



YALE NATIONAL INITIATIVE

to strengthen teaching in public schools®

Curriculum Units by Fellows of the National Initiative
2005 Volume IV: Astronomy and Space Sciences

Mathematical Tools to Obtain Astronomical Knowledge

Guide for Curriculum Unit 05.04.01, published September 2005

by Barbara C. Burton

Today's young people are fascinated with space. However, their information is often inaccurate coming from science fiction television and movies. They also do not believe that they will ever use the Mathematics and Science that they study in school. The goal of this unit is to teach Mathematics using accurate information about the stars. While broadening their knowledge of both Astronomy and Mathematics, I hope to increase their interest in careers related to both fields.

This unit is designed for PreCalculus students but could easily be adapted for use in other middle or high school Mathematics classes. I teach on a 4x4 block schedule. This means that I teach students 90 minutes each day for 90 days. The lesson plans included in this unit are designed for this time period but could easily be adapted to a shorter time period. Topics covered include scientific notation, equation solving, the Pythagorean Theorem, units of measurement including Astronomical measurement units and knowledge about the stars including distance, luminosity and velocity.

(Developed for Pre-Calculus, grade 11; recommended for Pre-Calculus, grade 11, and Algebra II, grades 10-11)

<https://teachers.yale.edu>

©2023 by the Yale-New Haven Teachers Institute, Yale University, All Rights Reserved. Yale National Initiative®, Yale-New Haven Teachers Institute®, On Common Ground®, and League of Teachers Institutes® are registered trademarks of Yale University.

For terms of use visit https://teachers.yale.edu/terms_of_use