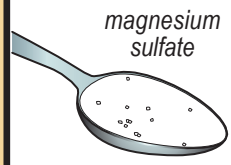
Another FREE SAMPLE LAB from TOPS LEARNING SYSTEMS!

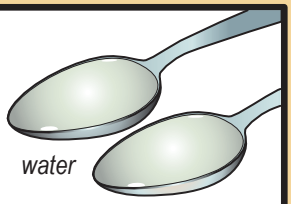
This **TOPS Idea** is taken from an original series of black-and-white line masters, adapted to stand alone as an independent mini-lesson. Please purchase our original book to get the whole in-depth program.

petrified paper

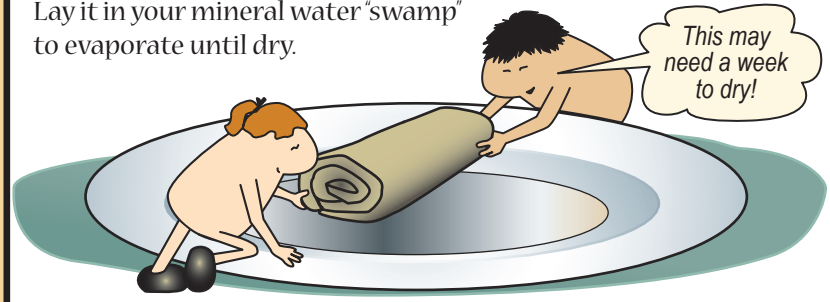
…adapted from **ROCKS & MINERALS #23** by TOPS Learning Systems



1. Mix a *level* tablespoon of Epsom salts (magnesium sulfate) with 2 tablespoons water on a plate.



2. Fold a paper towel into quarters and roll it into a "log." Lay it in your mineral water "swamp" to evaporate until dry.

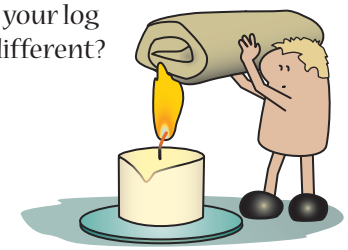


3. Wood petrifies (turns to stone) as dissolved minerals in water slowly replace wood fiber. How might your log model this process? How might it be different?

4. Wait several days until your log is completely dry.

a. Evaluate your prediction.

b. Does your petrified log burn?



OBJECTIVE

To model how dissolved minerals petrify wood.

LAB NOTES

Photocopy the activity above for each student or lab group.

Step 1. More than a *level* tablespoon will create problems. A mineral crust will form and slow the drying of the "log" from a matter of days to possibly weeks.

EXTENSION

Grow stalactites and stalagmites! Use a strip of paper towel to wick a solution of Epsom salts through a gap of about 1 cm from a smaller plate resting on a larger one. The solution will first flood and crystallize on the bottom plate, but as the drip slows, first a stalactite forms on the end of the towel, then a stalagmite where the drips lands. Slower drips and drier air favor faster growth. Add more solution to the top plate as needed. These structures are hollow and will crumble easily.

MATERIALS

- Epsom salts (magnesium sulfate).
- Plate(s) and tablespoon.
- Paper towel, candle, and matches.

ANSWERS

3. Similar: Dissolved salts will likely soak into the paper towel and remain there as water evaporates. The log might harden like stone. Different: These minerals will add to, but probably not replace, the paper fibers over the relatively short time needed for this lab. *(Actual petrification occurs over hundreds of years.)*

4a. As predicted, magnesium sulfate was absorbed by the towel and hardened as the water evaporated away.

4b. Like petrified wood, this log will not burn. When exposed to flame, magnesium sulfate melts and bubbles, turns brittle and starts to crumble. The paper blackens a bit but does not burn.

EVALUATION

Q. How does wood petrify?

A. Over a very long time, water slowly replaces wood fibers with dissolved minerals.

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