Course/Grade Level: Fourth Grade Science Curriculum

S.4.1 Students will develop the skills to do *full inquiry*. *Full inquiry* involves asking a simple question, completing an investigation, answering the question, and sharing the results.

Students will…

S.4.1.1 ▲ ask questions that they can answer by investigating. (3-4.1.1.1)

S.4.1.2 ▲ plan and conduct a simple investigation. (3-4.1.1.2)

S.4.1.3 ▲ employ appropriate equipment, tools, and safety procedures to gather data. (3-4.1.1.3)

S.4.1.4 ▲ begin developing the abilities to communicate, critique, analyze their own investigations, and interpret the work of other students. (3-4.1.1.4)

Vocabulary: equipment, evaluate, evidence, investigations, injury, inquiry, interpret, investigate, predict, problem, procedure, risk, and safety procedure

Tools: hand lens, meter stick, tape measure, measuring cups, balance, thermometer, spring scale, graduated cylinder, dropper, stopwatch, beaker, and safety goggles

S.4.2 Students will develop skills to describe objects and the interaction of objects. They will also experiment with sound, electricity, and magnetism.

Students will…

S.4.2.1 ▲ observe properties of objects and measure those properties using appropriate tools (e.g., meter stick, tape measure, measuring cups, balance, thermometers, scale, graduated cylinder, dropper). (3-4.2.1.1)

S.4.2.2 ▲ observe and record how one object interacts with another object (e.g., size, shape, volume, color, temperature of objects, using balances, thermometers, and other metric measurement tools). (3-4.2.1.3)

S.4.2.3 ▲ identify that the source of sound is vibrations (use tuning forks, rulers, tongue depressors, musical instruments, etc). (3-4.2.3.1)

Instructional Example: identify pitch, volume, and speed in different materials

S.4.2.4 ▲ design a simple experiment to determine whether various objects will be attracted to magnets. (3-4.2.4.2)

S.4.2.5 ▲ construct a simple circuit. (3-4.2.4.3)

Vocabulary: analyze, attract, characteristics, graph, interact, magnet, observe, poles, property, recorded, repel, vibration, simple circuit, parallel circuit, series circuit, complete circuit, sound implement, pitch.

S.4.3 Students will observe and illustrate the life cycle of various organisms.

Students will…

S.4.3.1 ▲ compare, contrast, and ask questions about life cycles of various organisms (limit life cycles to humans, plants, butterflies, and frogs). (3-4.3.2.1)

Vocabulary: metamorphosis, compare, contrast

S.4.4 Students will observe, objects, materials, and changes in their environment. They will then explain their observations.

Students will…

S.4.4.1 ▲ describe properties of water and the process of the water cycle (e.g., relates water cycle to observation of weather. Example: forms of precipitation). (3-4.4.1.3)

S.4.4.2 observe and record the properties of fossils and discuss what fossils are. (3-4.4.1.4)

S.4.4.3 ▲ describe changes in the surface of the earth (e.g., use examples of environment in Kansas, emphasis on corrosion). (3-4.4.3.1)

S.4.4.4 ▲ observe, describe, and record dial and seasonal weather changes (use metric rain gauge, Celsius thermometer). (3-4.4.3.2)

Vocabulary: water cycle, fossils, weather, evaporation, condensation, precipitation

S.4.5 Students will develop a simple design plan to solve a problem. They will also develop an awareness of how people use science and technology in their work and examine the lives of scientists in history.

Students will…

S.4.5.1 ▲ identify a simple design problem (design a plan, implement a plan, evaluate the results, make changes to improve the product, and communicate the

S.4.5.2 understand that the design process produces knowledge that can be used to solve a problem and improve the world. (3-4.5.2.1)

Instructional Examples:

- understands why a zipper was designed
- what problem the zipper has solved; how the zipper has improved our lives
- how Velcro is like a zipper
- what problem Velcro solves; how Velcro has improved our lives

S.4.5.3 develop an awareness that women and men of all ages, backgrounds, and ethnic groups engage in a variety of scientific and technological work. (3-4.5.2.4)

Instructional Example: Interview parents and other community and school workers to determine how they use science and technology in their work.

S.4.5.4 study the lives of people who made scientific contributions. (3-4.7.1.2)

Vocabulary: design process, technology

S.4.6 Students will demonstrate personal health and environmental practices.

Students will…

S.4.6.1 ▲ discuss the nutritional value of various foods and their contributions to health. (3-4.6.1.1)

Instructional Examples:

- read food labels
- discuss healthy foods
- compare snacks
- make a healthy snack

S.4.6.2 discuss that safety involves preventing injury by avoiding inappropriate risks and dangers (e.g., weather safety, water safety, bike safety, sun protection, etc.). (3-4.6.1.2)

S.4.6.3 assume some responsibility for their own health, and the health and well being of others. (3-4.6.1.3)

S.4.6.4 develop personal actions to solve pollution problems in and around the neighborhood. (3-4.6.2.2)

Instructional Examples:

- take a walk to look for pollution (litter and trash)
- work with other children to solve polluting problems observed

Vocabulary: pollution, nutrition, nutritional value, hygiene, recycle, reuse, reduce