



Course Name: Physics
School Year: 2021-2022

Course Purpose and Relevance:

In Physics, students conduct laboratory and field investigations, use scientific practices during investigations, and make informed decisions using critical thinking and scientific problem solving. Students study a variety of topics that include: As approved by the State Board of Education on April 21, 2017, for second reading and final adoption, with technical edits, as authorized by the State Board of Education. Not yet filed; will be subject to technical review by Texas Register editors. 83 laws of motion; changes within physical systems and conservation of energy and momentum; forces; thermodynamics; characteristics and behavior of waves; and atomic, nuclear, and quantum physics. Students who successfully complete Physics will acquire factual knowledge within a conceptual framework, practice experimental design and interpretation, work collaboratively with colleagues, and develop critical-thinking [skills].

Overview of Student Outcomes:

- The student conducts investigations, for at least 40% of instructional time, using safe, environmentally appropriate, and ethical practices. These investigations must involve actively obtaining and analyzing data with physical equipment but may also involve experimentation in a simulated environment as well as field observations that extend beyond the classroom.
- The student uses a systematic approach to answer scientific laboratory and field investigative questions.
- The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom.
- The student knows and applies the laws governing motion in a variety of situations.
- The student knows the nature of forces in the physical world.
- The student knows that changes occur within a physical system and applies the laws of conservation of energy and momentum.
- The student knows the characteristics and behavior of waves.
- The student knows simple examples of atomic, nuclear, and quantum phenomena.

Available Support for Student Learning:

Refer to the teacher's Course Syllabus for resources and course specific opportunities.
Student textbook and/or digital version are available through the CCISD Student Portal.

Link to Course TEKS on State website:

<http://ritter.tea.state.tx.us/rules/tac/chapter112/ch112c.html#112.33>

Year-At-A-Glance 2021-2022	Department	Science	PEIMS Code	
	Subject Area	Physics	Grade Level	9-12

1st Nine Weeks	2nd Nine Weeks
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	August	September	October	November	December
Week 1		Motion in One Dimension Motion in One Direction	Motion in Two Dimensions Vectors Frame of Ref. & Relative Velocity 9 Weeks Exam	Forces and Laws of Motion Intro to Force, Free Body Diagrams & Equilibrium Force & Acceleration	Thermo Thermodynamics Review
Week 2		Motion in One Dimension Graphical Representation Free Falling Body	Motion in Two Dimensions Projectile Motion	Forces and Laws of Motion Force & Acceleration Force Pairs	Semester Exams
Week 3	Intro to Physics	Motion in One Dimension Graphical Representation Free Falling Body	Motion in Two Dimensions Projectile Motion	Circular Motion and Univ. Gravitation Law of Univ. Gravitation	Winter Holidays
Week 4	Intro to Physics	Motion in Two Dimensions Vectors Frame of Ref. & Relative Velocity	Forces and Laws of Motion Intro to Force, Free Body Diagrams & Equilibrium	Thanksgiving Break	Winter Holidays
Week 5	Motion in One Dimension Motion in One Direction			Circular Motion and Univ. Gravitation Centripetal Motion & Acceleration Thermo Thermodynamics	

****Week is based on the month that the first day of the week occurs.**

Year-At-A-Glance	Department	Science	PEIMS Code	03060800
	Subject Area	Physics	Grade Level	9-12

3rd Nine Weeks	4th Nine Weeks
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	January	February	March	April	May
Week 1	Semester Exam Analysis Work and Energy Intro to Work	Momentum and Collisions Cons. Of Momentum	Light and Optical Phenomenon EMS and Light End of 3 rd 9 Weeks	Electrostatics Electrical Charges and Forces	Magnetism and Electromagnetism Magnetism Electromagnetism
Week 2	Work and Energy Kinetic vs. Potential Cons. Of Energy	Vibrations, Waves and Sound Harmonic Motion Wave Measurements	Spring Break	Electrostatics Electrical Charges and Forces Electricity and Circuits Intro to Elec. And Circuits	Magnetism and Electromagnetism Electromagnetism Modern and Quantum Physics Quantum Physics
Week 3	Work and Energy Cons. Of Energy Power	Vibrations, Waves and Sound Wave Behaviors and Interactions Sound Waves and Characteristics	Light and Optical Phenomenon Reflection Refraction	Electricity and Circuits Intro to Elec. And Circuits Series and Parallel Circuits and Ohm's Law	Modern and Quantum Physics Quantum Physics Review
Week 4	Momentum and Collisions Momentum	Vibrations, Waves and Sound Sound Waves and Characteristics	Light and Optical Phenomenon Diffraction, Polarization, and other phenomenon	Electricity and Circuits Power and Energy Sources	Semester Exams
Week 5	Momentum and Collisions Momentum Cons. Of Momentum				

****Week is based on the month that the first day of the week occurs.**