



## **An Approach to Chemistry via the Analysis of Art Objects: The Scientific Method, Laboratory Safety, Light and Color Theory**

Guide for Curriculum Unit 01.02.05

by Patricia A. Morrison

The purpose of this unit is to learn chemistry's methods, definitions and concepts by way of an in-depth analysis of Joseph Wright of Derby's painting, *The Blacksmith's Shop*, in order to emphasize the interrelatedness of science and the arts, to encourage accurate writing and creative thinking, and to discourage compartmentalization of knowledge. The unit aims at capturing the imagination of intelligent students whose first priority focuses on the arts. Chemistry topics such as the scientific method, laboratory safety, the interplay of matter and energy, physical and chemical changes, and the theories of light and color and how they relate to atomic structure flow out of examining Joseph Wright's painting using Dr. Prown's method of object analysis. Approaches to topics include a visit to the Yale Center for British Art, brainstorming, demonstrations, lab experiments, lectures, question and answer sessions, interdisciplinary activities with the visual art teacher, videos, numerous short writing opportunities, and a culminating visit to the Yale University Art Gallery Conservation Laboratory. Sometimes the lesson centers around Wright's painting, and at other times *The Blacksmith's Shop* primarily serves as a jumping off point that grounds chemistry facts and concepts in concrete reality. The unit focuses on the approach to various lessons throughout the year rather than on the teaching of one specific topic. The annotated bibliography provides sources for background material on color theory and the causes of color, topics that most chemistry texts do not cover.

(Recommended for Chemistry or Honors Chemistry, grades 10-12, and Integrated Science, grade 9.)

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