Fiber Reactive Tie Dye Instructions

(1) 100% cotton fabrics must be used. In Denver, t-shirts can be bought from GRATEFUL DYES (303) 763-9730 or (800) 697-1566. Call ahead to make sure they have them in stock. These are good quality shirts for the money. They are about $30-$35/dozen.

(2) Soak the shirts in soda ash (dye fixer-sodium carbonate) for 10-15 minutes and wring them out with rubber gloves (this solution has a pH of 10.6). Add 1/2 cup of dye fixer per gallon of water in a large vat and add enough shirts for one class. Let each student wring out their own shirt. If you dye a lab coat, prewash, soak in soda ash for 24 hours, dry, and then apply dye.

(3) The dyes are mixed with urea (1 lb/2 cups) per gallon of water. Mix this in gallon size jugs or plastic pails. You will need about a gallon per class of 30. This urea water will keep indefinitely. The urea seems to make the colors brighter.

(4) To make 1 L of dye, add about 6-8 heaping teaspoons to 1 L of urea water and mix until lumps are removed. Strength of dye is a personal preference and some colors need more dye powder than others. Yellow needs more. The colors will look very dark upon application but will become less intense after washing. You may mix dyes in liquid form to make new colors. Turquoise and yellow make a wonderful jade green. Fuchsia and yellow make orange. Turquoise and purple make a beautiful blue. Color mixing is given on another page.

(5) The easiest method of applying dyes is to use jumbo beral pipets sold by Flinn. You can use eyedroppers or wash bottles also. You should have enough pipets so that each student will have one. Organize the lab so that the number of beakers is equal to the number of students in your largest class. If you have too many beakers, the reorganization is too difficult in a 5 minute passing period.

(6) Fold the t-shirts on a clean table. The soda ash is strong enough to cause some surfaces or lacquers to turn the shirts brown, so test your lab tables ahead of time. If the tables turn brown, cover them with plastic. Have each class wipe off their tables before they leave and ask the new class to wipe the tables before they start. If some dye gets on their shirt from the table, tell the students to ignore it as they will be adding so much dye that it will not show. Demonstrate the patterns for students and let them do their own. Rubber bands should be used to bind the patterns on the shirt so that the dye can be applied both front and back. After the folds are made, students can apply the dye. Allow the shirts to drain after both sides have been dyed, just before they leave. They may wrap their shirts in paper towel or newspapers and place in a plastic bag to take to their locker. DO NOT USE TOO MUCH PAPER TOWEL AS IT WILL DRAW SOME OF THE DYE OUT. I recycle my grocery plastic bags for this activity.

(7) Shirts should be kept at room temperature or warmer for 24 hours. The next day, the shirts should be removed from the bag and washed in HOT WATER with 2 teaspoons of mild detergent (Joy, Dawn, Ivory, Synthrapol). Up to 15 shirts can be washed at a time, though there are many colors. Run through HOT DRYER. After this initial washing, the shirts can be washed in detergent containing phosphates like Tide, Fab, etc. I require that the students wear their shirts the following
day for photos and points. I make double copies of the photos so they can each have a picture.

(8) I charge the students $6 per shirt. The dye is approximately $2.00 per shirt + $3.00 to $3.50 for the shirt. If you buy XXXL shirts they may cost a little more.

(9) I do this lab before Christmas and usually open the lab again for the making of gifts, student makeup, teacher's projects, etc. We have tie dyed lab coats, tennis shoes, socks, underwear, etc. Lab coats can be bought from Bert Goldberg at (713)-849-5829 in Texas.

(10) Once you have done this project, you will do it again because the students love it. Buy as much dye as you can afford. You can buy tie dye kits from Flinn at (800) 452-1261. A kit is enough dye for 30 shirts and costs about $80 I usually use yellow, fuschia, turquoise, and royal purple. These colors can be mixed to make green, orange, etc.

(9) JUMBO pipets can be purchased from Flinn as well. They are $13.50 for 120. If you order from Flinn, 30 pipets are included in the kit. These pipets can be used for many years. Flinn also includes the rubber bands. Flinn also sells dyes alone.

I give one of these instructions to each student to take home.

**HOW TO WASH YOUR SHIRTS**

Shirts should be kept at room temperature or warmer for 24 hours in the plastic bag. The next day the rubber bands can be removed from the shirts and the shirts can be removed from the bag. Run the clothes washer full of HOT WATER (on low setting) with 2 teaspoons of mild detergent (Joy, Dawn, Ivory, or whatever you use to rinse dishes.) Add the shirts and wash. Up to 15 shirts can be washed at a time, though there are many colors. Run through a HOT DRYER. After this first washing, the shirts can be washed with normal detergent (like Fab, Surf, Tide, etc.). Your tie dye should be washed with darks.