



# Mummified Apples

Investigate the science behind mummification and its importance in Ancient Egyptian culture. Demonstrate how salt and baking soda act as desiccants to prevent the growth of bacteria as you mummify an apple slice!

## TEKS:

SCI 5.2: The student uses scientific practices during laboratory and outdoor investigations.

SCI 5.2 A: The student is expected to describe, plan, and implement simple experimental investigations testing one variable.

SCI 5.3: The student uses critical thinking and scientific problem solving to make informed decisions.

SCI 5.3 A: The student is expected to analyze, evaluate, and critique scientific explanations by using evidence, logical reasoning, and experimental and observational testing.

## Materials:

- Apple
- 2 cups or glasses
- ½ cup baking Soda
- ¼ cup salt
- Cutting board
- Knife
- Measuring cup
- Mixing bowl

## Experiment/How To:

1. Cut an apple into quarters using the knife and cutting board. **Safety: an adult should assist when using a knife to cut the apple.**
2. Mix together the baking soda and salt in a mixing bowl.
3. Put one apple quarter in a cup or glass and pour the baking soda and salt mixture on top. Make sure the apple is completely covered.
4. Put another apple quarter into a cup by itself.
5. Optional: eat the other two apple quarters as a healthy snack!

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6. Put both cups in a location out of direct sunlight for one week.
7. After one week, discard the salt/baking soda mixture and compare the two apples.

### STEM Connection:

Salt and baking soda are desiccants, or substances that remove water from materials they come in contact with. Covering an apple slice with these desiccants for a week removed all of the apple's moisture, resulting in a shriveled, lighter, *mummified* apple. In contrast, the other apple slice—the one left alone in the cup—most likely rotted over the course of a week. Bacteria that cause rotting need water to survive, which is why the mummified apple was able to resist bacteria growth. Mummifying, or embalming, something helps preserve it for weeks, months, or even thousands of years!

The mummification process was practiced throughout Ancient Egyptian culture. It was thought to prepare the dead for a happy afterlife, so everyone—rich or poor—received some type of embalming after death. Egyptians used a special type of salt called natron, found along the banks of the Nile River, as their primary desiccant, which worked to preserve bodies for a very long time. In Ancient Egypt, mummification could take up to 70 days! Mummified bodies were then wrapped in linen and placed in a sarcophagus—a large stone coffin that was often lavishly decorated. Ancient Egyptians' extensive use of the mummification process has allowed modern-day archaeologists to better understand their lives and culture.

### Career:

*Archaeologists* study the human past through material remains. They study the ancient past as well as the recent past. Archaeology helps us understand where people lived, how they survived, and how cultures have changed over time.

### Resources:

[https://www.rom.on.ca/sites/default/files/imce/rom\\_apple\\_mummy\\_activity.pdf](https://www.rom.on.ca/sites/default/files/imce/rom_apple_mummy_activity.pdf)

<http://www.planet-science.com/categories/experiments/chemistry-chaos/2011/11/mummify-an-apple!.aspx>

[https://www.educationworld.com/a\\_lesson/dailylp/dailylp/dailylp102.shtml](https://www.educationworld.com/a_lesson/dailylp/dailylp/dailylp102.shtml)

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