

E.T. - A LOCAL WAY OF LEARNING

Title:

Author:

Grade Level:

E-18

NATURAL DYES

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K-6

Concepts:

6.NaturalResources

8.Values,Attitudes

9. Change, Management

12.Stewardship

Disciplines:

1. Art

2. Social Studies

Objective:

The students will develop an awareness of the use of natural dyes as opposed to commercial dyes.

Rationale:

As an expression of cultural need and aesthetic appreciation our ancestors made use of barks, roots, and seeds, etc., to dye cloth and ornament the baskets and bowls made for daily use. By experimenting with different plant materials as dyes we can use our earth's resources in a creative way.

Materials Needed:

A collection of plant parts--flowers, barks, roots, seeds.

A hot plate and pot of water.

Mordant of alum (ammonium) and washing soda. (Pharmacy)

Table salt.

Cotton bolls or yarn.

Some plant material to use for dyestuff:

Achiote seeds – yellow

Yucca root bark – yellow

Tumeric tuber – yellow

Onion skins – yellow

Mango bark and leaves – yellow

Indigo

Painkiller bark-red

Inkberry seeds- dark blue

Logwood- Violets and reds

Unripe guinep fruits- black

Bougainvilla bracts

Directions/Activity:

Dyes require the use of a mordant which works in this way. A chemical reaction between the mordant and the dye takes place within the fiber of the cloth, resulting in a color-fast dye. Cotton needs an alkaline bath, wood requires an acid bath.

Dissolve alum and washing soda in water, prepare the material by wetting it before immersion in the mordant, then bring to a boil and continue boiling for an hour or SO. Cool with the material in the mordant, rinse and it is ready for dyeing. Prepare the dye bath by boiling the plant material for two hours, pour off the liquid and immerse the material and boil again for an hour at a low boil.

Primary children might just pick sea island cotton, remove the seeds and test the various plant materials for color. The advanced students may wish to experiment also with cotton bolls before involving larger amounts

of material. The addition of table salt will aid the color in the dye bath. Adding washing soda to the rinse will set the dye.

NOTE: You can substitute for the hot plate and pot by using a gallon glass jar and letting the sun do the heating. Time will be about two weeks rather than two hours, however.

Questions For Discussion:

I- That part of the plants make the best dyes?

I-What is the most common range of colors obtained?

What color is hard to find in a natural dye?

Talk about the natural vs. commercial dyes and the effect commercial dyes have on the environment.

Teacher Reference:

Natural Dyes, Plants and Processes, Jack Kramer, NY, 1972.

A Handbook of Dyes From Natural Materials, Anne Bliss, NY, 1981.