



Yale-New Haven  
Teachers Institute®

Curriculum Units by Fellows of the Yale-New Haven Teachers Institute  
1996 Volume VI: Selected Topics in Astronomy and Space Studies

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## Scaling Down The Universe

Guide for Curriculum Unit 96.06.06  
by Victor Leger

This unit is intended to teach children in grades 4-12 the size of the Universe. Through hands-on manipulatives, the students will create four models beginning with the Solar System and ending with the entire Universe. Because of the incredible size of the Universe, it is impossible to get a firm grasp of the expanse of the Universe in one model. That is why it is necessary to proceed in sequential stages, starting with the size of the Earth and Moon. The idea of scale is at the heart of what this unit is about. The students will learn how to change the sizes of all pertinent material in relation to each other. It is required that this be done four times from the Solar System to the Milky Way Galaxy to our Local Cluster of Galaxies to the whole Universe. It is hard not to be in awe after each transition because of the incredible sizes and distances we will be dealing with.

Perhaps the most difficult concept in this unit is the distance of a light year. Because of the immense distances involved in any discussion beyond our Solar System, it is important that this concept be understood. It is hoped that through some of these lessons this will be possible and that everyone will come away with a better understanding of just how astonishing the Universe is in all its complexity and space.

(Recommended for Science and Art, grades 4-12)

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