



# SCHOOL DISTRICT OF MONROE

*Preparing for the Future, One Child at a Time*

## Science (1st)

### **Course Description:**

The curriculum for this required course is developed from the <http://www.nextgenscience.org/>. Students will be exposed to and practice skills related to Science and Engineering practices, crosscutting concepts, and core ideas in science that all students in K-12 should master in order to prepare for success in college or 21st century careers. The standards are organized by the four disciplinary core ideas: Life Science, Physical Science, Earth and Space, and Engineering, Technology and the Application of Science. The information in this course overview outlines what students should understand and be able to do by the end of the year.

### **Mastery Standards:**

#### Life Science:

*Standard SCI.LS1: Students use science and engineering practices, crosscutting concepts, and an understanding of structures and processes (on a scale from molecules to organisms) to make sense of phenomena and solve problems.*

*Standard SCI.LS3: Students use science and engineering practices, crosscutting concepts, and an understanding of heredity to make sense of phenomena and solve problems.*

#### Physical Science

*Standard SCI.PS2: Students use science and engineering practices, crosscutting concepts, and an understanding of forces, interactions, motion and stability to make sense of phenomena and solve problems.*

#### Earth and Space:

*Standard SCI.ESS1: Students use science and engineering practices, crosscutting concepts, and an understanding of Earth's place in the universe to make sense of phenomena and solve problems.*

#### Engineering, Technology and the Application of Science

*Standard SCI.ETS1: Students use science and engineering practices, crosscutting concepts, and an understanding of engineering design to make sense of phenomena and solve problems.*

*Standard SCI.ETS2: Students use science and engineering practices, crosscutting concepts, and an understanding of the links among Engineering, Technology, Science, and Society to make sense of phenomena and solve problems.*

*Standard SCI.ETS3: Students use science and engineering practices, crosscutting concepts, and an understanding of the nature of science and engineering to make sense of phenomena and solve problems.*

Unit	Description of Unit and Learning Targets
<p><b>Unit Title: Structure, Function, and Information Processing</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>• What are some ways plants and animals meet their needs so that they can survive and grow?</li> <li>• How are parents and their children similar and different?</li> </ul>	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>• I can use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. (Ex: designing clothing or equipment to protect bicyclists= turtle shells, acorn shells).</li> <li>• I can read texts and use media to determine patterns in</li> </ul>

	<p>behavior of parents and offspring that help offspring survive. (Ex: signals- crying, cheeping, and vocalizations. Response-feeding, comforting, and protecting the offspring).</p> <ul style="list-style-type: none"> <li>I can make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents. (Ex: observations of leaves from the same kind of plant-same shape but different in size, breeds of dog looks like its parents but is not exactly the same.)</li> </ul>
<p><b>Unit Title: Waves: Light and Sound</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>What happens when materials vibrate?</li> <li>What happens when there is no light?</li> </ul>	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>I can plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. (Ex: tuning forks, plucking strings. Piece of paper near speaker).</li> <li>I can make observations to construct an evidence-based account that objects can be seen only when illuminated. (Ex: pinhole box, observations in a completely dark room, video of cave exploration, object giving off own light.)</li> <li>I can plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light. (Ex: transparent-clear plastic, translucent-wax paper, opaque-cardboard, and reflective-mirror).</li> <li>I can use tools and materials to design and build a device that uses light our sound to solve the problem of communicating over a distance. (Ex: light source to send signals, paper cup and string, pattern of drum beats).</li> </ul>
<p><b>Unit Title:Space Systems: Patterns and Cycles</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>What objects are in the sky and how do they seem to move?</li> </ul>	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>I can use observations of the sun, moon, and stars to describe patterns that can be predicted. (Ex: sun and moon rise in one part of the sky, move across the sky, and set; and stars other than our sun are visible at night but not during the day.)</li> <li>I can make observations at different times of the year to relate the amount of daylight to the time of year. (Ex: comparisons of the amount of daylight in the winter to the amount in the spring or fall).</li> </ul>