**SCIENCE GRADE EIGHT**

**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

504 Officer & District Anti-Bullying Coordinator

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

Title IX Coordinator

Steven Viana – (908) 486-7085; sviana@lindenps.org

Director of Special Education

Marie Stefanick – (908) 587-3285; 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 **Earth History** module emphasizes the use of knowledge and evidence about Earth’s history that has operated over geological time. Humans have used Earth’s resources since prehistoric times. Students will study the Earth’s processes and systems, make observations, and do investigations that involve constructing and using conceptual models. The focus of the **Chemical Interactions** module is the physical and chemical properties that characterize matter. Students examine several characteristic properties such as appearance, density, melting and boiling points, and chemical behavior and then participate in investigations about how these properties relate to pure substances (elements and compounds) and mixtures. They engage in a series of hands-on inquiry-based activities designed to develop their understanding of the properties of matter. **Human Systems Interactions** is a five-week course where students learn about the cell as the basis of the human body. Students learn that associations of cells work together to form tissues, which form organs. Organs work together to perform specific functions in organ systems. Finally, organ systems make up the human body. Students will explore how organ systems interact to support each cell in the body*.* **Heredity and Adaptation** is another five-week course in which students will explore fossils, similarities between past and present organisms, genetic principles of inheritance, and how natural selection produces adaptations that lead to change in species and eventually the creation of new species.

1. **Course Instructional Materials**

Earth History-Full Option Science Systems

Chemical Interactions-Full Option Science Systems

Heredity and Adaptations-Full Option Science Systems

Human Systems Interactions-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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| 9/6/22-11/15/22 | First Marking Period | Earth History |
| 11/16/22-1/31/23 | SecondMarking Period | Heredity and AdaptationsChemical Interactions |
| 2/1/23-4/5/23 | Third Marking Period | Chemical Interactions |
| 4/17/23-6/22/23 | FourthMarking Period | Human Systems Interactions |

1. **Curriculum Guide**