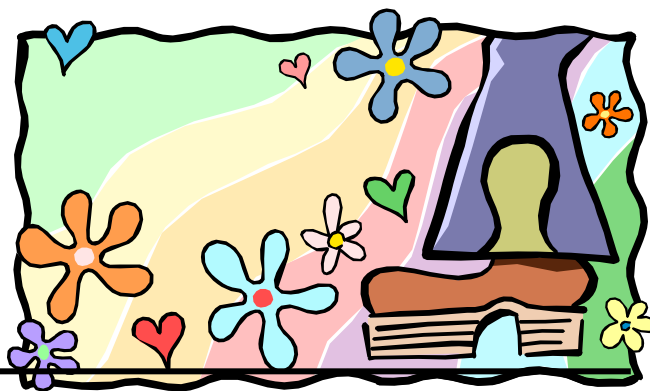


IRON OXIDE TIE-DYE ACTIVITY

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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 for 1 shirt:

Rubber Gloves

4 Liters of hot water (use a 2-liter pop bottle to determine this measurement)

2 Tablespoons of Iron Oxide Powder

2 Tablespoons of Baking Soda

2 buckets

Materials to be dyed (t-shirts or other types of white cotton fabric brand new or already washed BUT DO NOT USE FABRIC SOFTNER)

Rubber bands

Tablespoon measuring spoon

2 Paint Stirrers to stir the solutions

Difficulty: Average- depending on the types of folds

Time: 30 Minutes (depending of types of folds)

Directions:

1. Wearing the rubber gloves, mix 2 liters of hot water with the 2 tablespoons of iron oxide powder in one of the buckets. Stir the mixture to get all of the mixture to dissolve. (Not all of the powder will dissolve BUT it will be useful for the coloration.)
2. Fold the material in the desired patterns.
3. Submerge washed and dried white cotton fabric or t-shirt into the mixture.
4. Let soak at least 20 minutes, stirring occasionally to work the dye solution into the fabric.
5. Remove the item from the dying solution.
6. Wring excess water from fabric.
7. After this step you want to rinse the fabric **ALONE** in a washing machine using warm water.
8. You may also air dry in the sun to help set the iron oxide.

******* REMEMBER TO ALWAYS WASH WITH LIKE COLORS*******

DISCLAIMER: Quality of iron oxide will determine the quality of the dying. Get permission before removing iron oxide from nearby wetlands and use caution when collecting iron oxide from **Acid Mine Discharge** sites as they may contain heavy metals.

FOLDING PATTERNS FOR TIE-DYING

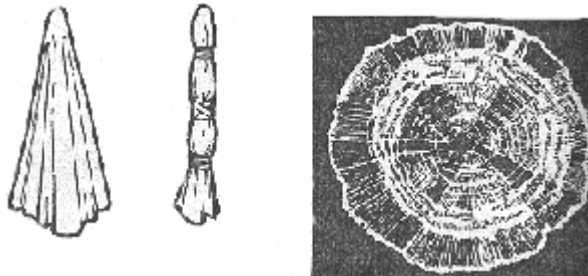
1. STRIPES- Fold the fabric back and forth as if you're making a fan and secure with a rubber band at intervals all along the body of the shirt. Repeat for the sleeves.



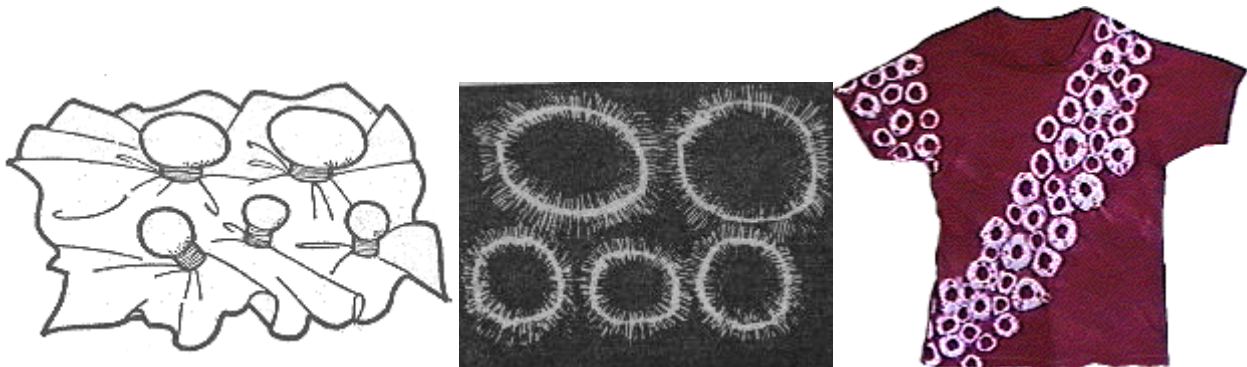
2. OVERALL PATTERNS- Tie the entire shirt tight, overhand knots. DON'T FOLD THE SLEEVES! Gather the fabric at the neck and twist the tail until the shirt twists back onto itself. Now tie the shirt firmly using rubber bands. Scrunch up the fabric and rubber bands all over in random patterns.



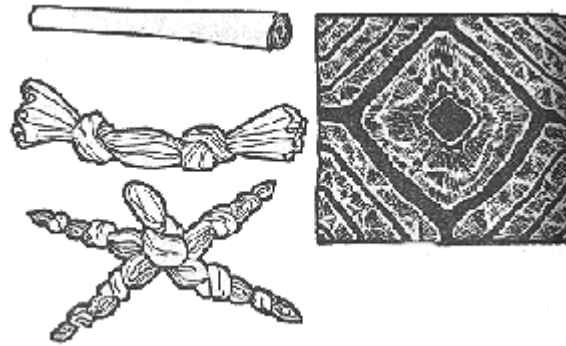
3. CIRCULAR PATTERNS- Pinch up a spot on the center in the front and or back of the shirt and wrap and tie the material below that pinch all the way down to make a bullseye or sunburst pattern. Make circles over the entire shirt by pinching small area of cloth and binding them with rubber bands.



4. ROUNDED PATTERN- Tying round objects in your shirt will result in an interesting pattern. Look at the shirt below. Marbles or rocks can be placed into the shirt and rubber banded to make this look.



5. **TYING IN KNOTS**- Various effects can be created by tying knots in the material itself. Fold the fabric in half then roll it up into a tube. Tie knots as firmly as you can along its length.



6. **MARBLING**- This gives an all over effect of clouds rather than a definite pattern. The cloth needs to be crumbled up into a tight ball using rubberbands to put around the ball as tight as possible going in different directions.



7. **V-PATTERN**- Fold the fabric in half and starting at one corner, fold the fabric in even segments back and forth accordion style. Add fasteners as you go.

Lesson and Images Adapted and taken from various websites.