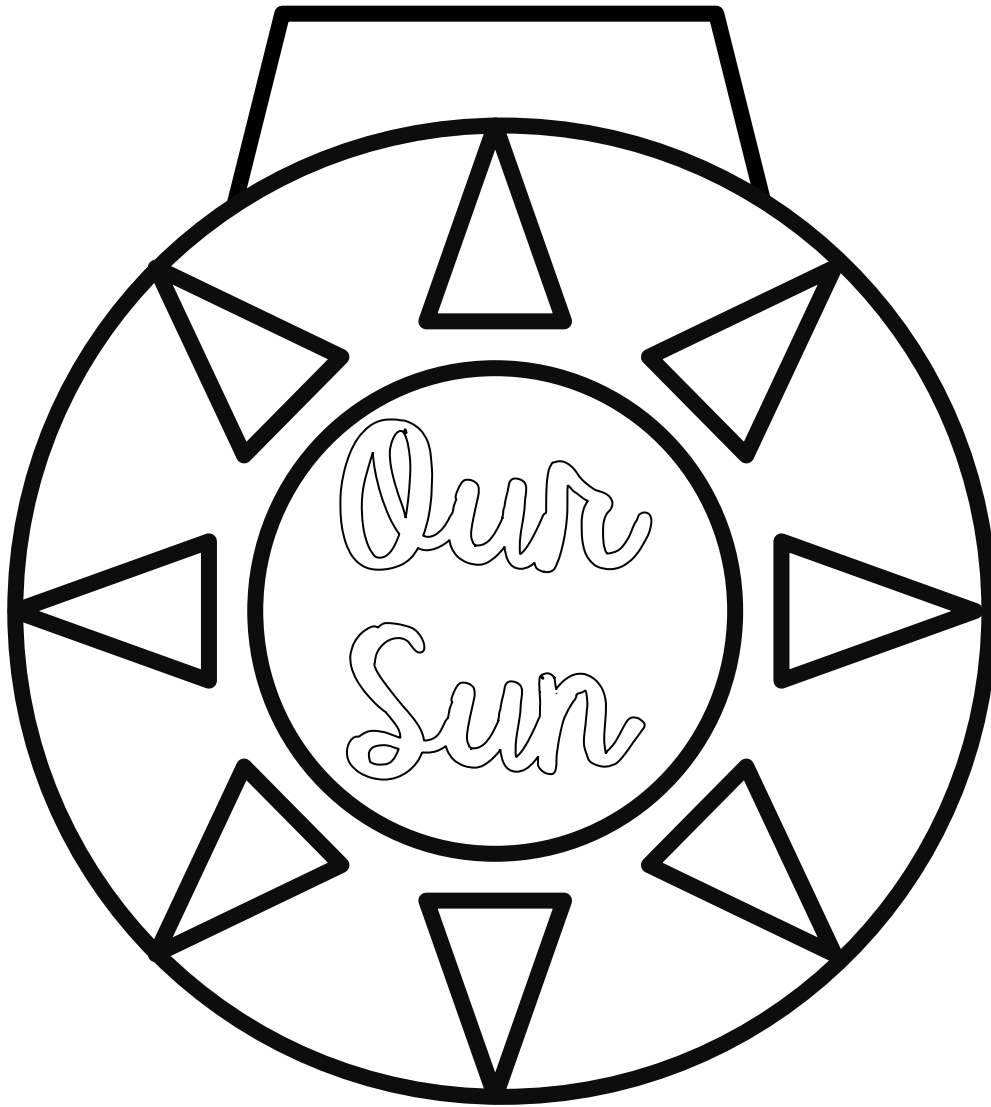
Describe the life cycle of our sun.



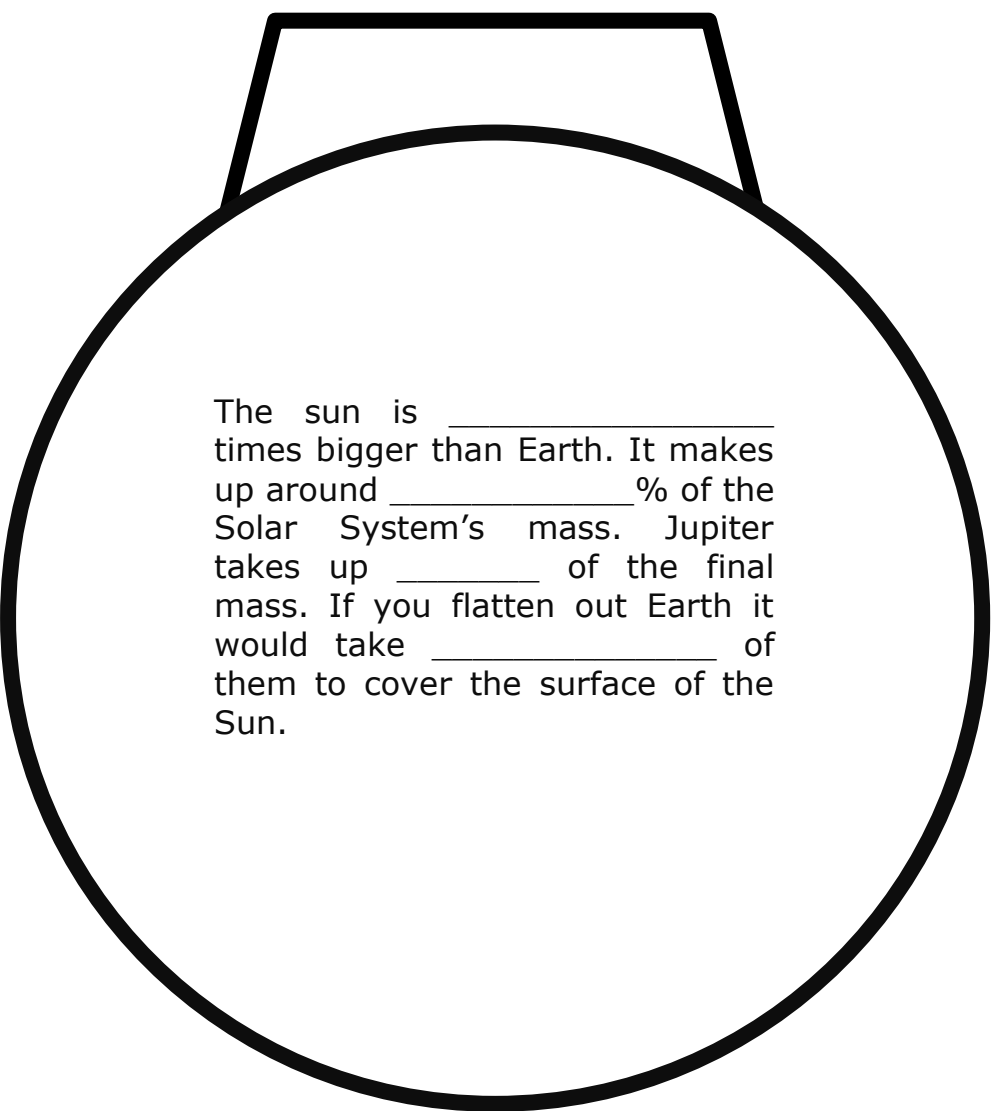
Describe the rotation and orbit of the sun.



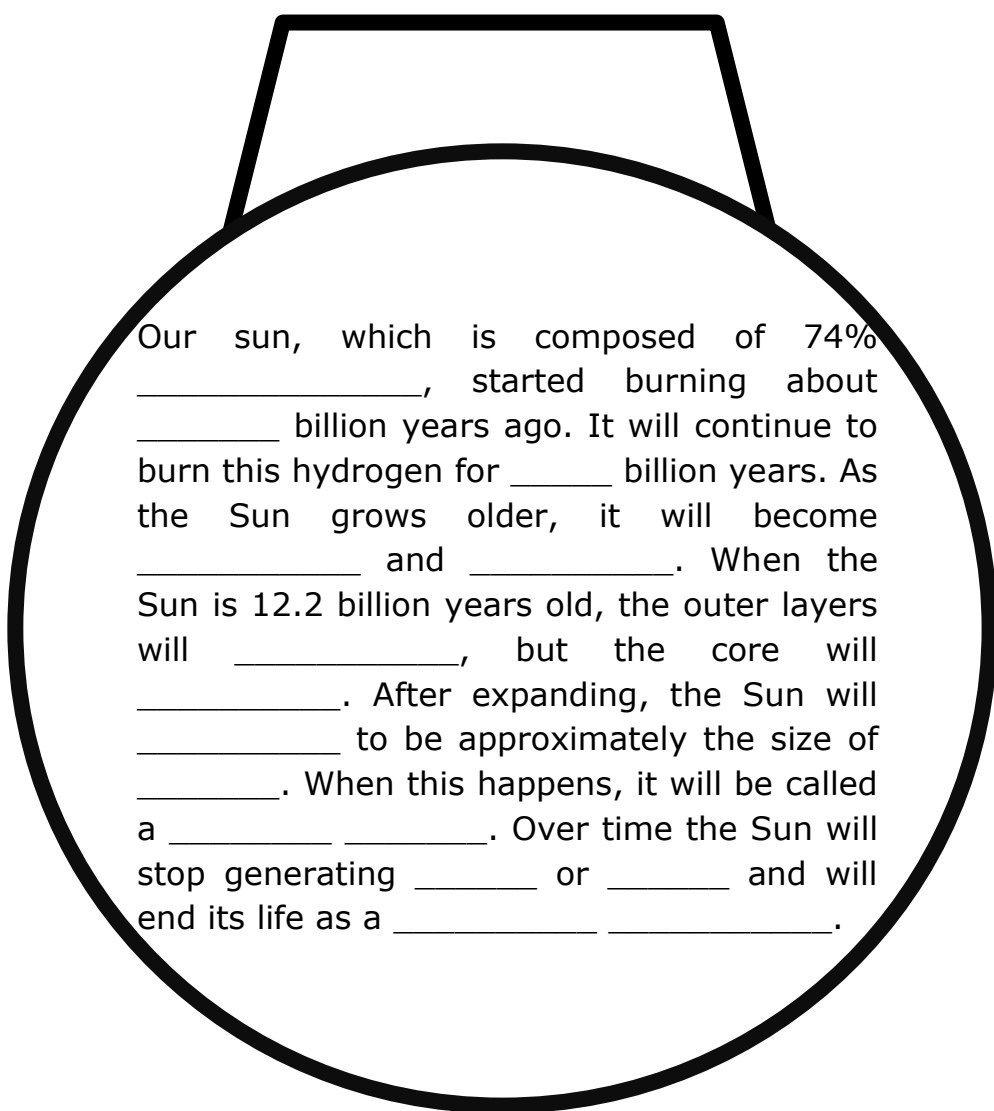
Describe what will happen to Earth as the sun expands.



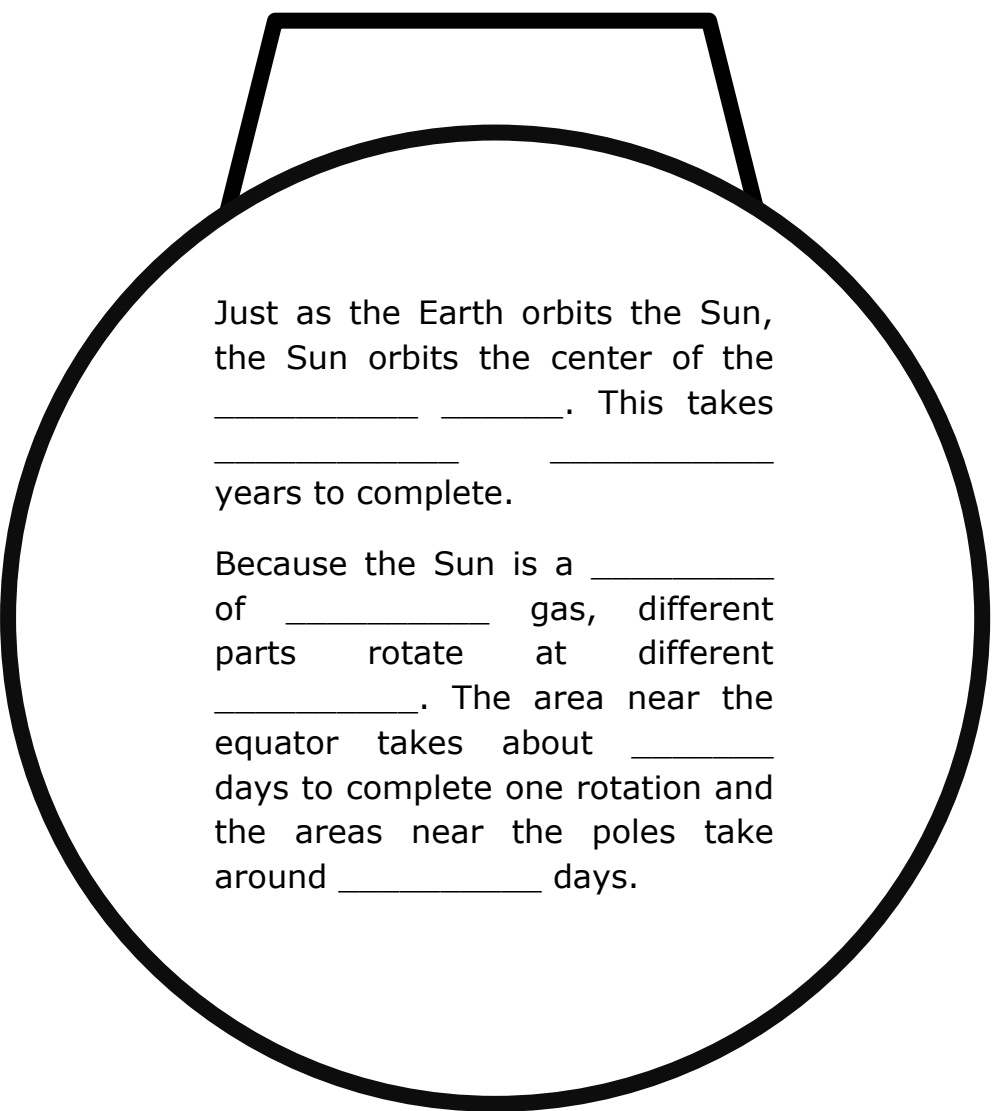
Our sun is _____
_____ years old. It is a
_____ with a
diameter _____ of
_____ kilometers. The surface
temperature is _____
degrees Fahrenheit (_____
degrees Celsius), and its core is
around _____ million degrees
Fahrenheit (_____
degrees Celsius).



The sun is _____ times bigger than Earth. It makes up around _____% of the Solar System's mass. Jupiter takes up _____ of the final mass. If you flatten out Earth it would take _____ of them to cover the surface of the Sun.

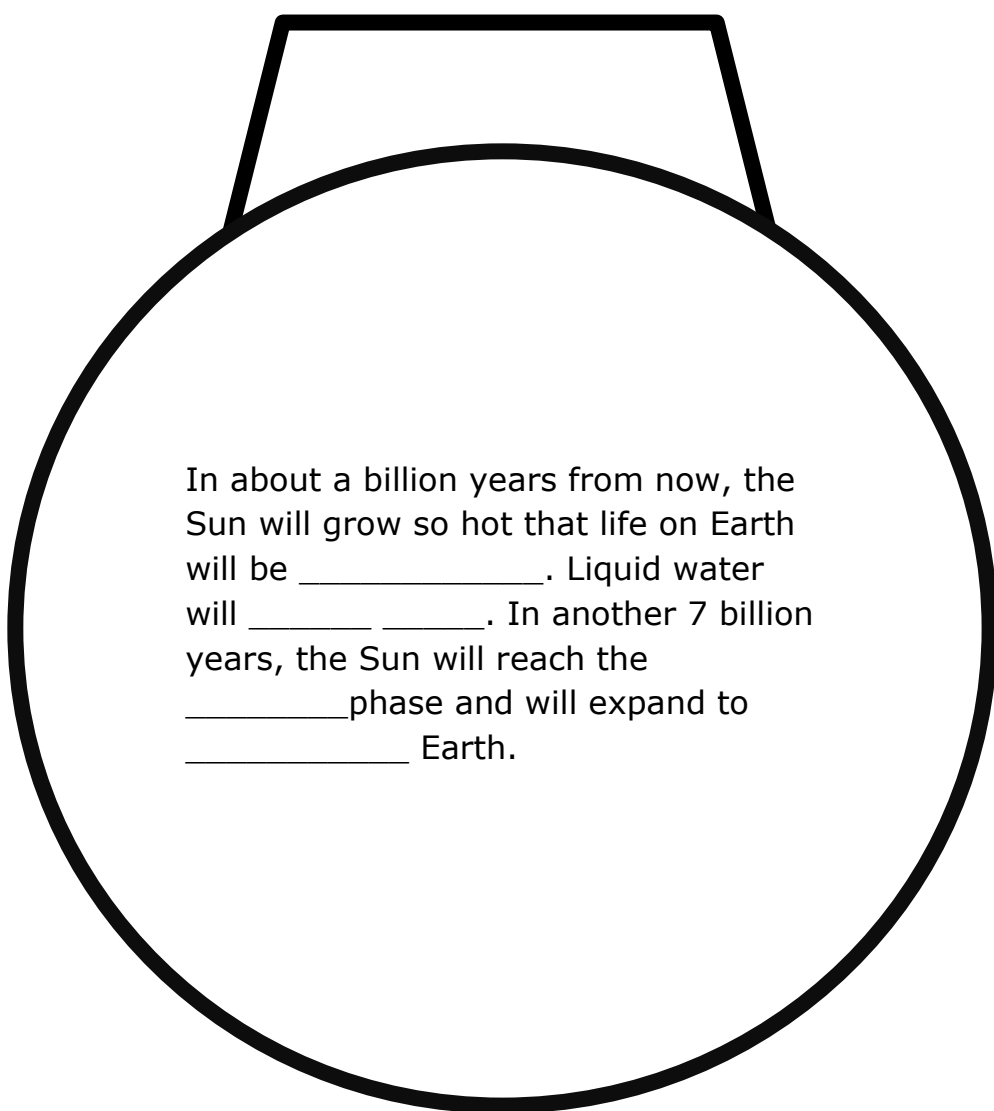


Our sun, which is composed of 74% _____, started burning about _____ billion years ago. It will continue to burn this hydrogen for _____ billion years. As the Sun grows older, it will become _____ and _____. When the Sun is 12.2 billion years old, the outer layers will _____, but the core will _____. After expanding, the Sun will _____ to be approximately the size of _____. When this happens, it will be called a _____. Over time the Sun will stop generating _____ or _____ and will end its life as a _____.

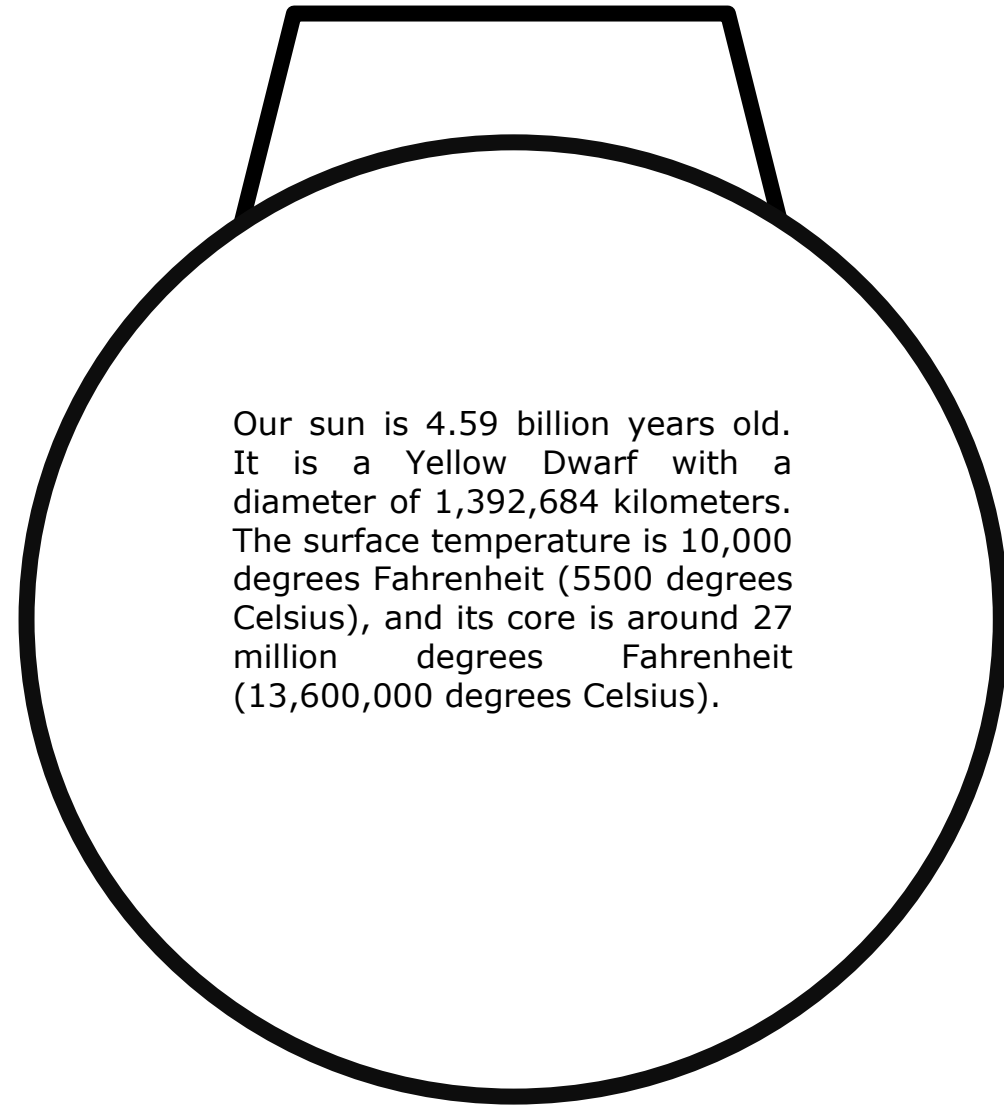
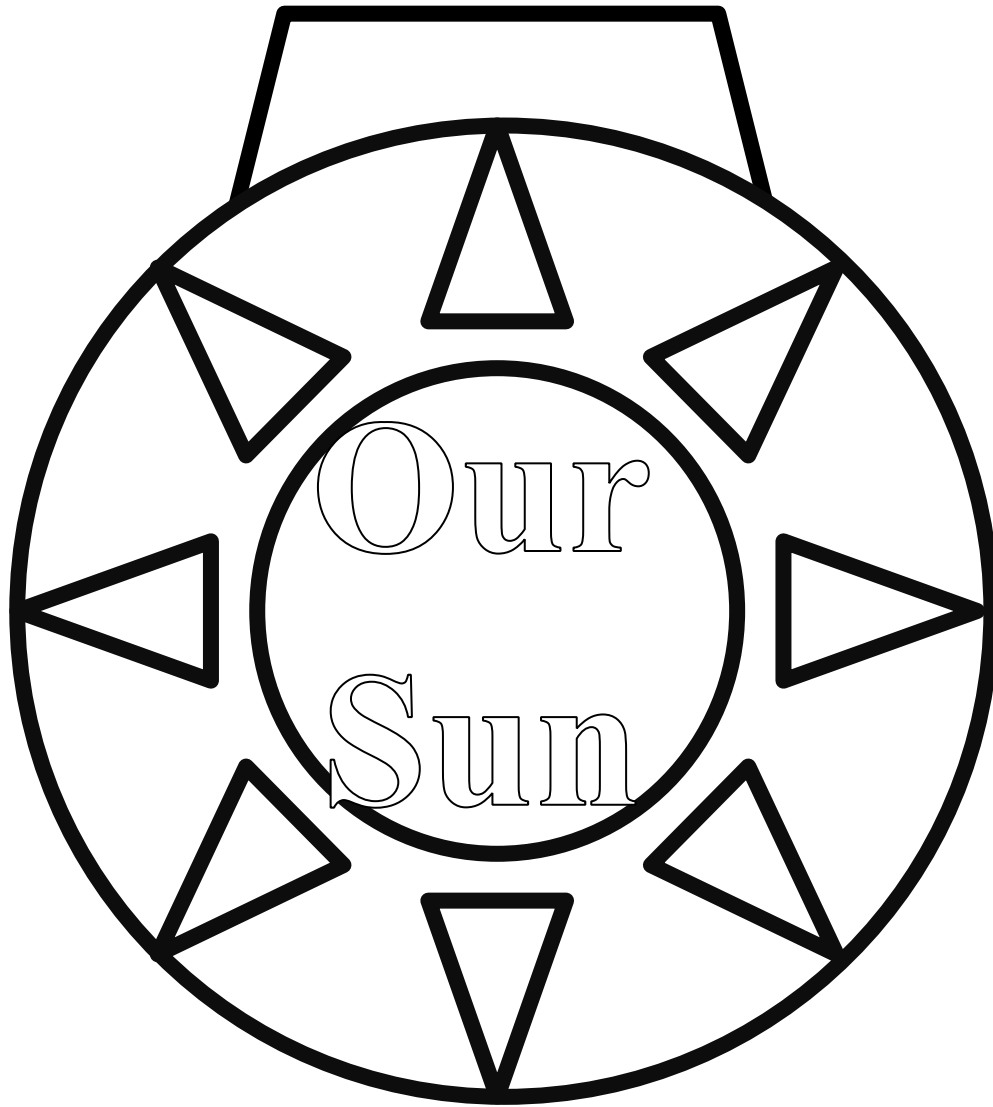


Just as the Earth orbits the Sun,
the Sun orbits the center of the
_____. This takes
_____ years to complete.

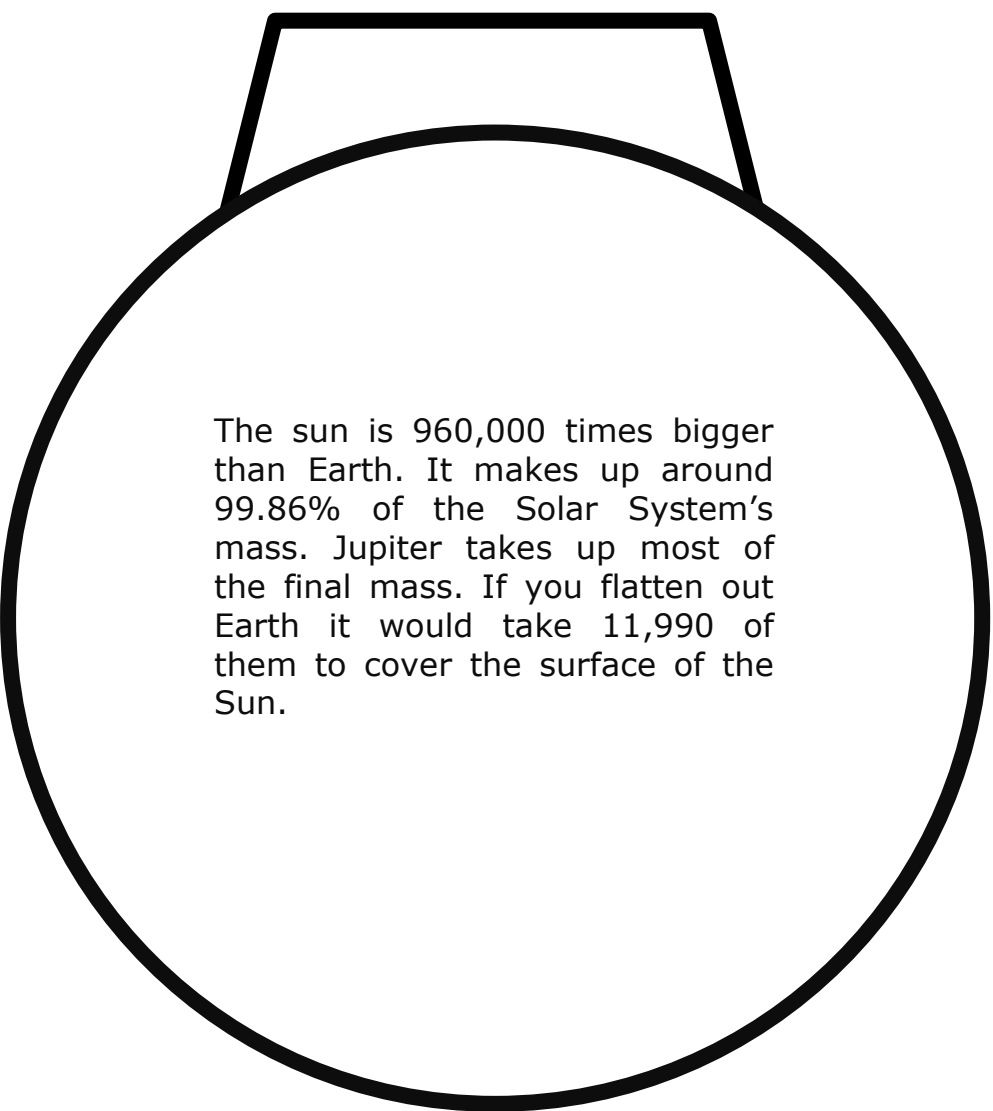
Because the Sun is a _____
of _____ gas, different
parts rotate at different
_____. The area near the
equator takes about _____
days to complete one rotation and
the areas near the poles take
around _____ days.



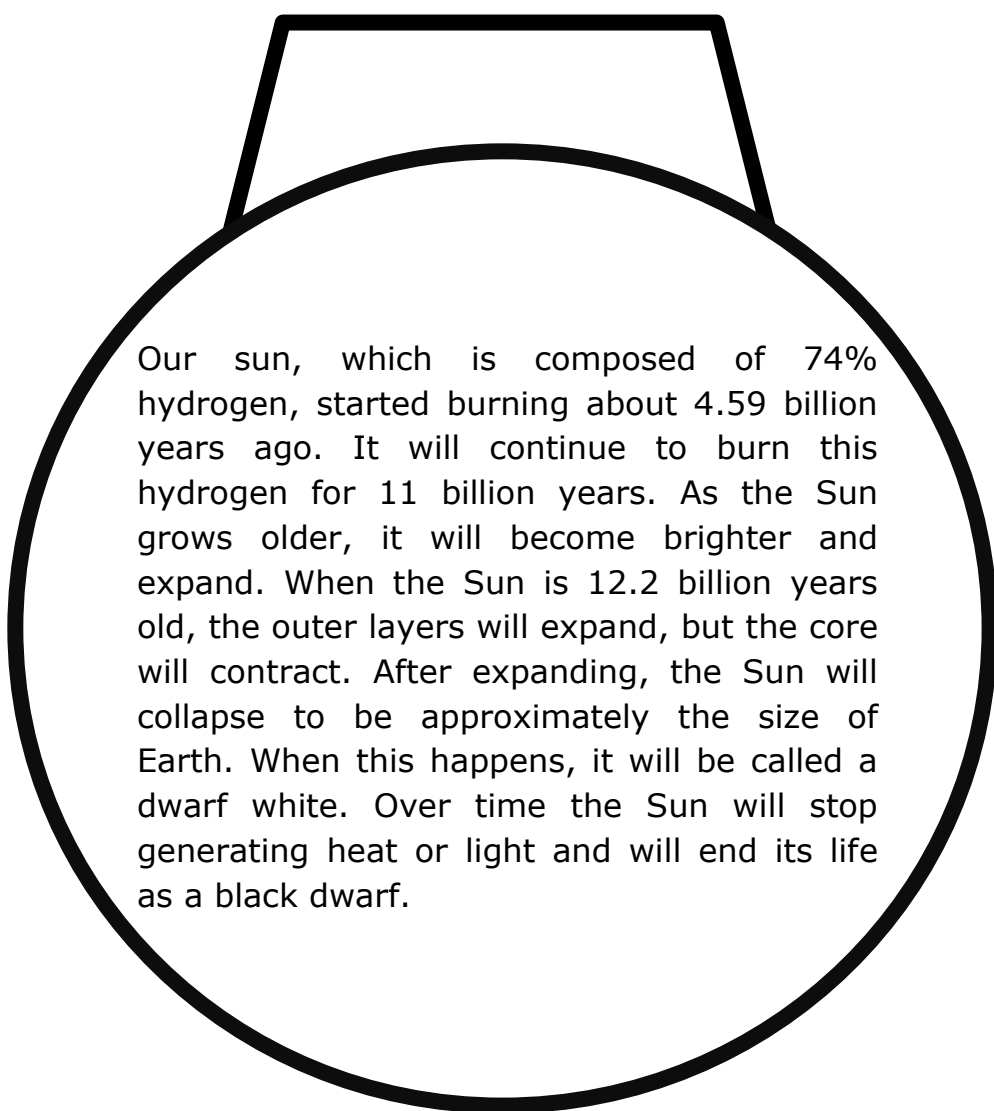
In about a billion years from now, the
Sun will grow so hot that life on Earth
will be _____. Liquid water
will _____. In another 7 billion
years, the Sun will reach the
_____ phase and will expand to
_____ Earth.



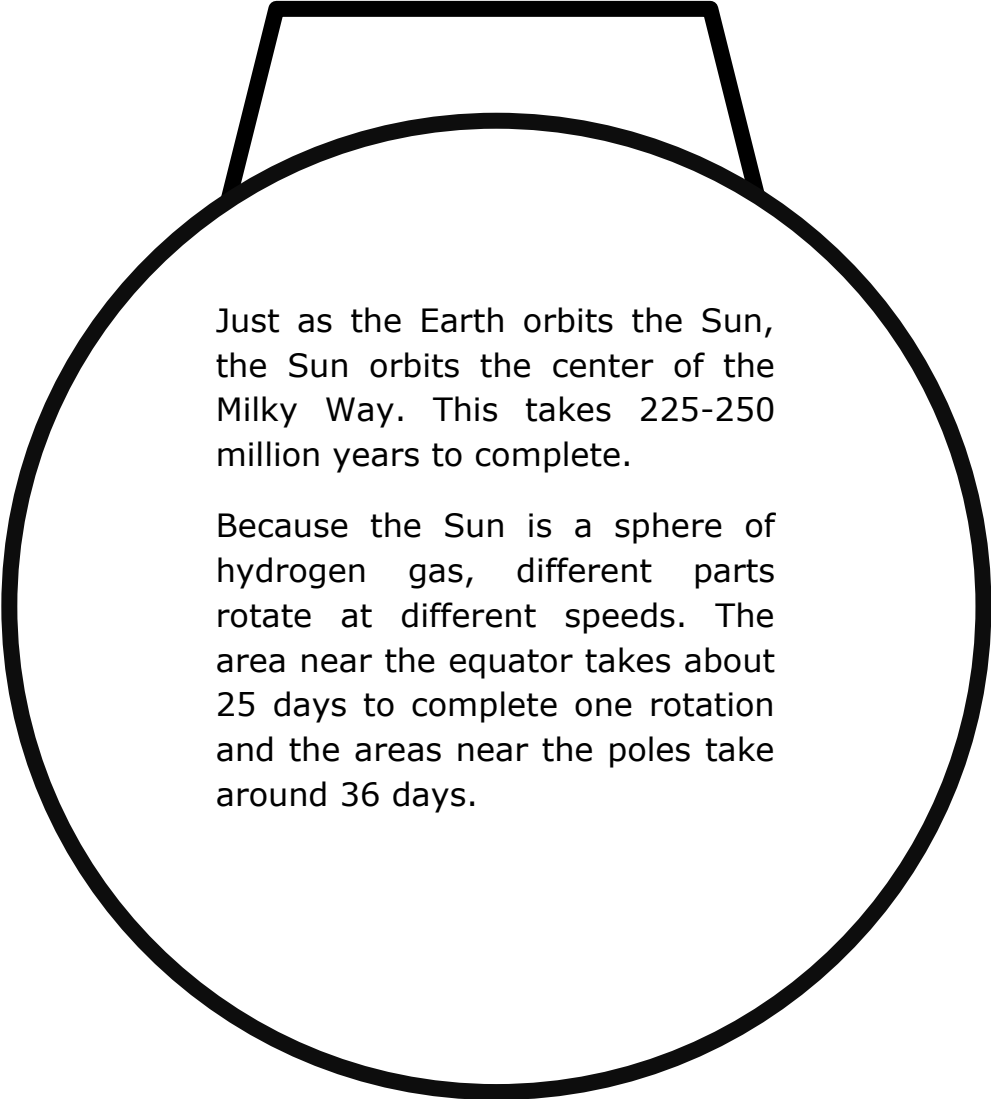
Our sun is 4.59 billion years old. It is a Yellow Dwarf with a diameter of 1,392,684 kilometers. The surface temperature is 10,000 degrees Fahrenheit (5500 degrees Celsius), and its core is around 27 million degrees Fahrenheit (13,600,000 degrees Celsius).



The sun is 960,000 times bigger than Earth. It makes up around 99.86% of the Solar System's mass. Jupiter takes up most of the final mass. If you flatten out Earth it would take 11,990 of them to cover the surface of the Sun.



Our sun, which is composed of 74% hydrogen, started burning about 4.59 billion years ago. It will continue to burn this hydrogen for 11 billion years. As the Sun grows older, it will become brighter and expand. When the Sun is 12.2 billion years old, the outer layers will expand, but the core will contract. After expanding, the Sun will collapse to be approximately the size of Earth. When this happens, it will be called a dwarf white. Over time the Sun will stop generating heat or light and will end its life as a black dwarf.



Just as the Earth orbits the Sun, the Sun orbits the center of the Milky Way. This takes 225-250 million years to complete.

Because the Sun is a sphere of hydrogen gas, different parts rotate at different speeds. The area near the equator takes about 25 days to complete one rotation and the areas near the poles take around 36 days.

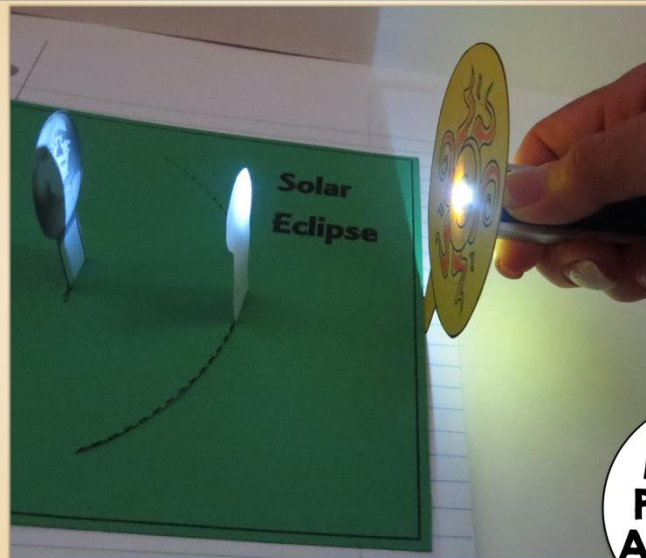


In about a billion years from now, the Sun will grow so hot that life on Earth will be destroyed. Liquid water will dry up. In another 7 billion years, the Sun will reach the giant phase and will expand to engulf Earth.

Are you looking for American history
teaching materials? Check out the
Science Series.

Earth's Place in the Universe

Activities & Models Unit



**Models
Projects
Activities**

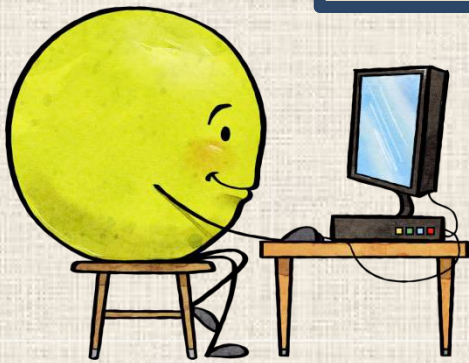
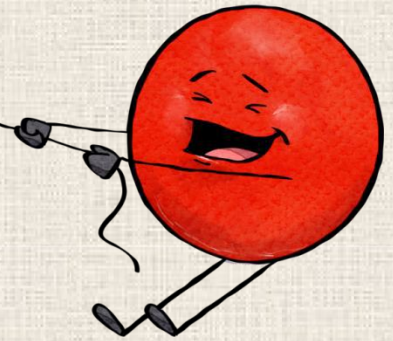
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MS-ESSI-4
Grades 6-8**

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Credits



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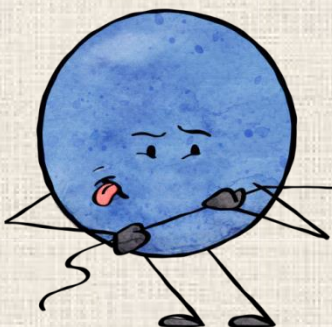
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