Name: _____ Date: _____ Per.: ____

LAB# ____

Earth's Orbit

NOTE:
-On the diagram, notice that Earth appears in 4 different positions.
-The Equator and Axis of Rotation appear on each of the 4 Earths.
-Arrow C, D, E and F show the orbital direction Earth follows at it revolves around the Sun.
-The line on which the letters A and B appear represents the Major Axis of Earth's orbit.

Label the Diagram:

1. Based on your observations of Earth's position relative to the sun as well as the tilt of Earth's axis, on the diagram label each Earth with the correct **SEASON**.

2. Label the **date** or **range of dates** for each season.

3. Using the terms **greatest** and **least**, place the correct word that describes Earth's Orbital Speed for Earths 1 and 3.

4. Using the terms **greatest** and **least**, place the correct word that describes the Gravitational Attraction between the Earth and the Sun for positions 1 and 3.

5. As Earth moves in its orbit from position 1 to position 3, state what happens to kinetic and potential energy by filling in the blanks on the diagram. Use the words: **increases** and **decreases** in your answer.

6. As Earth moves in its orbit from position 3 back to position 1, state what happens to kinetic and potential energy by filling in the blanks on the diagram. Use the words: **increases** and **decreases** in your answer.

7. On each of the four Earth's color the area that would be in shade (not receiving the sun's rays). Use your pencil and shade lightly so the Equator and Axis are still visible through your shading.

8. Using your **colored pencil**, color the portion of each of the four Earth's that would be receiving the sun's rays.

9. Along the orbit's major axis, at Points A and B, label which letter represents Earth at Perihelion and which letter represents Earth at Aphelion. Write these words next to the A and B letters, directly on the major axis line.

10. Underneath the major axis you will see 2 Dates with blanks. Write Earth's Perihelion and Aphelion dates in these blanks.

Answer the following questions about Earth's Orbit and Yearly Revolution.

11. What geometric shape is used to describe Earth's Orbit?
_____

12. The diagram states that the illustration is not drawn to scale and that the orbit is exaggerated. This was done to facilitate the viewing and understanding of concepts in this exercise. Describe the actual shape of Earth's Orbit.
_____

13. How long does it take for Earth to complete one revolution around the sun?
_____

14. Make a general statement about Earth's position relative to the sun and Earth's Orbital Speed.
_____

15. Make a general statement about Earth's position relative to the sun and the Gravitational Attraction between the Earth and the Sun.
_____

16. Make a general statement about a Planet's distance to its Sun with respect to the Gravitational Attraction between them and the Planet's Orbital Speed.
_____
_____

17. When you labeled the SUMMER SEASON, was the Earth closest to or farthest from the Sun?
_____

18. What conclusion can you make concerning the effect of distance to the Sun and our yearly temperature variations?
_____

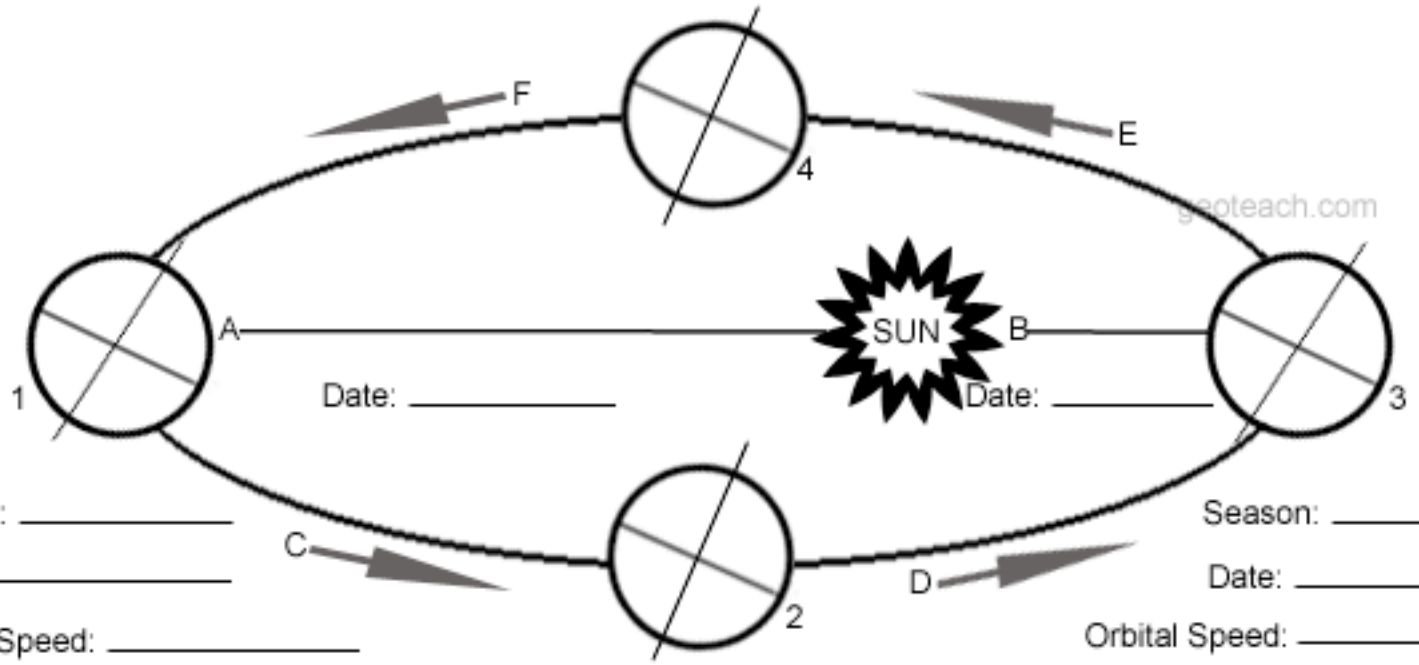
19. What then causes SEASONS to occur on Earth? There are actually 4 factors. Hints are provided.
1. _____
2. _____
3. _____
4. _____

Label Earth's Orbit

Season: _____

Date: _____

Kinetic Energy is _____ while Potential Energy is _____.



Season: _____

Date: _____

Orbital Speed: _____

Gravitational Attraction: _____

Season: _____

Date: _____

Orbital Speed: _____

Gravitational Attraction: _____

Kinetic Energy is _____ while Potential Energy is _____.

Season: _____

Date: _____

Not Drawn to Scale. Orbit is exaggerated.

Name: ________________________________ Date: __________ Per.: ____