

Communication Chapter 6 – Is Anyone Out There?

National Science Education Standards

Chapter Challenge

The scenario is established with a discussion of how scientific knowledge about life outside the earth can be obtained without direct experiments. Students are challenged to develop plans to search for extraterrestrial life, determine how and what can be learned from extraterrestrial beings, and to present persuasive arguments at a hearing requesting funds for their research.

Chapter Summary

To gain understanding of the science principles and the nature of scientific knowledge necessary to meet this challenge, students work collaboratively on activities that explore telescopes, electronic imaging, electromagnetic spectrum, and how distances are measured in space. These experiences engage students in the following content from the National Science Education Standards.

Content Standards

Unifying Concepts and Processes

- Systems, order and organization
- Evidence, models and explanations

Science as Inquiry

- Identify questions and concepts that guide scientific investigations
- Formulate and revise scientific explanations and models using logic and evidence
- Understanding about scientific inquiry

Science in Personal and Social Perspectives

- Science and technology in local, national, and global challenges

History and Nature of Science

- Nature of scientific knowledge
- Historical perspectives

Physical Science

- Conservation of energy and increase in disorder
- Interactions of energy and matter