

# Chemical & Physical Changes

Matter is a substance made up of different particles and takes up space. Depending on temperature, matter can exist in three different states: solid, liquid, and gas. These states of matter can be changed from one state to another either physically or chemically. Use this fun, at-home experiment to investigate chemical changes!

## BEFORE BEGINNING THIS ACTIVITY, BUILD BACKGROUND KNOWLEDGE.

On a tablet or computer watch this video to learn about mixtures and chemical changes:

<https://tinyurl.com/ChemicalChangesCrash>

After watching the video, have a discussion with your child. You may ask: What is a chemical change? Can a chemical change be undone? Why or why not?

## SORTING ACTIVITY

**MATERIALS:** 1 marker, 2 notecards, images of physical and chemical changes (attached)

1. With your marker, write “physical change” on one notecards, and “chemical change” on the second notecards. Lay out the notecards on two opposite sides of the table.
2. Have your child cut out each of the images.
3. Tell your child to sort through the images and place under the correct category – either “physical change” or “chemical change.”
4. Discuss with your child why they placed each image in the category that they did.

## USING A CHEMICAL CHANGE TO WRITE A SECRET MESSAGE

**MATERIALS:** water, baking soda, lemon juice, coloring dye, measuring cup, 2 cups, cotton swab (can use paint brush), paper

1. In a cup, mix  $\frac{1}{4}$  cup of water with  $\frac{1}{4}$  cup of baking soda.
2. In a separate cup, mix some lemon juice and coloring dye.
3. Stick a cotton swab into the baking soda mixture.
4. Take your cotton swab and write an invisible message onto your piece of paper. Let it dry.
5. Take another cotton swab and dip it into the lemon juice mixture.
6. Paint the mixture on top of your dried message on the paper.
7. Watch your secret message come to life!

**AFTER THE ACTIVITY:** With your child, have a discussion about what occurred in the experiment. Encourage your child to make connections between what they learned prior to the activity to what happened in the activity.

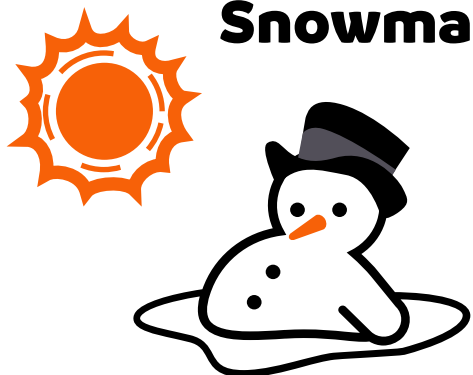
- Was this a chemical change or a physical change? How do you know? What do you think would happen if you added more/less baking soda? What do you think would happen if you added more/less lemon juice?

**ADDITIONAL RESOURCES:** Check out these books on Reading Is Fundamental's (RIF) Literacy Central at [RIF.org/Literacy-Central](http://RIF.org/Literacy-Central) to deepen your child's understanding of chemistry concepts!

- *Experiments with Solids, Liquids, and Gases* written by Christine Taylor-Butler
- *A Little Giant Book: Science Experiments* written by H.J. Press
- *Marie Curie* (National Geographic Kids) written by Philip Steele
- *Science of Fun Stuff: Unmasking the Science of Superpowers* written by Jordan D. Brown

# Chemical & Physical Changes

## Melting Snowman



## Baking Cookies



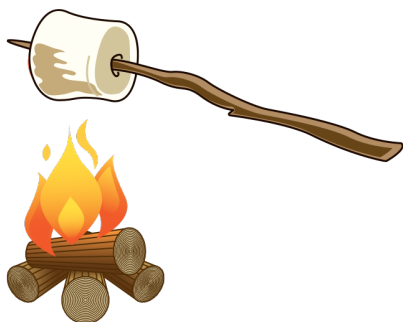
## Rusted Nail



## Boiling Water



## Toasting A Marshmallow



## Crushing A Can

