**Day 3 Experiment**

**DNA Is Everywhere**

See Onion DNA Using Kitchen Appliances

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**Materials**

Prepare 1 per table or only 1 for an upfront demo. (This works well as an upfront demo.)

- Medium-sized onion
- 1 t. salt
- 1 1/2 c. water
- 2 T. dishwashing liquid
- 1/2 t. meat tenderizer
- 3/4 c. 91% rubbing alcohol (isopropyl)
- Cutting board and knife
- Blender
- Strainer
- Mixing bowl
- Spoon
- Clear glass (12 oz. or larger)
- Craft stick
- Babel Legend cards (11-7-070), 1 per child

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**Class Time Directions**

Today, at *The Incredible Race*, we’re exploring why we have beautifully different shades of skin and why we don’t all look the same. We know from studying the Bible that all human beings are part of the same race—the human race! We all share a common ancestor in Adam and Eve. That means we’re all related, no matter where we live or what we look like! All humans and all living things have something inside them that helps to make them who they are. It is called deoxyribonucleic acid or DNA for short. DNA is found in every living cell of every plant and animal (that we know of). It is like a recipe book providing information for building and running the plant or animal.

What are some things that our human DNA provides information for? Take answers: eye color, eye shape, skin shade, height, face shape, ear structure, finger length, etc.

Because all humans come from the same two humans, we all share very similar DNA. Only a very tiny percentage of our DNA is different among us.

God gave every kind of creature some unique DNA. Yet similar organisms often have similar DNA because they perform the same tasks. For example, both cats and dogs need DNA for making legs and tails, and vegetables and fruits need DNA for growing roots and stems.
Despite the differences, most living things perform some similar functions. For this reason, even human DNA has some similarity with an onion’s DNA. And that’s a good thing! Your body can easily break down the sugars and other molecules in the onion to build molecules for itself.

DNA is so very tiny that we can’t see it just by looking at our bodies. But we are going to do an experiment today with an onion where we will extract its DNA and we will be able to see it!

After doing our experiment extracting DNA from an onion, it will look like a messy glob. But that’s not how DNA appears in cells. DNA is neatly stored in a small compartment called the nucleus. The DNA is folded up many, many times so it can fit in the nucleus.

This folding is not random but carefully controlled and specific. To give you an idea about this marvel of packaging, imagine folding a long spaghetti noodle—stretched across the entire United States—and storing it in a small box so that any portion can be unfolded, copied, and used at any time. That’s the wonder of DNA.

The DNA molecule is often compared to a book. The DNA bases (A, C, T, and G) form words called genes. The genes contain all sorts of information necessary for life. As we continue to learn more about this wonder, we can appreciate the wisdom and goodness of the author, God. He is the author of life, who created DNA to provide the information necessary for the development and growth of living organisms, including you and me.

Think about this the next time you eat an onion. Let’s get started with our experiment to see some onion DNA!

**Tip Corner**

- This experiment works best with Juniors.