



Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
1998 Volume VI: Selected Topics in Contemporary Astronomy and Space Science

Practical Illustrations of Astronomical Concepts Relating to the Solar System

Guide for Curriculum Unit 98.06.04
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Astronomical concepts are generally more abstract in content than those in most sciences, because the objects to be studied are so far in space and are not easily available for examination in the laboratory. Some astronomical topics require formal reasoning in order to be understood, while other topics can be understood by concrete approaches.

It is important for us as educators to identify each technique and to modify our teaching styles so as to convey difficult astronomical concepts to students in simple, basic ways for understanding of natural scientific phenomena.

This curriculum unit will encompass varied astronomical concepts relating to the solar system, for eighth grade students. Topics including light wave, electro-magnetic spectrum, optical telescopes, eclipses and seasons will be introduced through the use of exploration activities that allow the students freedom to work with objects and observe their interactions. These interactions will encourage them to analyze their own thinking patterns and also for them to think through many concepts that may be only partially understood. With the use of concrete models in the laboratory, students will maximize their understanding of astronomical concepts and will gain even greater insights into the process of exploration.

Students will be making observations, collecting and analyzing data in preparation for the CAPT test. Some of the activities will be integrated in their Math and Language Arts classes with an emphasis on recording and making charts from data, reading graphs and writing descriptive essays.

(Recommended for Science, Math and Language Arts 8th grade students.)

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