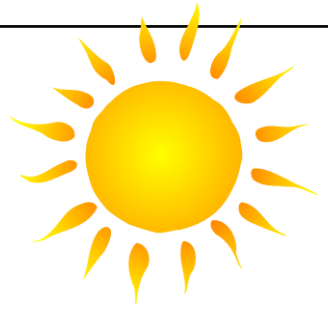
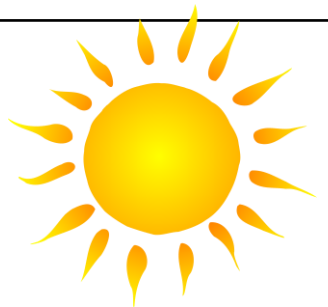
KLEWS Chart

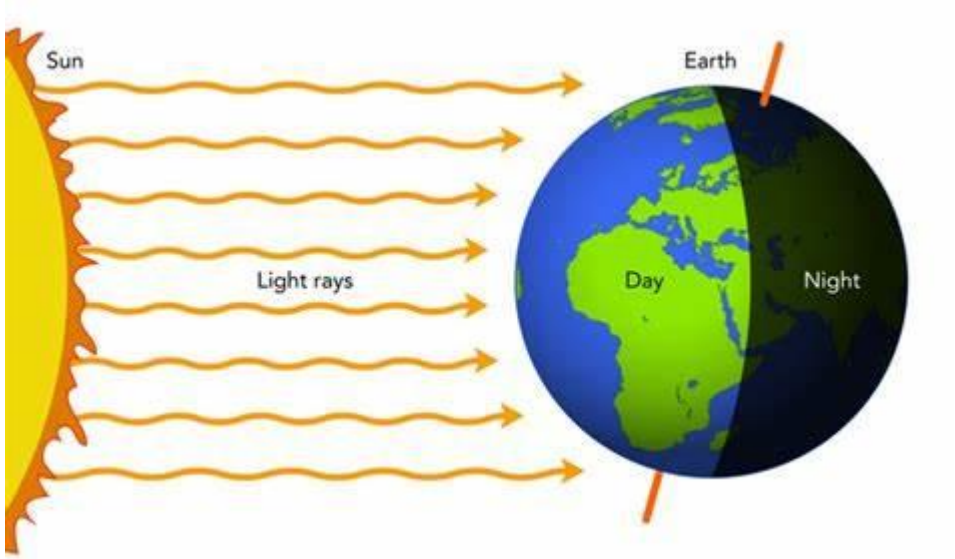
What do we know about the motion of the Earth on its axis and as it travels around the sun? What patterns emerge as the Earth rotates on its axis and revolves around the sun?

What do we think we KNOW?	What are we LEARNING?	What is our EVIDENCE?	What are we WONDERING?	What SCIENCE words and principles help us explain?




Day & Night Demo



- Using a flashlight or lamp for the sun and a globe for the Earth, mark on the globe where the equator is and also attach straws to each of the poles to represent the axis.
- Place the globe on the stand and tilt the globe 23.5% from the vertical position.
- Ask the students to indicate where on the globe the school is and mark it on the map. Have the school side facing the lamp. Ask the students to consider what this would represent. Rotate or turn the globe in the stand so that the opposite side faces the lamp – make sure to keep the axis at the same tilt. Ask students to explain what time of day the school would have now.

Questions:
What does the globe represent in this model? The lamp?

We attached a straw to both the north and south pole, what does this represent?

Why did we tilt the globe 23.5degrees?

What motion occurred when the school went from daytime to nighttime?

Materials: flashlight or lamp, globe, straws and tape to create axis, globe stand, protractor

Earth Events in Motion

Investigation #1: Day & Night

After watching the demonstration, explain what causes the day and night on the Earth?

As the Earth rotates, what happens to the amount of sunlight an area gets as it goes from darkness (night) to light (day)?

What happens to the amount of sunlight as an area goes from light (day) to darkness (night)?

Sketch the model and show the following in the sketch: Earth, sun, sunlight, axis.

Earth Events in Motion

Investigation #2: Around the Sun in 365 Days

When you watch the animation, what are the different objects that are observed?

What is happening in this animation?

Sketch the sun. Now show the path of the Earth around the sun. Make sure you label the equator on the Earth and also show the tilt of the Earth on its axis. Include the location of the Earth for summer, winter, spring, and fall.

What is the pattern that emerges as the Earth revolves around the sun in a year?

Earth Events in Motion

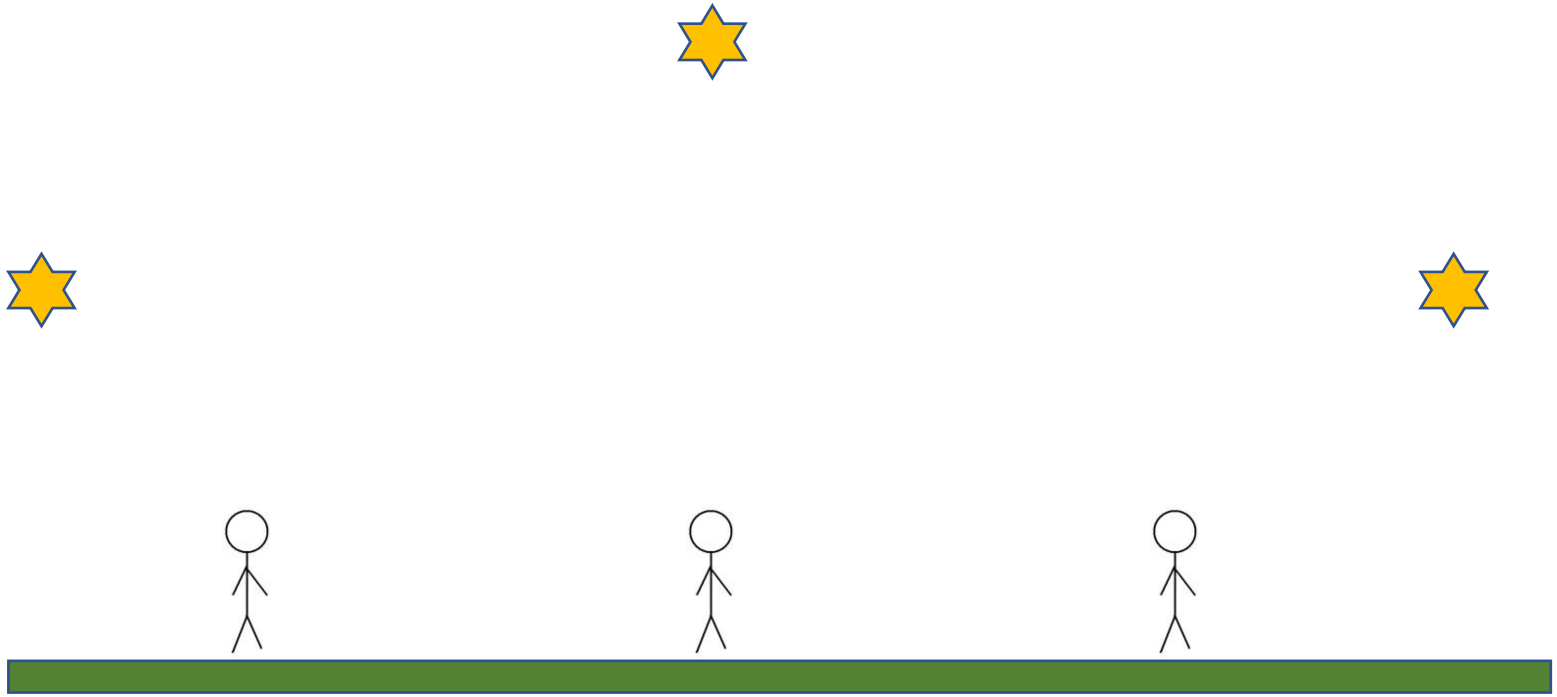
Investigation #3: Shadows from Sundials

Follow the directions on the information sheet that your teacher provides.

Explain what happened to your shadow when the sun was overhead.

Where was your shadow when the sun was not overhead?

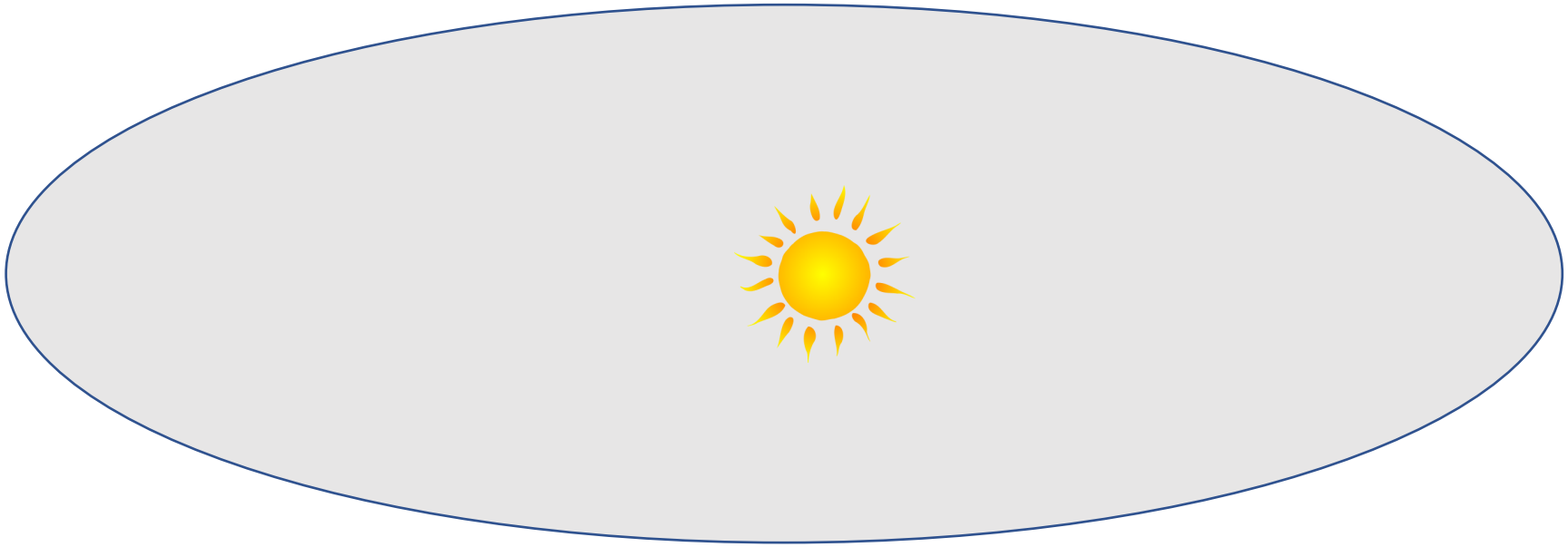
Use the position of the sun in the pictures below and then sketch your shadow at three different points during the day.



Earth's Place in Space

Our team has the season of:_____

Sketch where the Earth is in its orbit of the sun during your season.



Make sure you:

- Describe the movement of the Earth with arrows.
- Incorporate the key terms of rotate, revolve, season, axis, day/night
- Include an illustration/sketch showing the correct placement of the sun and Earth along the orbital path etc.
- Label the season

Our information sheet was reviewed by our peers: (names)