

# U-Pick Projects: Earth Science

Name \_\_\_\_\_

**Directions:** Pick projects that will earn you a minimum of 10 points. Shade in the boxes to show the projects you complete. You may create electronic versions that can be shared with your teacher or complete them with materials you have available at home. You may choose up to 2 more boxes to complete to earn extra credit equal to the number of points the boxes are worth.

1 pt	What types of scientists study our solar system and the objects in it? Identify five science careers and what each one studies.	Research how a telescope works. Draw a diagram and label the different parts and explain how it works.	Create a set of flashcards for 10 vocabulary terms from the Astronomy unit. Each flashcard should have the term listed on the front along with a picture clue and a definition on the back.
2 pts	Create a coloring page with pictures or diagrams to teach a younger student about stars and at least five constellations.	Create a cartoon to teach people about the differences between solar and lunar eclipses.	Create a crossword puzzle using at least 15 terms from the Astronomy vocabulary. You must provide the clues and an answer key.
3 pts	Make a model of the lunar cycle showing the different moon phases. Add labels and descriptions to explain each one.	Research a development in space exploration. Provide a description of the discovery and its importance to our understanding of outer space.	Design an infographic to explain why we have seasons on Earth. You will need to include the terms equinox and solstice along with other related vocab.
4 pts	Create a scale model of our solar system. Write a paragraph to explain how you determined your scale and the actual distances between each planet and our sun	Create a set of trading cards highlighting important facts about each planet in our solar system. Each planet should include at least 3 facts.	Create 5 questions using the Astronomy vocabulary that your teacher could add to a quiz or test. Each question must have 4 answer choices with the correct one identified.

Total Points Earned = \_\_\_\_\_

## Astronomy Vocabulary – Also available on [Quizlet](#)

- Actual Motion - Stars are always constantly moving even though they seem to either be still or move because of Earth's motion.
- Apparent Motion - The appearance that objects in the night sky move against the typical direction of motion
- Asteroid - A small rocky body orbiting the sun
- Astrobiology - The study of life in the universe, including life on Earth and the possibility of extraterrestrial life
- Astronomer - A scientist who studies the stars and other objects in the sky
- Astronomy - The study of the moon, stars and other objects in space.
- Astrophysicist - An astronomer who studies the physical properties of celestial bodies
- Axis - An imaginary line that passes through Earth's center and the North and South poles, about which Earth rotates.
- Black dwarf - The presumed final stage of a white dwarf
- Black Hole - An object in space whose gravity is so strong not even light can escape.
- Chemist - Studies elements, atoms, and molecules to explain the chemical composition of objects in outer space
- Comets - Small; eccentrically orbiting body made of rock and ice which have one or more tails that point away from the Sun.
- Constellation - A pattern of stars in the sky.
- Cosmology - The understanding of the nature of the universe
- Crater - a round pit on the moon's surface.
- Earth - third planet from the sun
- Eclipse - The partial or total blocking of one object by another.
- Equinox - The two days of the year on which neither hemisphere is tilted toward or away from the sun.
- Galaxy - A system of millions or billions of stars, together with gas and dust, held together by gravitational attraction.
- Gas giants - The name given to the first four outer planets: Jupiter, Saturn, Uranus, and Neptune.
- Giant star - A very large star, much larger than the sun.
- Gravity - The attractive force between two objects; the amount of force depends on their masses and the distance between them.
- Jupiter - Largest planet, 5th planet from sun
- Light year - The distance that light travels in one year.
- Lunar Eclipse - Occurs whenever the Moon passes behind Earth in relation to the sun.
- Magnitude - A number representing the apparent brightness of a celestial body
- Mars - Mars is the fourth planet from the Sun and is the second smallest planet in the solar system
- Mercury - Smallest planet, closest to sun
- Meteor - A streak of light in the sky produced by the burning of a meteoroid in Earth's atmosphere.
- Meteorite - A meteoroid that has hit earth's surface.
- Meteoroids - Piece of interplanetary material that falls toward Earth and enters its atmosphere.
- Milky Way Galaxy - The galaxy that contains our Solar System
- Moon - A natural object that orbits a planet
- Nebula - A large cloud of gas and dust in space that is the first stage of star formation.
- Neptune - 8th from the sun, no atmosphere, furthest out, high methane content, has the great dark spot

- Neutron Star - A star that has collapsed under its own gravity
- Orbit - The path of an objects as it revolves around another object in space.
- Parallax - The apparent shift in position caused by the motion of the observer.
- Planet - A large body in space that orbits a star and does not produce light of its own.
- Planetary geologist - A scientist who studies the rocky planets in our solar system
- Protostar - A contracting cloud of gas and dust; the earliest stage of a star's life.
- Red Dwarf - A very small star with low temperature, reddish in color.
- Red Giant - A large, reddish star late in its life cycle
- Revolution - The movement of an object around another object.
- Rotation - The spinning motion of a planet about its axis.
- Satellite - An object that revolves around another object in space
- Saturn - 6th planet from the sun, Saturn is the second largest planet and is best known for its fabulous ring system that was first observed in 1610 by the astronomer Galileo Galilei
- Solar eclipse - The blocking of sunlight to Earth that occurs when the moon is between the sun and Earth.
- Solstice - The two days of the year on which the noon sun is directly overhead at either 23.5 degrees South or 23.5 degrees North.
- Spectrometer - An instrument used to measure properties of light over a specific portion of the electromagnetic spectrum
- Star - A celestial body of hot gases that radiates energy derived from thermonuclear reactions in the interior.
- Supergiant - An extremely bright star of very large diameter and low density
- Supernova - The explosion of a dying giant or supergiant star.
- Telescope - A device built to observe distant objects by making them appear closer
- Tide - The rise and fall of the level of water in the ocean.
- Universe - All of space and everything in it.
- Uranus - 7th planet from Sun; is large & gaseous, has a distinct bluish-green color, & rotates on an axis nearly parallel to the plane of its orbit
- Venus - 2nd planet from Sun; has a dense atmosphere & known to rain acid w/ high temp.'s, a surface w/ craters, fault-like cracks, & volcanoes; sometimes called Earth's twin
- White dwarf - The remaining hot core of a star after its outer layers have expanded and drifted out into space. This is what will happen to our sun.