



Create an Apple Mummy

October is the perfect time of year to experiment with mummies! A body is mummified by removing most of its moisture so that it's difficult for bacteria to thrive and cause decay. You can explore how things are preserved and create your own Apple Mummy with this interesting and adaptable investigation.

You will need:

- 4 plastic cups
- One apple – Paula Red or Macintosh work well
- Table salt
- Baking soda
- Knife
- Bowl
- Measuring cup
- Permanent marker



What to do:

1. Mix $\frac{1}{2}$ cup of baking soda and $\frac{1}{2}$ cup of table salt in a bowl and set aside.
2. Label 4 cups as follows: salt; baking soda; salt & baking soda mixture; control.
3. Slice an apple into 4 approximately equal sections. Place one apple quarter into each of the cups, skin side down.
4. Add enough salt to the first cup to cover the apple. Repeat this by pouring each of the other solids into the appropriately labelled cup. Your control cup will contain the last piece of apple which will remain uncovered. Set each cup aside for four days.
5. Remove each apple slice one at a time and place it in front of the labelled cup. Make some observations about what you see.

Adaptations for older students:

Students can pre-weigh each quarter and record the weight. At the end of the week, each apple piece can be removed and dusted with a paint brush to remove any excess solid. Students can then re-weigh each quarter and calculate the amount and percentage of water lost.

What is happening?

Early civilizations used salt as a preservative. Since there were no freezers or refrigerators salt was a great way to preserve meat, fruit and vegetables. Salt absorbs water from these foods and inhibits the growth of bacteria and mold. In Egypt, mummies were prepared using natron which is a naturally occurring mineral mixture that includes sodium bicarbonate (baking soda) and sodium chloride (salt).

Extensions:

1. Try different varieties of apples. Did the amount of water removed change?
2. Dry the apple slices in different types of salt, such as Epsom or sea salt and compare your results. You can also try to vary the percentage of salt and baking soda to find the perfect mummification mixture.
3. Peel a whole apple and carve a face. Now place the apple in a bowl and cover with salt. Remove after one week and examine your Apple Mummy.