

Name: \_\_\_\_\_

Hour: 1 2 3 4 5 6 7

## Seasons Guided Notes 1

Check off the boxes when you can say you know the following:

- ☐ Can you describe the yearly revolution (orbit) of Earth around the sun.
- ☐ Can you explain that Earth's axis is tilted relative to its yearly orbit around the sun.
- ☐ Did you investigate the relationship between the amount of heat absorbed and the angle to the light source. (We will also do this one again later)

### Lesson Introduction -

Who has ever heard of the Polar Bear Plunge? Who thinks that sounds like fun? It can also be dangerous. Why? Hypothermia - and cold. Well why can we swim in July but not in Jan? *Winter vs Summer* Those are called seasons. And each season brings with it a different pattern of weather.

What causes seasons?

Seasons are caused by Earth's tilted axis and by its revolution around the sun.

Today we are going to talk about why the tilt of Earth's axis is a factor in seasons. In your groups answer the following questions. Each person needs to answer at least 1.


- What does it mean to rotate? Spins in place
- Earth rotates on its axis. Earth is tilted on its axis.
- How long does it take the Earth to complete one rotation? 24 hours
- What does revolve mean? To go around something in a circular path
- What does the Earth revolve or orbit? The Earth revolves around the Sun.
- How long does it take Earth to revolve around the Sun? 365 Earth days.

Diagram of the Earth: Label the Hemispheres

Bill Nye Clip. Answer these as we watch.  
<https://www.youtube.com/watch?v=KUU7lyfR34o>

We have seasons on Earth is because the Earth is tilted.

## Seasons Guided Notes 1

	<p>When our part of the Earth is towards the sun it's <u>daytime</u>. When our part of the Earth is away from the sun it's <u>night time</u>.</p> <p>When our part of the Earth is tilted toward the sun, it's <u>summer time</u>. When our part of the Earth is tilted away from the sun it's <u>winter time</u>.</p>
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Continue Bill Nye:

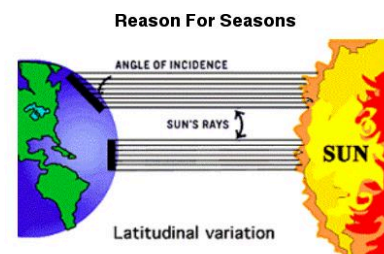
- Why are the North and South Poles the coldest places on Earth? Why is the equator so warm?
  - Because the heat hitting the equator is hitting it head on. The heat hitting the poles is barely grazing by. It is about if the heat is straight on or not. Direct vs Indirect.
- What angle is the Earth tilted at? 23.5 degrees from perpendicular
- These parts of the Earth are called Hemispheres. What are the 2 hemispheres called? The Northern Hemisphere and the Southern Hemisphere.
- When it is summer in our hemisphere that means we are getting more Heat Energy

The reason we have seasons?

- The Earth is tilted
- \*Remember: The Axis never changes

The reasons seasons change?

- The Earth orbits/ revolves/ changes position
- The Earth revolves counter clockwise



Name: \_\_\_\_\_

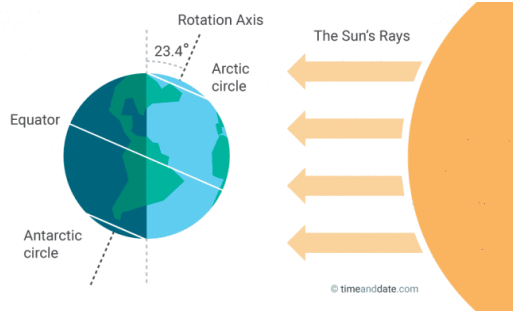
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## Seasons Guided Notes 1

### Summer Solstice

- Happens on June 21 \_\_\_\_\_
- When the sun is highest in the sky, most direct over the NH
- Longest Day
- Sun falls on the Tropic of \_\_\_\_\_Cancer\_\_\_\_\_

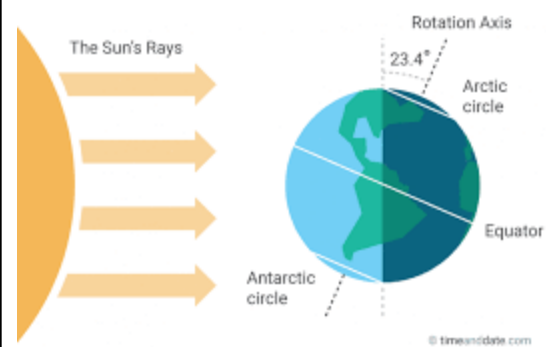
### Diagram



### Winter Solstice

- Happens on \_\_\_\_\_Dec 21\_\_\_\_\_
- When the sun is lowest in the sky, most direct over SH
- Shortest Day
- Sun falls on the Tropic of \_\_\_\_\_Capricorn\_\_\_\_\_

### Diagram



### Equinox

Time of the year when \_\_\_\_\_the sun is directly over the equator \_\_\_\_\_