



Experience **Astronomy** **Elementary** Scope and Sequence

Lesson 1: Why God Loves Astronomy

God is the creator of the sun, moon, and all the stars in the sky. God gave us the lights in the sky to give us the rhythms of day and night, to help us mark the seasons of the year, and to give us light so we can see.

Lesson 2: Who Moved the Sun?

God designed the Earth to spin around on its axis. When the Earth does this one time, we call this a day. To help us organize our lives, we've divided a day into 24 hours.

Lesson 3: Blazing Summers, Freezing Winters

God designed the Earth to revolve around the Sun, which is our main source of light and heat. When the Earth goes around the Sun one time, we call this a year. Since the axis of the earth is tilted, there are times of year we get more sunlight and other times we get less sunlight, depending on where we are in our path around the Sun.

Lesson 4: Spring Forward, Fall Back

As the Earth goes around the Sun, there are a couple days every year we have the same amount of daylight hours as we have nighttime hours. These days are called "equinoxes."

Lesson 5: Hello Moon!

God gave the Earth a satellite we call the Moon. As the Moon revolves around the Earth, we can see more or less of the side of the Moon that is lit up by the Sun. We call these different shapes of the moon "phases."

Lesson 6: There Are Giants in the Sky!

On a dark night, you can see thousands of stars in the sky! For thousands of years, people have imagined the stars make shapes or pictures in the sky. We call these pictures "constellations."

Lesson 7: From North Star to Southern Cross

God gave us the stars in the sky to serve as signs to help us find our way. Using certain stars in the sky, people can easily find north, south, east, and west.

Lesson 8: Stories in the Sky

In modern times, astronomers count 88 constellations, but many of these constellations go back to ancient times. There were many groups of people from long ago who told mythological stories about these shapes in the sky.

Lesson 9: More Stories in the Sky

There's a special group of 12 constellations called the Zodiac. These are special because, when standing on the Earth, these constellations seem to line up with the Sun in the sky at different times of the year as the Earth makes its way around the Sun.

Lesson 10: Watch Out for Wandering Stars!

In ancient times they were called the wandering stars—dots of light that moved differently than all the other stars in the sky. Today we call these dots of light “planets,” and we know they are not stars but large objects revolving around our star, the Sun.

Lesson 11: Around the World

At first, people believed the world was flat, like a disk floating in the air. But hundreds of years before Christ, people started to believe the world was actually a sphere, like a ball. They knew this because as they traveled north or south, they saw new stars in the sky, showing they were not traveling on a flat surface but a curved surface.

Lesson 12: Blackout!

Solar eclipses are some of the most amazing events to witness in the sky. They happen when the Moon comes between the Sun and the Earth, blocking the Sun's light.

Lesson 13: Bye Bye Moon!

Lunar eclipses are wonderful nighttime events to witness. They happen when the Sun's light is blocked from hitting the Moon for a short time because the Earth gets in the way. The shadow of the Earth falls on the Moon.

Lesson 14: Falling Rocks and Shooting Stars

Meteors are sometimes called “shooting stars,” but they aren't stars at all. Instead, they are bits of rock slamming into the Earth's atmosphere and burning up, creating big streaks of light in the sky. Sometimes parts of these rocks make it all the way to the Earth's surface.

Lesson 15: Galileo's Head was on the Block

Astronomers in the 1500s and 1600s made some very important discoveries about the Earth. They helped to show others the Earth was not the center of everything. Instead, the Earth and all the other planets revolve around the Sun.

Lesson 16: Earth – Baby Bear's Porridge

What makes the Earth so special? Why do we find life on Earth, but we don't find life in other places in the solar system? This lesson explores some of the things that make the Earth so unique.

Lesson 17: The Man on the Moon

The moon is Earth's only natural satellite—close enough we can see what the surface looks like with just our eyes. This rocky world looks like a good place to set up a colony, but just how easy would it be?

Lesson 18: Mr. Golden Sun

At the center of the solar system is a star that has 600 times more mass in it than all the planets combined! We call it the sun. Every second it puts out a lot of energy—and the secret to its energy is deep down in the core.

Lesson 19: Mercury – The Swift Messenger

Close to the sun is a barren rocky world we call Mercury. The smallest of all the planets, Mercury is covered in big cliffs, deep craters, blazing hot days, and freezing cold nights. Could we set up a colony on such an extreme place?

Lesson 20: Venus – Earth's Fiery Sister

The second planet from the sun—nearly the same size as the Earth—is covered in bright clouds, but beneath those clouds is a mysterious, terrifying world. If we drop beneath those clouds, will we find a planet suitable for a human colony?

Lesson 21: Mars – The Red Planet

Named after the Roman god of war, the planet Mars looks like a drop of blood in the sky. But as we get closer, we see this rusty, red planet is home to some record-setting surprises. Would this desert world be a good place to set up a home base?

Lesson 22: Space Rock 'n' Roll

For many years, astronomers wondered why there was such a big space between Mars and Jupiter. It looked like a perfect place for a planet. Finally astronomers started seeing not just one planet but many, many space rocks. Today, we call it the Asteroid Belt.

Lesson 23: Jupiter – By Jove! It's a Giant!

Ancient people named Jupiter after the king of the gods. Little did they know that Jupiter is the king of the planets in the solar system. It is the largest, fastest spinning planet—having more mass than all the other planets combined times two!

Lesson 24: Saturn – Put a Ring on It

Ancient people believed Saturn was the planet furthest away from the Earth as it moved slowly through the sky. But what they couldn't see was all of Saturn's beautiful rings that make it the most recognizable planet in the solar system.

Lesson 25: Uranus – A Topsy Turvy World

No one in the ancient world knew about Uranus. It's so dim in the sky, no one paid any attention to it. But when people saw it through their telescopes for the first time, they knew it was no ordinary light in the sky, but a new planet going around our sun.

Lesson 26: Neptune – The Blue Ice Giant

At first Neptune might look like a boring blue ball. But don't get too close, because Neptune is home to the fastest winds in the whole solar system. This frozen world is full of surprises.

Lesson 27: Ice, Ice Baby (Too Cold)

Beyond Neptune are millions of little (and big) chunks of ice in a region called the Kuiper Belt. This is an area full of dwarf planets, comets, and things called "cubewanos." It's an icy, cold place that will take us a long time to explore.

Lesson 28: Planets Galore!

When you think of planets, you probably think of the ones going around our sun. But there are thousands and thousands of other planets out there orbiting other stars. And we are discovering new "exoplanets" every year.

Lesson 29: The Immeasurable Heavens

We can see over 9000 stars in the night sky without using a telescope. When we use powerful telescopes we can see beyond these stars to see not just more stars but whole galaxies full of billions of stars. It's hard to imagine just how big the universe is.

Lesson 30: The Heavens Are the Lord's Heavens

Psalm 115:16 says, "The heavens are the Lord's heavens, but the earth he has given to the children of man." As amazing as the rest of the universe is, the more we explore it the more we learn: there is no place like home.