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| **Mummy Experiment**  The earliest Egyptian mummies date back to around 3200 B.C. Hieroglyphics from tombs describe how the mummification process evolved over time.  In the beginning, preparers would simply treat the body by covering it with a natural salt, called natron (baking soda), to help dry it out, & then wrap it in bandages soaked in a type of resin.  Around 1500 B.C., the art of mummification reached its peak. Before treating the body, morticians would remove the brain & many vital organs. Then they would pack the abdominal cavity with natron, sand, or sawdust & immerse the body in more natron for about 40 days. After that, the body was Egyptian mummywashed, repacked with spices & more natron, & wrapped in bandages. The whole process took about 70 days.  **Mummy Experiment**  Have you ever wondered why every time you eat salty foods, you get thirsty? Or why fresh vegetables tend to shrivel up when you sprinkle salt on them? The answer is simple. Salt is a desiccant - it helps remove water from things, including human bodies. Which is why the Ancient Egyptians used salts when they were mummifying bodies.  **Question:** Which salt compounds makes the best mummified apple.  **Hypothesis:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **Materials:**   |  |  | | --- | --- | | 2 fresh apples large box of table salt large box of Epsom salts large box of baking soda eight 12-oz plastic cups measuring cup | large mixing bowl knife masking tape balance paper & pencil |   **Procedure**   1. Slice the two apples into 1/4s so that you have eight slices similar in size. Place a piece of tape on each cup & write the words "starting weight." Select 1 slice, weigh it, & record the weight on the outside of cup # 1. Follow the same procedure with the other seven apple slices until each cup has been labeled with the appropriate starting weight.  If you don't have a scale, try to cut all the apple pieces to the same size. 2. Put 1/2 cup of baking soda into cup 1, making sure to completely cover the apple. Write the words "baking soda only" on the outside label. 3. Fill cup 2 with 1/2 cup Epsom salts & label. 4. Fill cup 3 with 1/2 cup table salt & label. 5. Fill cup 4 with 1/2 cup 50:50 mix of Epsom & table salt then label. 6. jars for holding salt to make a Egyptian mummyFill cup 5 with 1/2 cup 50:50 mix of table salt & baking soda & label. 7. Fill cup 6 with 1/2 cup 50:50 mix of baking soda & Epsom salts & label. 8. Fill cup 7 with 1/2 cup a mixture of 1:1:1 baking soda, Epsom salts & table salt & label. 9. Cup 8 should have just a piece of apple as control for the experiment. 10. Place the cups on a shelf out of direct sunlight & let them sit for 7 days. 11. After a week has gone by, take out each apple slice, brush off as much salt as possible, & reweigh. (Do not rinse the apple off because that will rehydrate it.).   **Data Collection & Analysis:** Compare the starting & ending weights of each slice & calculate the percentage of weight which is moisture lost for each by dividing the difference in weight by the starting weight.  **Conclusion:** (Use the following questions to help direct your conclusion.)   1. Which salt would seem to work best at making an apple mummy? 2. Would you have achieved the same results if you used a whole, un-peeled apple? Try it & find out. 3. What was the point of leaving one of the apple slices in a cup without any salt at all? 4. Where did the moisture in the slices go? How could you confirm this?   **FYI:** Salts & special drying solutions played important roles in preserving mummies, & they also served another purpose. Before refrigerators & freezers, people preserved food by pickling, drying, salting, & smoking. |