

# STEM ACTIVITY

## Nebuchadnezzar's Dream

Total Time: 25 minutes  
In Class Time: 10 minutes

### You will need:

- Baking soda
- Ground turmeric & rubbing alcohol
- Water
- Two small bowls, cups, or jars
- Cotton swabs
- Paper
- Washcloth or paper towel



**STEP 1:** Prepare secret message sheets in advance. Mix one tablespoon (~15 mL) of baking soda with an equal amount of water in a small bowl, cup or jar. This is the secret ink. In a separate container, mix 3 tablespoons of rubbing alcohol with a half teaspoon (~2.5 mL) of ground turmeric powder. This is the solution you will use to reveal the message.

**STEP 2:** Dip the cotton swab in the baking soda solution and use it to paint an invisible message on a sheet of paper. (Be careful not to get the paper too wet!) Write a word or words from this lesson's SuperVerse on each page. Plan to have one sheet for each child in your group, or enough for children to share, plus one (for you to use in demonstration). Include the whole verse.

**STEP 3:** Once the papers have dried, wipe off any excess baking soda from the surface of the paper with a washcloth or paper towel.

**STEP 4:** Gather the children. TEACH: God revealed a message to King Nebuchadnezzar through a dream that only Daniel could interpret. Would you like to reveal a secret message?

**STEP 5:** Demonstrate how to reveal the secret message by painting the alcohol-turmeric solution onto the page. The words will appear brownish-red.

## EXPLAINING THE SCIENCE:

The baking soda solution is white, like the paper, and therefore invisible once the water has dried. The turmeric, which is initially yellowish orange, acts as an acid/base indicator. It changes colors when its acids encounter the basic (alkaline) baking soda in the paper fibers. Thus, your message is revealed!