

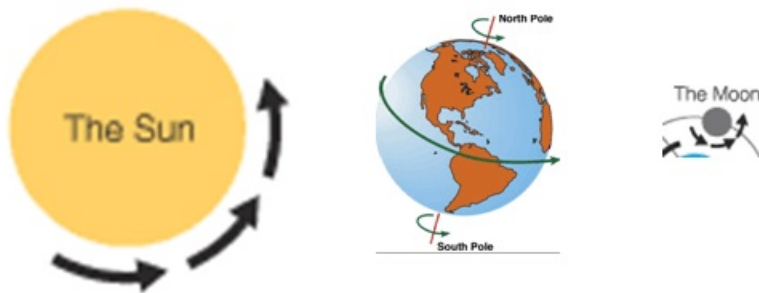
**INTERMEDIATE SCIENCE 9**  
**UNIT 1: SPACE**  
**WORKSHEET # 3: MOVEMENT OF CELESTIAL BODIES**



**1) Celestial Bodies Rotate**

**Rotation** : move or cause to move in a circle around an axis or center

Planets, suns and moons revolve on a central axis.

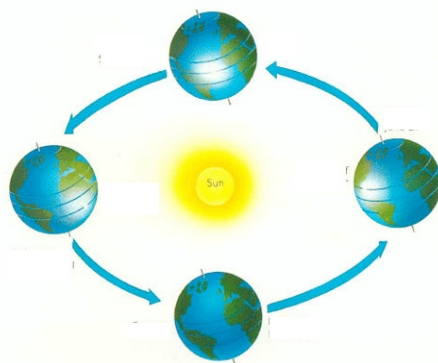


Facts about the rotation of Earth on its axis:

- The Earth is tilted at 23 degrees on its axis and rotates from west to east.
- Every 24 hours, the Earth rotates once on its axis. This rotation is what caused night and day.
- The stars in the sky seem to move from east to west. The Earth's rotation on its axis toward the east causes this gradual motion.
- Stars seem to revolve around a common point. the stars appear to rotate is the North Star—Polaris. If you were to extend Earth's axis out into space, it would point at **Polaris**.
- **Circumpolar constellations** refers to a constellation that never appear to set or dip below the horizon. Examples:
  - Ursa Major
  - Ursa Minor
  - Cassiopeia

**2) Celestial Bodies revolve**

- **Revolution** is the movement of one object around a center or another object.

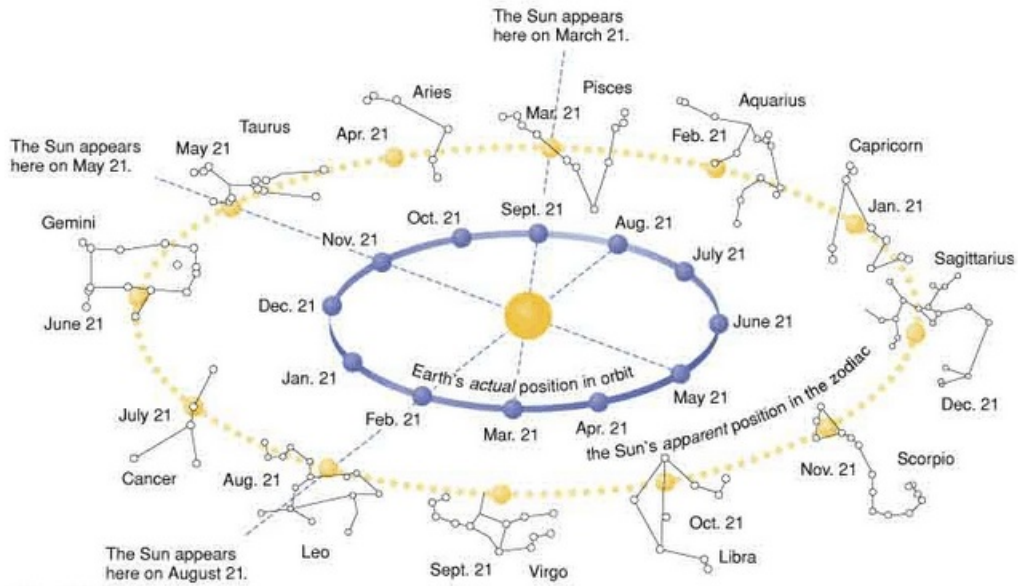


- **Orbit** is a regular, repeating path that one object in space takes as it revolves around another one. All orbits are elliptical, which means they are an ellipse, similar to an oval. These orbits result from gravitational forces

- Planets, comets, asteroids and other objects in the solar system orbit the sun

Facts about the revolution of Earth on its axis:

- Planet Earth also revolves around the sun. It takes 365.25 days for the Earth to make a complete revolution around the sun.
- Because Earth moves around the Sun every year, we see a different part of the sky every season. Some constellations are visible all year long but change positions, and some constellations are visible in certain seasons only,
- As the earth revolves around the Sun, it appears that the sun is moving against the background stars. The Sun follows the same path through the sky every day. We call this path the ecliptic. Along this path lie the 12 zodiacal constellations



PART A: Written Response

1. Why do you see different part of the sky every season?

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2. Distinguish between rotation and revolution?

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3. What three constellations in the north sky are called circumpolar constellations?

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4. Using your zodiac sign (horoscope), sketch your constellation and research the history of this constellation.

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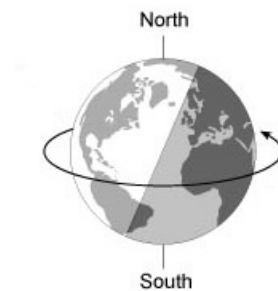
Part B: Multiple Choice

1. Which term describes the spinning of a celestial body on its axis?

- (A) Orbit
- (B) Path
- (C) Revolution
- (D) Rotation

2. What does the picture below illustrate?

- (A) Orbit
- (B) Path
- (C) Revolution
- (D) Rotation



3. Which way does the star appear to move in the night sky?

- (A) east to west
- (B) west to east
- (C) north to south
- (D) south to north

4. Which star does the night sky appear to rotate around?

- (A) Alpha Centauri
- (B) Betelgeuse
- (C) North Star
- (D) Rigel

5. Which of the following refers to the North Star?
- (A) Alpha Centauri
  - (B) Betelgeuse
  - (C) Polaris
  - (D) Rigel
6. How do you find the North Star in the night sky
- (A) It is the brightest star
  - (B) It moves from east to west in the night sky
  - (C) Use the pointer stars of the Big Dipper
  - (D) Use the pointer stars of the Little Dipper
7. Which of the following is an asterism?
- (A) Leo the Lion
  - (B) Big Dipper
  - (C) Ursa Major
  - (D) Ursa Minor
8. What are circumpolar constellation?
- (A) Constellations that you rarely see in the night sky
  - (B) Constellation that never appear to set or dip below the horizon
  - (C) Constellation that appear to set or dip below the horizon
  - (D) Constellations that move east to west in the night sky
9. Which of the following is not a circumpolar constellation?
- (A) Leo the Lion
  - (B) Cassiopeia the Queen
  - (C) Ursa Major
  - (D) Ursa Minor
10. Which term refers “ to the movement of one object around a center or another object”?
- (A) Path
  - (B) Road
  - (C) Revolution
  - (D) Rotation
11. What term refers to the path an object takes in space as it revolves around another object?
- (A) Orbit
  - (B) Path
  - (C) Road
  - (D) Rotation
12. Which of the following describes the shape of orbits
- (A) Elliptical
  - (B) Linear
  - (C) Rectangular
  - (D) Triangular
13. Which shape best describes an ellipse?
- (A) Circle
  - (B) Oval
  - (C) Square
  - (D) Triangle