



YALE NATIONAL INITIATIVE

to strengthen teaching in public schools®

Curriculum Units by Fellows of the National Initiative
2007 Volume VII: The Science and Technology of Space

The Origin of the Elements

Guide for Curriculum Unit 07.07.01, published September 2007

by Stuart Surrey

In general, most high school chemistry courses around the country teach students about the elements from an organizational point of view. That is, the elements are taught in conjunction with the development of the periodic table. Students learn about the arrangement of the elements based on increasing atomic numbers, similar chemical and physical properties, as well as trends within the periodic table. Whereas most high school chemistry textbooks briefly mention the occurrence and/or abundance of specific elements on Earth or in the atmosphere, they rarely give any insight into the actual origin of the elements. Therefore, the aim of this curriculum unit is to present the students with a basic understanding of how and where the elements were formed prior to discussing the periodic table. This will include current information on Big Bang or primordial, stellar, and supernova nucleosynthesis. In doing so, the students will study the history of the Big Bang theory and stellar evolution as a means of understanding the origin of the elements as well as stimulating interest in astronomy and cosmology.

(Developed for Chemistry, grade 11; recommended for Chemistry, grade 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