Shakopee Area Catholic School
Science Standards and Benchmarks
Grade Level: 3
(FOSS™) Minnesota Science Standards

HISTORY AND NATURE OF SCIENCE

Standard: The student will understand the nature of scientific investigations.

1. Participate in a scientific investigation using appropriate tools.
2. Know that scientists use different kinds of investigations depending on the questions they are trying to answer.

PHYSICAL SCIENCE

Standard: The student will explore the characteristics and properties of sound.

1. Investigate how sounds are made when objects vibrate.
2. Demonstrate that things that make sound do so by vibrating objects, such as vocal cords and musical instruments.
3. Describe that the sound travels as a vibration through the air.
4. Observe and compare sounds to develop discrimination ability.
5. Communicate with others using a drop code.
6. Learn that sound originates from a source that is vibrating and is detected at a receiver such as the human ear.
7. Understand the relationship between the pitch of a sound and the physical properties of the sound source (i.e. length of vibrating object, frequency of vibrations, and tension of vibrating string).
8. Compare methods to amplify sound at the source and at the receiver.
9. Observe and compare how sound travels through solids, liquids, and air.
10. Use knowledge of the physics of sound to solve simple sound challenges.
11. Acquire vocabulary associated with the physics of sound.
12. Exercise language, social studies, and math skills in the context of the physics of sound.
13. Develop and refine the manipulative skills required for investigating sound.
14. Use scientific thinking processes to conduct investigations and build explanations: observing, communicating, comparing, and organizing.

THE NATURE OF MATTER

Standard: The student understands that all matter has observable, measurable properties.

1. Determine that the properties of materials (e.g., density and volume) can be compared and measured (e.g., using rulers, balances, and thermometers.
2. Know the weight of an object is equal to the sum of the weights of its parts.
3. Know that different materials are made by physically combining substances and that different objects can be made by combining different materials.

LIFE SCIENCE

Standard: The student describes patterns of structure and function in living things.

Know that the human body is made of systems with structures and functions that are related.

Standard: The students will know the human body and its functions.

1. Observe and investigate the human skeletal.
2. Become aware of the versatility of movement provided by an articulated skeleton.
3. Gain experience with the use of photographs, diagrams, and model bones to gather information.
4. Build mechanical models to demonstrate how muscles are responsible for human movement.
5. Compare the bones and muscles in their own bodies to photographs and models.
6. Investigate response time of hands and feet.

7. Develop an awareness of human bone and muscle structure and function and an appreciation for the versatility of the human body.
8. Acquire the vocabulary associated with the human skeletal and muscle systems.
9. Use scientific thinking processes to conduct investigations and build explanations: observing, communicating, comparing, and organizing.

THE NATURE OF SCIENCE

Standard: The student uses the scientific processes and habits of mind to solve problems.

1. Know that to work collaboratively, all team members should be free to reach, explain, and justify their own individual conclusions.
2. Know that to compare and contrast observations and results is an essential skill in science.

Standard: The students will explore measurement, the process of quantifying observations and find out how it fits in their lives.

1. Understand the necessity for standard units of measurement.
2. Develop an understanding and intuitive feel for the metric system.
3. Measure length and distance in meters and centimeters with a meter tape.
4. Measure mass in grams with a balance and mass pieces.
5. Measure liquid volume and capacity of containers in liters and milliliters with 50-ml syringes and graduated cylinders.
6. Measure temperature of liquids and air in degrees Celsius with a thermometer.
7. Acquire the vocabulary associated with metric measurement.
8. Exercise language and math skills in the context of metric measurement.
9. Apply appropriate measuring skills in everyday situations.
10. Develop and refine the manipulative skills required for making and using measuring tools.
11. Use scientific thinking processes to conduct investigations and build explanations: observing, communicating, comparing, and organizing.