



Iron Oxide Chalk Activity

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The purpose of this activity is to emphasize recycling and what can be done with the iron hydroxide (iron oxide when dried) collected from abandoned mine wetlands.

Supplies:

Used paper (copier/printer paper)
Tape
Paper Towels

Cups (preferably reusable since it is about recycling)
Newspaper
Plastic knives or straws for stirring

Difficulty: Average – can be adapted by having the teacher do most of the mixing and pouring

Time: Thirty Minutes

Directions:

1. Cover area or desk with newspaper.
2. Make a mold for chalk. You can use a toilet tissue roll or small paper cup, but the best is a sheet of typing paper cut in half lengthwise. Roll both pieces of paper into a tube about the diameter of a dime and tape. The paper works well because it absorbs most of the water from the chalk mixture and the drying time is significantly reduced.
3. Make a stopper out of paper towel for the end of a tube. Look through the tube to see if there is light coming through, if there is; reform the stopper until there is no light showing. This will ensure that the chalk mixture will not leak out the bottom of the tube.
4. Mix Plaster of Paris and water in a 1 to 1 ratio. (i.e. 1 cup water to 1 cup Plaster of Paris)
5. Add iron oxide, the more you add, the darker the chalk will be.
6. Stir very well.
7. **DO NOT LET THE MIXTURE SET; IT WILL HARDEN QUICKLY.**
8. Pour the chalk mixture into the tube and have the students hold upright or place in a cup to ensure that the tube doesn't fall over.
9. As the paper absorbs most of the water, the top of the chalk will sink into a funnel-like shape, the students may tap the tube gently on the table to reshape the chalk top.
10. Place the tubes of paper somewhere in the classroom where drying will occur.

After 48 Hours:

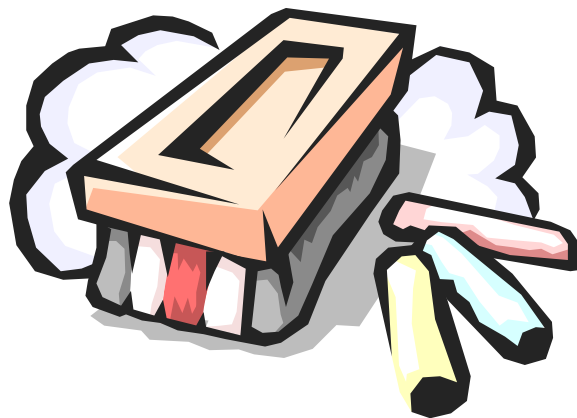
Unwrap the chalk and place somewhere in the classroom where it will continue to dry thoroughly.

NOTE: If after unwrapping, the chalk has wet paper around it, you may gently use your fingers to rub off the paper.

ENJOY!

Notes:

- Experiment with swirling by adding iron oxide and stirring very little.
- If using toilet tissue rolls, drying will take much longer.



DISCLAIMER: Quality of iron oxide will determine the quality of chalk produced. Some iron oxide will bubble and foam upon the addition of water and mixing with the Plaster of Paris, resulting in pithy/non-solid chalk.