

Order in the Cosmos

By RLD Editorial Team

for use as
STEP 1 

Lesson 2 Focus:

A powerful God created an orderly world.

Echoes Focus:

That your students trust God in the midst of specific and complex situations in their lives.

Lesson 2 Bible Basis:

Genesis 1; 8:22;
Romans 1:20a

Lesson 2 Memory Verse:

For since the creation of the world God's invisible qualities—his eternal power and divine nature—have been clearly seen, being understood from what has been made.
—Romans 1:20a

Students will learn about the awesome majesty of God displayed in His creation from both very large and very small perspectives as they watch a video comparing atoms and stars.

Materials:

Internet access

It's easy to take awe-inspiring things for granted when we see them all the time. Consider something we do every day: smiling. Each time it happens, it should blow your mind.

Here's an overview: Neurons in your cerebellum, which is the part of the brain that controls voluntary muscle movements, send a signal to your face via cranial nerve 7. Twelve muscles respond by working in perfect synchronization to produce a smile.

Imagine how complicated it would be if you had to think through the entire process. "Okay, cerebellum, I'm happy. Find cranial nerve 7 and send the message to operate my Zygomaticus major, Zygomaticus minor, and all the other muscles at exactly the same time. By the way, please be sure to contract them just enough for a nice smile, not enough to make me look like The Joker."

Thankfully, you don't have to consider all that. A simple thought flashes through your head, like "I'm about to get my picture taken" or "I want to impress that person" . . . and a smile happens!

➤ **Now that you understand part of the process, does smiling seem kind of impressive? Why or why not?** (Some of your students may think it's pretty cool. Others may be committed to the teen creed of "I don't care." Let them answer honestly.)

Here are some other details we take for granted. For example, your body: a person who weighs 155 pounds might look ordinary. But actually, he contains roughly 7 billion billion

billion atoms, or 7 followed by 27 zeroes. That means you may contain more atoms than there are stars in the known universe! Our universe contains so much detail and complexity.

Speaking of those stars—from earth we only see a tiny fraction of the stars that are out there. It's still cool to look up when you consider that each pinpoint of light is a gigantic burning ball of gas that's trillions of miles away!

And here's another amazing fact: in the known universe, scientists estimate there may be as many as 300 sextillion stars. Let's put that another way. If every star was the size of a grain of sand, and you divided those stars equally among all the people on earth, every human being would get 5,000 cups full of stars!

➤ **How do you feel when you think about very small things, like the atoms in our body, and very large things like the universe?** (Many of your students will probably feel some sense of amazement.)

It's easy to take things like smiling, or your body, or the stars in the sky for granted. But when we look deeper, ordinary things become amazing! Let's watch a short video that helps us understand a little more about very large things like the universe, and very small things like atoms.

Show your students the following video [1:09].

The universe size comparison: Cosmic eye

<https://www.youtube.com/watch?v=P9CqgvCvzq0>

➤ **What was the most incredible part of this video to you?** (Accept all reasonable answers.)

There's no doubt that our universe is an awe-inspiring place! Today, we're going to study the awesome God who made it all. He created the 7 billion billion billion atoms inside of you and the 300 sextillion stars in the known universe. Let's check it out...

Resources:

Does It Take Fewer Muscles to Smile than It Does to Frown?

<https://www.straightdope.com/columns/read/2489/does-it-take-fewer-muscles-to-smile-than-it-does-to-frown/>

How Many Atoms Are in the Human Body?

https://education.jlab.org/qa/mathatom_04.html

How Many Atoms Are There in the Universe?

<https://www.universetoday.com/36302/atoms-in-the-universe/>

Observable Universe

https://en.wikipedia.org/wiki/Observable_universe

How Many Grains of Sand Are There in a Cup of Sand?

<https://www.quora.com/How-many-grains-of-sand-are-there-in-a-cup-of-sand>

(Continue on to Steps 2 and 3 in your teacher's guide; your Step 4 appears below.)

high school



Lesson 2 / September 8, 2024

Order in the Cosmos

for use as
STEP 4

Lesson 2
Focus:

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Echoes Focus:

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Lesson 2
Bible Basis:

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Romans 1:20a

Lesson 2
Memory Verse:

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—Romans 1:20a

Materials:

None

Today we've learned that God hasn't left us on our own in this great big universe, but that God is intentional in His creating and His continued interactions with His creation—us! But in the face of chaos and challenges, this can be hard to believe, and it is okay to talk about that. It is normal to wonder where God is when we witness and encounter disorder, destruction, or despair.

➤ **Does the world ever feel more chaotic than orderly to you? Share about that.** (Accept all reasonable answers. Often, the natural world and people's actions within it can seem chaotic and scary such as when we witness rising tides and hurricanes, the prevalence of mass shootings, and more. It may also be personal circumstances, changes, or choices that cause a student to feel uprooted or uncertain.)

➤ **Do you personally ever feel out of control or overwhelmed by change? Share about that.** (Accept all reasonable answers. There are many things we can't control or struggle to make sense of—how people treat us, the loss of a friend or family member, poverty, addiction, questions about the future, and more.)

Optional: If you have the time and appropriate space, do this activity together. Otherwise, encourage students to make time for this in the coming week.

When you feel overwhelmed by the world or your personal circumstances, you can turn to God. Remember that God has intimate knowledge of this world and of you. God cares for and remains involved in His creation. This week, try taking a nature walk to turn your focus to God. You don't have to go deep into the woods to walk in nature—nature is all around you. As you walk, record the natural systems and cycles you observe. Notice your feet on the ground, how you don't float away. Take deep breaths in and out. Give God your chaos, changes, and challenges by letting a leaf go in the wind, or blowing dandelion seeds. Imagine

each leaf or seed blowing away is a problem or worry you're giving over to God. Pick up a token amount of dirt to remind you that the God who holds all this together never lets go of you.

Close in prayer.

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