SCENIC SCIENCE **LESSON 1 CHEMISTRY**

MATTER: WATER

Ready Answer

Lesson #: Vol 1 Lesson 1a - **Level 1**
MATTER: Water
Devotion 1: Genesis 1:1-3 In the Beginning, God…



Lights, Cameras…

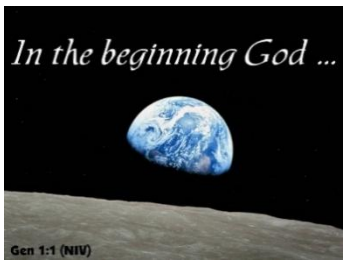
Scene 1: Our story begins without the heavens and the earth – dark and empty.

Scene 2: Then, God created our universe – the beginning of time and space.

INSTRUCTIONS:
1. Complete Lab Explorations Level 1
2. Challenge – Review and/or complete Level 3
3. Apply what you learn in the lab

FOUNDATIONS

GENESIS 1:1 [1]*In the beginning, God created the heavens and the earth.*



Earthrise was taken by NASA.

"In the beginning, God…" Genesis 1:1 tells us 1) there was a time when our world didn't exist, and then, 2) God created the heavens and the earth. From the Bible, we can know how and when things happened. While science can help us **know**. God's Word is a **higher way of knowing**.



So, what does the Bible tells us about the CREATION event?

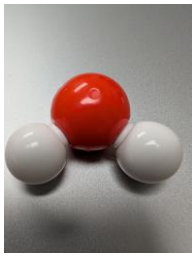
a. **In the Beginning tells us WHEN!**
b. **God Created tells us WHO!**

SCENE #1 – DARKNESS with no earth or heavens (no sky, planets, stars, or galaxies)
SCENE #2 – CREATION through an act of GOD.

Only God could tell us about the Beginning because no one else was there (God the Father, Son, and Spirit were acting together to create). No earth-based life existed; therefore, the only eyewitnesses were God. However, all of creation is evidence for the beginning. Even scientists have concluded our universe had a beginning.

MATTER – What was created?

Genesis 1:3 tells us, the Spirit of God moved on face of the waters. 2 Peter 3:5 says the earth was formed out of water. The earth, the heavens (sky and space), and water – all are matter.



1. **Matter** is anything that has mass (aka inertia) and occupies space.

2. Matter is made up of atoms. **An atom** is smallest unit of matter.

3. An **element** is a pure substance made up of only one type of atom.

4. **Water** is a compound made of 2 elements, Hydrogen (H) and Oxygen (O). A compound, like a compound word (play + ground) is made of two words, a compound substance is made of two or more elements.

OBJECT LESSON

Water covers 2/3rd's of earth's surface. It's the most abundant compound on earth's surface. Water also makes up about 2/3rd's of our bodies. When God created the earth, He made it "to be inhabited." The amazing substance, H_2O (water), makes that possible.



TEMPERATURES OF CHANGE:

0°C	100° C	32° F	212° F

1. Below _____ (Celsius) – water freezes.
2. Above _____ and below _____ (Celsius) – water is a liquid.
3. Above _____ and below _____ (Fahrenheit) – water is a liquid.
4. Below _____ (Fahrenheit) – water is a solid.
5. Above _____ (Celsius) and _____ (Fahrenheit) – water boils and vaporizes.

At 0° Celsius or 32° Fahrenheit water freezes.
At 100° Celsius or 212° Fahrenheit water boils and turns to vapor.

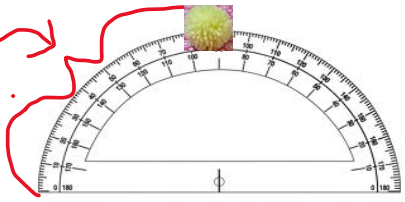
STATES OF MATTER

Water on earth is found in 3 states of matter: **solid, liquid, and gas**. Very few substances exist in 3 different states of matter at earth's temperature. Temperature changes cause phase change. If water didn't exist in all THREE STATES OF MATTER at earth temperatures, life couldn't exist on earth.

EVAPORATION OF WATER (without boiling or high temperatures)
There's no place on earth where air temperatures could boil water (unless there's a fire or a lava flow). Water is uniquely able to "evaporate" into the air based on the angle and color of light from our sun. Water evaporates best under green light at 45° angles. The peak color of our sun's light is green and the average angle of the sun is close to 45°. All these "***just-right***" or **Goldilock's Effects** are properties of God's creation.

EXPERIMENT

Explore: Use a protractor to estimate angles of the sun. Find a yellow pom-pom to represent the sun. Explore the positions of the rising and setting sun on the outer arch of the protractor.



1. Find 90° and 0° on the outer arch. Think of 0° as the ground or horizon. What is the angle formed from the ground to the yellow pom-pom the following times:
   a. Sunrise _____
   b. Noon _____ (assume the highest Sun position possible)
   c. Sunset _____

Where (what angle degree) would indicate half-way between noon and sunrise: _____

TAKE

Water is also .

We should thank God for all we know about our earth. Without the earth's resources, like water, we couldn't live. The Bible tells us God created the earth to be inhabited. From science, we can learn about nature and even about ourselves, but we can't answer the truly important questions.

REMEMBER THESE THINGS –

Our lessons will explore just how incredible it is! The Bible tells us Christ is our Living Water. It symbolizes life because without it, there is no life.

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Action... (See water in action!)

Take 1: Blow up a balloon. Tie it off.

Take 2: Rub it on your hair.

Take 3: Turn on a water faucet so there is a steady, but small stream of water coming out.

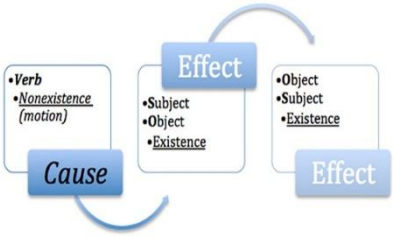
Take 4: Place your "charged" balloon near, but not touching the water stream. (Don't let the balloon get wet. If it does, just dry it and try again.)

Response: What happens? We can discover a CAUSE/EFFECT relationship, but we can only guess why? 1) Explain the cause/effect you observe. 2) Guess why?

Create your own "memory keeper. It may be a box, a shelf, an altar, tree, mobile, almost anything that can hold or display your memory tools. What **MARKER** can you find to remind you of God's blessing of water (IDEAS: a leaf, seed, or round stone you can paint)?



Our first marker to REMEMBER our LORD should be the Bible. It answers questions that complete the story about us, creation, our history, and purpose. His Word is powerful. In John 1:1 says, "In the beginning was the Word, and the Word 1.flesh in Jesus Christ, His Son.



God gave us the ability "to know and to do science," so we could explore our world from the time we are born. Through it we learned to walk, to hold things, to move things, to act, observe, and know. We saw CAUSE/EFFECT relationships as babies. Science is simply a way of knowing. Reading the WORD is a **higher way of knowing**.

DRAW

1. When you think about doing science, what tools do you think about? Draw a tool you would use to measure something.

2. Draw a timekeeper. Science believes there was a START TIME, a beginning. Does the Bible agree? Y / N (circle your answer)