LESSON ACTIVITIES

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

The Laws of Science

Theories are ideas people propose to explain reality that can't be proven and aren't accepted by everyone. The two main theories explaining the existence of the universe and life on earth are the creation theory and the theory of evolution.

In contrast to theories, there are laws of science or nature, which govern all of God's creation. These laws have been proven through experimentation and observation and are accepted by all of science. The first law of science is the First Law of Thermodynamics or what is called the Law of Conservation of Energy.

In terms of the law, conservation means to maintain a certain quantity of something during a reaction, change or transformation. The law states that in a closed system like our universe, energy and mass (matter) can neither be created nor destroyed. Energy or matter can be changed from one form to another but the total amount of them in the universe remains the same.

The theory of evolution says that energy and matter created themselves through natural processes over billions of years ago, but since the law states that energy is neither created nor destroyed but just changed, theory of evolution contradicts the Law of Conservation of Energy. The theory of creation says that energy and matter cannot create themselves through natural processes. They had to be created by a supernatural force outside of nature. Supernatural of course refers to God and means to exist outside the natural or physical world. The theory of creation says that God put energy into the universe.

The second law of science is the Second Law of Thermodynamics or the Law of Increasing Entropy. Entropy is the tendency of things to break down or fall into disorder. This breakdown occurs because as energy and matter are changed they take on a form that is less useful, so even if the amount of them remains the same, it isn't as useable as it was before. This law means that in a closed system like our universe over time things become more random, disordered, and less useable.

The theory of evolution states that over billions of years the first matter that came from nothing became more organized through natural processes, meaning that everything is improving, not breaking down. That contradicts the Second Law. The theory of creation states that the universe God created was very good but over time is breaking down and becoming less ordered. Furthermore, according to the Bible, the earth will eventually be destroyed and God will create a new heaven and earth. The theory of creation fits reality as it is evident that creation is breaking down, not becoming more ordered.

Questions: What is the difference between a law of science of science and a theory? What is the Law of conservation of Energy? Can that law be observed to be true? In what way? What is the Law of Increasing Entropy? Can that law be observed to be true? In what way? What is the theory of evolution? What laws of science does evolution contradict? Can evolution be observed to be true? What is the theory of creation? Was creation observed?

How do we know creation is true if it couldn't be observed? What do the two fundamental laws of science reveal? Why do people who believe the two laws of science still believe in the theory of evolution?

- ✓ **Craft:** Light Burst

  As a reminder that there was only darkness when God created light, make a scratch off picture.

  Materials: Scratch-off paper (purchased or made by the children), pointed sticks or pencils

  Preparation: Children can make their own scratch off paper over a couple weeks by coloring half of a piece of paper completely with different colors. Once the paper is colored, it is then is completely colored over with a black crayon or thick black paint.

  Instructions: Have the children draw a starburst pattern, star or sun on the scratch-off paper.

- ✓ **Discovery Activity:** The Color of Light

  If visible light is put through a prism and the light waves are bent, they break into six different colors (red, orange, yellow, green, blue, violet). Try to do this with a prism and a source of light in a darkened room. A CD can work as a prism to break up light too. In a rainbow, water droplets in the air act like a prism and bend the light waves, breaking them up into color bands. White (visible) light is made up of these colors or light waves blended together.

  The way colors appear in a rainbow (red, orange, yellow, green, blue, violet) may be remembered by memorizing the name "ROY G. BV". This used to be "ROY G. BIV", because the area between blue and violet was called "indigo". Indigo is no longer referred to as a separate color in the visible light spectrum; therefore, Roy now has no vowels in his last name.

  To see how colors blend together you can make a color wheel.

  Instructions: Use the bottom of a glass to draw a circle on a piece of cardstock paper and cut it out. Divide the circle into six equal pie pieces. Color in the sections of the wheel with the six main colors of light (red, orange, yellow, green, blue, violet). Stick a round toothpick through the middle of the wheel. Spin the wheel like a top. The colors should blend together into a pale, almost white color.

- ✓ **Game:** Stumbling in the Dark

  As a reminder that light is what makes things visible and is essential for life and health, play "Stumbling in the Dark".

  Instructions: Blindfold the children and have them walk from one side of the room to the other without stumbling over one another and obstacles that you have put in the way. Children can do this a few at a time or all together as a group. You can time who is able to do it the fastest, then take off the blindfold, and time them again. Talk about the importance of light.