**IB Physics SL**

**High School**

**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**

IB Physics SL, in combination with the laboratory experience, is designed to develop the students’ understanding of the concepts and theories of physics. The students will develop critical thinking skills, become aware of the interactions within the environment, gain valuable knowledge on international science and the use of the scientific method for self-discovery. In physics, there are three connected domains of knowledge and skills: 1) Laws of physics, 2) Experimental skills, 3) Social and historical. Students should be highly motivated since the course demands both independent work and group work. Some assignments are prepare for both internal and external assessment and are completed for a portion of the IB score. Students are required to participate in the Group Four project and are required to take the IB Physics SL exam in May of their junior year. Students who do not take the IB Examination related to this course, will have their course grade weight revert back to Honors rather than IB.

1. **Course Instructional Materials**

 Physics for the IB Diploma, K.A. Tsokos, 6th Edition

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 | FirstMarking Period | Unit 1: Measurement and UncertaintiesUnit 2: Mechanics |
| 11/16/22-1/31/23 | SecondMarking Period | Unit 3 Thermal PhysicsUnit 4: Waves |
| 2/1/23-4/5/23 | ThirdMarking Period | Unit 5: Electricity and MagnetismUnit 6: Circular Motion and Gravitation |
| 4/17/23-6/22/23 | FourthMarking Period | Unit 7: Atomic, Nuclear, and Particle PhysicsUnit 8: Energy ProductionUnit 9: Imaging (Option C) |

1. **Curriculum Guide**