**SCIENCE**

**GRADE FIVE**

**Curriculum Guide**

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**LINDEN PUBLIC SCHOOLS**

**LINDEN, NEW JERSEY**

**DENISE CLEARY**

**INTERIM SUPERINTENDENT**

**MICHAEL WALTERS**

**ACTING ASSISTANT SUPERINTENDENT**

**ROSE GOLDSTEIN**

**SUPERVISOR OF SCIENCE**

**The Linden Board of Education adopted the Curriculum Guide on:**

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| **August 2019** |  | **Education - Item # 9** |
| **Date** |  | **Agenda Item** |
|  | | |
| **Rationale**  **Be it resolved, that all curricula within the following content areas be readopted for use in the Linden Public Schools for the 2019-2020 school year. All curricula are aligned to the New Jersey Student Learning Standards.** | | |

**Public Notice of Non-Discrimination**

If any student or staff member feels that they have experienced discrimination on the basis of race, color, creed, religion, gender, ancestry, national origin, social or economic status, sexual orientation or disability, contact:

Affirmative Action Officer

Kevin Thurston – (908) 486-5432 ext. 8307; [kthurston@lindenps.org](mailto:kthurston@lindenps.org)

504 Officer & District Anti-Bullying Coordinator

Annabell Louis – (908) 486-2800 ext. 8025; [alouis@lindenps.org](mailto:alouis@lindenps.org)

Title IX Coordinator

Steven Viana – (908) 486-7085; [sviana@lindenps.org](mailto:sviana@lindenps.org)

Director of Special Education

Marie Stefanick – (908) 587-3285; [mstefanick@lindenps.org](mailto:mstefanick@lindenps.org)

**Linden Public Schools Vision**

The Linden Public School District is committed to developing respect for diversity, excellence in education, and a commitment to service, in order to promote global citizenship and ensure personal success for all students.

**Linden Public Schools Mission**

The mission of the Linden Public School District is to promote distinction through the infinite resource that is Linden’s diversity, combined with our profound commitment to instructional excellence, so that each and every student achieves their maximum potential in an engaging, inspiring, and challenging learning environment.

**Science Department Vision**

Our vision is to develop scientifically literate students, by teaching them to think critically, become problem-solvers, and develop into life-long learners. Our classrooms will be collaborative settings that are driven by discovery, exploratory learning, and which require each student to actively engage throughout the learning to successfully construct explanations and design solutions.

**Science Department Mission Statement**

The mission of the Science Department is to create a community of diverse learners and educators who foster equitable active learning, quantitative reasoning, and scientific inquiry. Through integration of classroom laboratory, research, and practical experiences, students acquire skills necessary for life-long learning, critical thinking, and collaborative problem-solving. Our students will engage in the “Practices of Science” as they investigate the natural and designed worlds seeking to construct explanations for phenomena and design solutions for problems. They will collaboratively ask questions, develop and use models, plan and carry out investigations, analyze data, use mathematics and computational thinking, construct explanations, engage in argument from evidence, and obtain, evaluate, and communicate information. These will serve as foundations for informed, responsible citizens, and their successful careers, in an ever-changing world that is increasingly dependent on evidence-based decision making, science, technology, and engineering.

**Science Department Goals**

The Science Department strives to provide ***all*** students with an engaging program that:

• Captures the imagination and curiosity, producing scientifically literate, life-long learners.

• Develops critical thinking skills, positive science attitudes, and problem-solving skills through collaborative, inquiry centered investigation.

• Provides context and connections to deepen their proficiency in literacy, mathematics, and use of technology; and

• Continuously improves through professional learning experiences which ensure equity and excellence in on-going, research-based educator development.

1. **Course Description**

The **Living Systems** module focuses the idea that a system is one of the grand integrating concepts that pervades all of science. Students look at Earth as the interaction of four Earth systems – the geosphere, atmosphere, hydrosphere, and biosphere. Students think about systems on different scales – nutrient and transport systems within an organism that moves matter and provides energy to the individual organism and feeding relationships in ecosystems that move matter among plants, animals, decomposers, and the environment. Students come to understand through a variety of experiences that plants get the materials they need for growth primarily from water and air, and that energy in animals’ food was once energy from the Sun. the Earth and Sun module provides students with experiences to explore the properties of the atmosphere, energy transfer from the sun to Earth, and the dynamics of weather and water cycling in Earth’s atmosphere. Other experiences help students to develop and use models to understand Earth’s place in the solar system, and the interactions of Earth, the Sun, and Moon to reveal predictable patterns – daily length and direction of shadows, day and night, and the seasonal appearance of stars in the night sky. The **Mixtures and Solutions** unit is basically the study of chemistry, the study of the structure of matter and the changes or transformations that take place within those structures. Students learn about the properties and behaviors of substances and systems of substances and how things go together and be taken apart. Students have the opportunity to develop models and explain phenomena too small to see directly. They develop an understanding that matter is conserved when it changes state from solid to liquid to gas, when it dissolves in another substance and when it is part of a chemical reaction. Students have experiences with mixtures, solutions of different concentrations, and reactions forming new substances. The **Earth and Sun** module provides students the with experiences to explore the properties of the atmosphere, energy transfer from the Sun to Earth, and the dynamics of weather and water cycling Earth’s atmosphere. Some investigations help students develop and use models to understand Earth’s place in the solar system and the interactions of the Earth, Sun, and Moon to reveal predictable patterns: daily length and direction of shadows, day and night, and the seasonal appearance of stars in the night sky.

1. **Course Instructional Material**

Living Systems-Full Option Science Systems

Mixtures and Solutions – Full Option Science Systems

Earth and Sun-Full Option Science Systems

1. **Standards Guiding Instruction**

New Jersey Student Learning Standards for Science

<https://www.nj.gov/education/standards/science/Index.shtml>

New Jersey Student Learning Standards for English Language Arts

<https://www.nj.gov/education/standards/ela/Index.shtml>

New Jersey Student Learning Standards for Mathematics

<https://www.nj.gov/education/standards/math/Index.shtml>

New Jersey Student Learning Standards for Social Studies

<https://www.nj.gov/education/standards/socst/index.shtml>

New Jersey Student Learning Standards for Computer Science and Design Thinking

<https://www.nj.gov/education/standards/compsci/Index.shtml>

New Jersey Student Learning Standards for Career Readiness, Life Literacies & Key Skills

<https://www.nj.gov/education/standards/clicks/index.shtml>

1. **Pacing Guide**

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| --- | --- |
| First | Living Systems |
| Second | Mixtures and Solutions |
| Third | Earth and Sun |

1. **Curriculum**