

4th Grade Living Environment Unit

Benchmarks

Chapter 1: The Nature of Science

The Nature of Science

1A(3-5)#1: Results of similar scientific investigations seldom turn out exactly the same. Sometimes this is because of unexpected differences in the things being investigated, sometimes because of unrealized differences in the methods used or in the circumstance in which the investigation is carried out, and sometimes just because of uncertainties in observations. It is not always easy to tell which.*

Scientific Inquiry

1B(3-5)#2: The results of scientific investigations are seldom exactly the same, but if the differences are large, it is important to try to figure out why. One reason for following directions carefully and for keeping records of one's work is to provide information on what might have caused the differences.

1B(3-5)#3: Scientists' explanations about what happens in the world come partly from what they observe, partly from what they think. Sometimes scientists have different explanations for the same set of observations. That usually leads to their making more observations to resolve differences.

Chapter 4: The Physical Setting

Energy Transformations

4E(3-5)#1: **Things that give off light often give off heat.** Heat is produced by mechanical and electrical machines and any time one thing rubs against something else.

Chapter 5: The Living Environment

Diversity of Life

5A(3-5)#1: A great variety of kinds of living things can be sorted into groups in many ways using various features to decide which things belong to which group.

5A(3-5)#2: Features used for grouping depend on the purpose of the grouping.

Interdependence of Life

5D(3-5)#1: For any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.**

5D(3-5)#4: Changes in an organism's habitat are sometimes beneficial to it and sometimes harmful.**

Flow of Matter and Energy

5E(3-5)#1: Almost all kinds of animals' food can be traced back to plants.

Chapter 12: Habits of Mind

Values and Attitudes

12A(3-5)#1: Keep records of their investigations and observations and not change the records later.

12A(3-5)#2: Offer reasons for their findings and consider reasons suggested by others.*

Manipulation and Observation

12C(3-5)#3: Keep a notebook that describes observations made, carefully distinguishes actual observations from ideas and speculations about what was observed, and is understandable weeks or months later.

Communication Skills

12D(3-5)#3: Use numerical data in describing and comparing objects and events.

Critical-Response

12E(3-5)#2: Recognize when comparisons might not be fair because some conditions are not kept the same.

*The benchmarks are not assigned to specific lessons in the Living Environment Unit Blueprint. They should be emphasized throughout the unit. When discussing lab results, students should know that there will be variations. Benchmark 1B#2, which is closely related to 1A#1, is aligned to specific lessons in the unit where large discrepancies in experiment results are possible.

**The benchmarks are overarching ideas of the entire unit.

Chapter titles and headers correlate with *Benchmarks for Science Literacy* by Project 2061.