3rd Grade Magnetism and Electricity Unit

Benchmarks

Chapter 1: The Nature of Science

The Scientific World View

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 circumstances 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.

Chapter 3: The Nature of Technology

Introduce 3B(3-5)#1: There is no perfect design. Designs that are best in one respect (safety or ease of use, for example) may be inferior in other ways (cost or appearance). Usually some features must be sacrificed to get others. How such trade-offs are received depends upon which features are emphasized and which are down-played.

Chapter 4: The Physical Setting

Forces of Nature

4G(3-5)#2: Without touching them, a magnet pulls on all things made of iron and either pushes or pulls on other magnets.

4G(3-5)#3: Without touching them, material that has been electrically charged pulls on all other materials and may either push or pull other charged materials.

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

Chapter 11: Common Themes

Systems

11A(3-5)#2: Something may not work as well (or at all) if a part of it is missing, broken, worn out, mismatched, or misconnected.

Constancy and Change

Introduce 11C(3-5)#1: Some features of things may stay the same even when other features change. Some patterns look the same when they are shifted over, or turned, or reflected, or seen from different directions.

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.

Critical-Response Skills

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

Manipulation and Observation

12C(3-5)#5: Make safe electrical connections with various plugs, sockets, and terminals.

Communication Skills

12D(K-2)#2: Draw pictures that correctly portray ~~at least some~~ features of the thing being described.

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

Illinois Science Performance Descriptors

ILS 12C#1 (Stage B): Constructing and testing simple electric circuits with batteries.