

DYEING AND PAINTING WITH NATURE: THE CHEMISTRY OF COCHINEAL

Mordant bath: ALUM		Dye bath: COCHINEAL	
Materials: <input type="checkbox"/> Alum <input type="checkbox"/> Water <input type="checkbox"/> Textiles <input type="checkbox"/> Scale <input type="checkbox"/> Hot plate <input type="checkbox"/> Glass beaker <input type="checkbox"/> Thermometer	<input type="checkbox"/> Stirring stick <input type="checkbox"/> Plate <input type="checkbox"/> Strainer <input type="checkbox"/> Paper towels	Materials: <input type="checkbox"/> Cochineal (dried) <input type="checkbox"/> Drawstring bag <input type="checkbox"/> Water <input type="checkbox"/> Textiles <input type="checkbox"/> Scale <input type="checkbox"/> Mortar and pestle <input type="checkbox"/> Hot plate	<input type="checkbox"/> Glass beaker <input type="checkbox"/> Thermometer <input type="checkbox"/> Stirring stick <input type="checkbox"/> Plate <input type="checkbox"/> Strainer <input type="checkbox"/> Paper towels
Procedure: <ul style="list-style-type: none"> ● Measure out water into glass beaker ● Add alum and stir ● Place beaker onto hot plate and turn on to medium-low ● Using the thermometer, note the temperature. Stir to dissolve alum in the water ● Pre-wet textiles with water and wring them out carefully to remove as much water as possible ● When the alum solution has reached 70 °C, add the textiles ● Heat the textiles for 30 minutes at 80-90 °C, stirring occasionally to ensure homogenous absorption by the textiles ● NOTE: monitor the temperature of the bath, adjusting the hot plate settings as necessary ● After 30 minutes, remove the textiles from the bath using the strainer ● Being careful not to damage or felt the textile, wash them with clean water to remove any mordant that has not bound to the textiles ● Wring out excess water 		Procedure: <ul style="list-style-type: none"> ● Using mortar and pestle, crush cochineal to a fine powder ● Measure out crushed cochineal and, using a small utensil, add to the drawstring bag. Close the bag tightly ● Measure out water into glass beaker, and add cochineal bag to the water and “stir” as if you are steeping tea ● Place beaker onto hot plate and turn on to medium-low ● Using the thermometer, note the temperature ● Heat the bath (without the textiles) at 80-90 °C for 30 minutes, stirring occasionally ● NOTE: monitor the temperature of the bath, adjusting the hot plate settings as necessary ● After 30 minutes, add the textiles <ul style="list-style-type: none"> ○ If using mordanted textiles, add the wet textiles ○ If using un-mordanted textiles, pre-wet with water and wring them out carefully ○ NOTE: it is common to remove the cochineal bag at this point, but you can also leave it in ● Dye the textiles at 80-90 °C for 30 min, stirring occasionally to ensure homogenous dyeing ● After 30 minutes, remove the textiles from the bath using the strainer ● Being careful not to damage or felt the textile, wash them with clean water to remove any dye that has not bound to the textiles ● When the water runs clear over the textiles and no color comes off the textiles, wring out excess water ● Lay out the textiles on paper towels to dry 	