

### Models of Solar System

Ptolemy's Geocentric Model -> Earth at the center and accepted for over 1500 years	Copernicus' Heliocentric Model -> Sun at the center, circular planet orbits
Galileo's Contributions -> One of the first telescopes (support Copernicus)	Kepler's Improved Model -> Elliptical orbits and moons orbiting planets

Phases of the Moon -> Appears in different shape in different time

### Causes of Season

The Earth rotates on its axis (rotation) and revolves around the Sun (revolution)	Daylight (the hemisphere experiencing summer (e.g., the Northern Hemisphere) is tilted towards the sun)
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<https://sciencenotes.org/wp-content/uploads/2023/11/Why-Do-We-Have-Seasons.png>

### Properties of Magnetism

North and South poles attract, similar pole repel	Discovered by Chinese 200 BCE thousands years ago
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Magnetism (Physical) -> Allows certain materials to attract or repel each other.

### Earth's Magnetic Field

Magnetic Field -> Space around a magnet where its force is felt	To find magnetic field, use iron fillings or compass.
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Earth's magnetic field is generated by the movement of molten iron in its outer core. Protects the planet from harmful solar radiation by deflecting charged particles from the sun.

### Shape of Magnetic Field

<a href="https://cdn.shopify.com/s/files/1/1025/0137/files/s/magnetic-fields_8a6a18c6-d8b9-485f-97ca--99ba5a6e06c5.jpg?v=1685904676">https://cdn.shopify.com/s/files/1/1025/0137/files/s/magnetic-fields_8a6a18c6-d8b9-485f-97ca--99ba5a6e06c5.jpg?v=1685904676</a>	Flow from north to south, closed loops, no crossing.
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### Factors that Affect Gravity Strength

Gravity -> Force that pulls object together.	Earth's Gravity (9.8) pull everything toward center.
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Weight -> Force of gravity on an object	$N = kg \times N/kg$
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Earth orbits sun at 100,000 km/h.	Factors -> Mass, Distance, Density, Location, Presence of Nearby Masses
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### Gravity Affect Objects in Space

Keeps planets in orbit around the sun, preventing them from flying off into space.	Causes moons to orbit planets and governs the motion of satellites
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Pulls matter together, which is how stars and galaxies are formed Affects the paths of comets and asteroids as they travel through space.

Affects microgravity environment like ISS.

