

## **LESSON ACTIVITIES**

### ✓ **Further Understanding:** Investigation/Reasoning Skills

#### **The Building Blocks of Creation**

All non-living and living things have three attributes: matter, energy and design. Matter is physical material that has mass and takes up space. Energy exists in different forms: kinetic (motion), electromagnetic (heat/light), and potential (meaning it exists in matter but is yet to be used). Design is the information that God has programmed into everything he has made so it functions in a purposeful way. These three things can be seen in the smallest unit or element of matter, the atom.

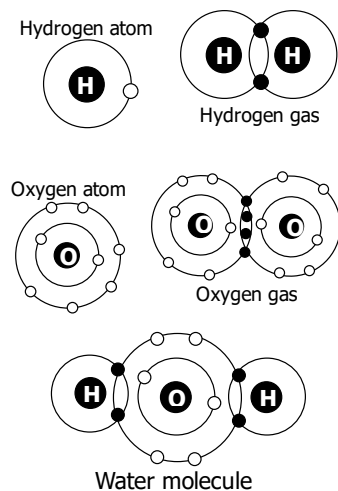
The atom is the basic building block of everything in the material world and is so tiny that it can't be seen. Each atom is a million times smaller than the thickness of a human hair. Like everything else in creation each atom consists of: matter, energy and design.

- Matter – The matter of an atom is made up of minute subatomic particles: neutrons, protons and electrons. The proton and neutron form the center (nucleus) of the atom and make up the majority of the mass in the atom. Most of the atom consists of space through which the electrons move randomly. It is interesting that scientists don't know what holds the atom together and keeps the electrons from spinning off into space. How does the memory verse from Colossians address that question?
- Energy – Besides the motion of the particles (kinetic energy) and the attractive and repulsive force that exists between them (electromagnetic energy), the atom contains potential energy. The atomic bomb and nuclear power plants utilize the potential energy locked up in the atom.
- Design – Each type of atom was designed as its own kind with a unique number of protons. Atoms link up with other atoms in specific ways to form the molecules, which make up all material things. The atoms in a molecule bind together by either sharing or transferring electrons. Compounds are made when two or more different types of atoms link together as molecules.

**Example:** Two basic elements are hydrogen and water. When two hydrogen atoms link together, they form hydrogen gas. When two oxygen atoms link together, they form oxygen gas. However, when two hydrogen atoms link with one oxygen atom they form a water molecule.

**Questions:** What three attributes do all things consist of? What is an atom? What are atoms made up of? What holds atoms together? What are molecules? How do they hold together?

**Thought Questions:** Why couldn't the atom and the molecules come into existence by time and chance? What can be learned about God from the atom and the formation of molecules?



## Beginning 3 – Activities

✓ **Craft:** Tangram Puzzle

As a reminder that God created the matter that things are made of and a place to put them in, make a tangram puzzle on a blank piece of paper.

Instructions: Print the tangram pieces for the children to cut out. Give them a blank half sheet of paper to see if them can reproduce one of the shapes or come up with their own design.

✓ **Investigation Activity:** Mobius Band or Strip

As a reminder that God is infinite and eternal, make a Mobius band. This is a visual demonstration to picture that when you divide infinity you still have infinity.

1. Cut strips of paper from construction or butcher paper that are about 1 ½ inches wide and 18-24 inches long. Holding both ends of the paper twist one end 180 degrees and tape it to the other end to make a loop with one twist.
2. Ask the children what they think will happen when you cut the paper all around down the center of the strip. Cut the paper down through the middle of the strip and demonstrate that you still have one strip, not two.

✓ **Game:** What am I thinking?

As a reminder that all things existed first in the mind of God as he planned and designed his wonderful creation, play “What are you thinking?”

Instructions: Have each child think of something specific that God created (whale, eagle, apple tree, etc.). The other children then ask yes or no questions to figure out what the others are thinking of. Examples: Is it alive? Does it walk on four legs? Does it live in water?

✓ **Discovery Activity:** Making Chocolate Milk

Make chocolate milk with the children and ask them the steps of doing so and compare it to God’s act of creation.

1. If we are going to make a cup of chocolate milk, what do we need to make sure we have first? A cup to put the milk in. (A place to put matter.)
2. What do we need to have next? The milk and chocolate. (The matter to make the chocolate milk.)
3. What do we do next? Mix the milk and chocolate together. (Together they make something different than they were before.)

Beginning 3 – Activities

