



Curriculum – Fifth Grade Science

Capital's science curriculum is aligned with state and national standards. Teachers utilize research-based materials and strategies to provide all students with experiences in the life, earth, and physical sciences while developing critical thinking and problem-solving skills. Students will develop an understanding of important science concepts as they demonstrate process skills such as observing, measuring, predicting, and communicating. The science curriculum engages students in hands-on, inquiry-based, integrated units which serve as a foundation for success in an increasingly-complex scientific and technological world.

This year your child's curriculum will include the following:

Unit One: Ecosystems or Environments

Curricular Materials Utilized: FOSS Environments or STC Ecosystems

Unit Overview: In this unit, fifth-graders explore the web of relationships that link organisms to one another and to their natural environments. By constructing, observing, discussing, and reading about both land and water ecosystems in this unit, students develop a growing sensitivity to living things and what they need to survive. Students learn that organisms in ecosystems have dependent and independent relationships and that natural and human-made events can disturb an ecosystem. They also learn that people bring different perspectives to environmental issues, and that they can work together to develop solutions.

Essential Questions:

- How can change in one part of the ecosystem effect change in the other parts of the ecosystem?
- How do matter and energy link organisms to each other and their environment? Why is sunlight essential to life on Earth?
- How do humans have an impact on the diversity and stability of ecosystems?
- How is matter transferred in living systems? How is energy transferred/transformed in living systems?

Unit Two: Skywatchers

Curricular Materials Utilized: Carolina Biological Supply Company

Unit Overview: In this unit, students will learn about the components of the solar system and the effects of the sun in producing light and heat. Using models and observation, they will learn about comparing and contrasting the day and nighttime sky, earth's rotation and revolution, and its affects on seasonal change and moon phases.

Essential Questions:

- How have past scientific contributions influenced current scientific understanding of the world?

For more information about your child's Science Curriculum, please contact your child's teacher or call the Curriculum Office at 857-4234.

- What predictable, observable patterns occur as a result of the interaction between the earth, moon, and sun? What causes these patterns?
- What is Earth's place in the Solar System?
- How has technology expanded our knowledge of the Earth, Moon, and Sun System?

Unit Three: Mixtures and Solutions

Curricular Materials Utilized: FOSS Mixtures and Solutions Module

Unit Overview: In this unit, students are introduced to chemistry as the study of the structure of matter and the changes or transformations that take place in it. Students investigate the properties of mixtures and solutions, dissolving a solid in a solvent, concentration and saturation of a solution, evidence of reactions, evaporation, and crystal formation. Students gain experience with laboratory tools and techniques.

Essential Questions:

- What makes a question scientific?
- What constitutes evidence?
- When do you know that you have enough evidence?
- Why is it necessary to justify and communicate an explanation?
- How do the properties of materials determine their use?
- How can the properties of the components of a mixture be used to separate the mixture? How do the components determine the properties of mixtures?

Unit Four: Motion and Design

Curricular Materials Utilized: STC Motion and Design Module

Unit Overview: This unit allows students opportunities to explore the physics of motion and to apply those concepts to technological design. In this unit, students analyze the motion of vehicles they have built, investigate how forces affect a vehicle's motion, and design vehicles that are propelled by stored energy.

Essential Questions:

- What happens to the energy in a system? Where does this energy come from, how is it changed within the system, and where does it ultimately go? How does the flow of energy affect the materials in the system?
- How do we know that things have energy?
- How can energy be transferred from one material to another?