

# **Solar Noon**

The point at which the Sun is highest in the sky (and when shadows are shortest).

# **Rotation**

The movement of one object as it turns or spins around a central point or axis.

# **Revolution**

The movement of  
one object around  
a central object.

# Equinox

Neither end of Earth's axis is tilted toward the Sun. Both hemispheres receive the same amount of light/energy.

# June Solstice

The north end of the Earth's axis is tilted toward the sun. The northern hemisphere receives direct rays and it is summer.

# December Solstice

The north end of the Earth's axis is tilted away from the sun. The northern hemisphere receives indirect rays and it is winter.

# **Astronomy**

The branch of science  
that studies the  
stars, planets, and  
other objects in  
space.

# **Solar Eclipse**

The blocking of the Sun's light that occurs during a new moon when the Moon's shadow falls on Earth.

# Lunar Eclipse

The Earth blocks the Sun's light to the Moon; occurs during a full moon, when Earth's shadow lands on the moon.

# Gravity

A force of attraction between two objects; the strength of the force is due to the mass and distance between two objects.

# Axis

An imaginary line that runs through the middle of an object around which that object rotates.

# Comet

A ball of frozen gas, cosmic dust, ice crystals, and organic material whose orbit around the Sun takes it outside the solar system.

# Day

The time it takes a planet to complete one rotation on its axis, one Earth day is approximately 24 hours long.

# Year

The time it takes a planet to complete one revolution around the Sun, one Earth year is approximately 364  $\frac{1}{4}$  days long.

# **Leap Year**

A year that contains  
366 days, with  
February 29 as an  
additional day; occurs  
every four years.

# **Terrestrial Planets**

The four inner planets (Mercury, Venus, Earth, and Mars) due to their rocky features.

# Latitude

An angular distance on a globe that runs parallel (east and west) to the equator.

# **Longitude**

An angular distance on a globe that runs perpendicular (north and south) to the equator.

# **Inertia**

The tendency of an object to remain either at rest or in motion unless acted on by an outside force.

# **Orbit**

The movement of one object around a central object.

Another word for orbit is revolve.

# NASA

The National Aeronautics and Space Administration, an organization that oversees the United States' space program.

# Neap Tide

Lower-than-normal high tide that occurs when the first or third quarter moon, Earth, and Sun are at right angles to each other and the gravitational force of the Sun partially offsets the gravitational force of the Moon.

# **Hubble Space Telescope**

A telescope that  
orbits Earth 600 km  
above the surface.

# **Meteor**

The streak of light that is produced when a meteoroid burns as it enters an atmosphere.

# **Meteorite**

A meteoroid that strikes a planet, moon, or asteroid.

# **Meteoroid**

A solid object moving in space. It is different from asteroids and planets because it is smaller in size.

# **Penumbra**

In an eclipse, it is the lighter, outer part of a shadow cone where a small amount of light is still visible.

# **Umbra**

In an eclipse, it is the inner, darker part of a shadow where no light is visible.

# Planet

A massive, usually spherical space object that orbits a star and shines by reflecting the star's light.

# **Polaris**

The current star to  
which the North  
Celestial Pole of Earth  
(northern axis) points.

A.K.A- North Star

# **North Star**

The star to which the North Celestial Pole of Earth (northern axis) points.

A.K.A- Polaris

# Season

One of four natural parts of the year on Earth—summer, autumn, winter, and spring. Seasons depend on the planet's revolution around the Sun.

# **Shadow**

An area where  
light is blocked  
by an object.

# Tide

The rise and fall of the level of water in an ocean and other waters due to the pull of the Moon's gravity.

# Sun

The star in the center of our solar system that 8 planets revolve around. It is the only star in our solar system.

# Star

A sphere of hot glowing gasses, that releases energy in the form of heat and light.

# Spring Tide

Higher-than-normal high tide during the month that normally occurs during a new and full moon when the Sun, Moon, and Earth are in line and their gravitational forces are combined.

# Universe

The entirety of  
everything that is  
known to exist in  
space.

# Solar System

A star with planets and other objects in orbit around it; our solar system is made up of the Sun, eight planets, asteroids, meteoroids, comets, and other space objects.

# Galaxy

A large system of dust, gas, stars, and other celestial bodies that has a particular shape. The galaxy we are in is called the Milky Way galaxy.

# **New Moon**

A phase of the Moon in which the side of the Moon that faces Earth is not illuminated at all; occurs when the Moon is between the Earth and Sun.

# Waxing Crescent

Phase of the Moon in which a narrow strip of the Moon's lighted side is visible from Earth; shaped like a crescent; light is on the right; occurs after a new moon.

# 1st Quarter

The phase of the Moon in which only the right half of the Moon's side that faces the Earth is illuminated; occurs when the Moon, Earth, and Sun form a  $90^\circ$  angle.

# Waxing Gibbous

Phase of the Moon in which  $\frac{3}{4}$  of the right side of the Moon's side that faces the Earth is lighted; occurs before a full moon.

# Full Moon

The phase of the Moon in which the entire side of the Moon that faces Earth is fully illuminated; occurs when Earth is between the Moon and Sun.

# Waning Gibbous

Phase of the Moon in which  $\frac{3}{4}$  of the left side of the Moon's side that faces the Earth is lighted; occurs after a full moon.

# 3rd Quarter

The phase of the Moon in which only the left half of the Moon's side that faces Earth is illuminated; occurs when the Moon, Earth, and Sun form a  $90^\circ$  angle.

# Waning Crescent

Phase of the Moon in which a narrow strip of the Moon's lighted side is visible from Earth; shaped like a crescent; light is on left; occurs before a new moon.

# Phase

Any of eight various stages in which the Moon appears to change its shape because on Earth we see different amounts of the Moon's lighted side as it revolves.

# **Indirect Sunlight**

The type of sunlight the northern hemisphere receives in the winter, spring, and autumn; due to bouncing rays of sunlight that have not come directly from the Sun.

# **Direct Sunlight**

The type of sunlight the northern hemisphere receives in the summer due to straight rays of sun striking us.

# **Asteroid**

A small, mostly rocky  
solar system object  
that orbits  
independently around  
the Sun; minor planet.

# **Asteroid Belt**

A large group of asteroids that orbits the Sun between Mars and Jupiter.

# **Angle of Separation**

Angle between lines  
originating from the eye  
of the observer towards  
two objects, such as  
Polaris and the horizon.

# **Annular Eclipse**

A type of solar eclipse in which the Moon is too far from the Earth to cover the Sun completely, so the outer edge of the Sun is seen as a ring.

# **Atmosphere**

The mixture of  
gases that  
surrounds a planet  
or moon.

# Coma

The part of a comet that surrounds the nucleus and that is made of gas and dust.

# **Constellation**

An observed pattern  
(or picture) of stars.

# **Crater**

A bowl-shaped pit on a planet, moon, or asteroid formed by the impact of an object or volcano.

# **Ecliptic**

The apparent path of the Sun, planets, and Moon in the sky as seen from Earth.

# **Law of Inertia**

Law stating that a body in motion tends to travel in a straight line unless an outside force disturbs it.

# **Partial Lunar Eclipse**

During a lunar eclipse the Moon moves partially into the umbra of Earth's shadow causing part of the full moon's illuminated disk to become temporarily darkened by Earth's shadow.

# **Partial Solar Eclipse**

When the new moon, Earth, and Sun are not completely aligned and viewers on Earth are located in the penumbra of the Moon's shadow; causes a solar eclipse where the new moon temporarily blocks part of the Sun's disk.

# **Penumbral Lunar Eclipse**

Lunar eclipse, barely visible from Earth, that occurs when the new moon moves into the penumbra of Earth's shadow.

# Scale

The ratio between the measurements on a map or model and the actual measurements of an object.

# Scale Factor

The method for reducing all measurements by the same amount to achieve the measurement of the scale model.

# **Solar Energy**

Energy (light and heat) from the Sun.

# **Mass**

The total amount of matter in an object; not dependent upon gravitational pull.

# **Velocity**

Speed and direction  
that an object travels  
a specific distance in  
a certain amount of  
time.

# **Weight**

A measure of the force of gravity on an object.

$$\text{Weight} = \text{Mass} \times \text{Gravity}$$