Pascack Valley Regional High School District

Pascack Hills High School, Montvale, New Jersey
Pascack Valley High School, Hillsdale, New Jersey

Course Name: Elements of Conceptual Physics

Born On: August, 2015
Revised On: August, 2020
Current Revision: August, 2023
Board Approval: 8/28/2023

New Jersey Curricular Mandates for Science Instruction

Disabled & LGBT:
18A:35-4.35 - History of disabled and LGBT persons included in middle and high school curriculum. A board of education shall include instruction on the political, economic, and social contributions of persons with disabilities and lesbian, gay, bisexual, and transgender people, in an appropriate place in the curriculum of middle school and high school students as part of the district's implementation of the New Jersey Student Learning Standards.

Diversity, Equity, and Inclusion (DEI):
C.18A:35-4.36a - Curriculum to include instruction on diversity and inclusion. 1. a. Beginning in the 2021-2022 school year, each school district shall incorporate instruction on diversity and inclusion in an appropriate place in the curriculum of students in grades kindergarten through 12 as part of the district's implementation of the New Jersey Student Learning Standards. b. The instruction shall: (1) highlight and promote diversity, including economic diversity, equity, inclusion, tolerance, and belonging in connection with gender and sexual orientation, race and ethnicity, disabilities, and religious tolerance; (2) examine the impact that unconscious bias and economic disparities have at both an individual level and on society as a whole; and (3) encourage safe, welcoming, and inclusive environments for all students regardless of race or ethnicity, sexual and gender identities, mental and physical disabilities, and religious beliefs. c. The Commissioner of Education shall provide school districts with sample learning activities and resources designed to promote diversity and inclusion.

Amistad Law:
N.J.S.A. 18A 52:16A-88 Every board of education shall incorporate the information regarding the contributions of African Americans to our country in an appropriate place in the curriculum of elementary and secondary school students.

Climate Change:
2020 NJSLS-Science: Earth's climate is now changing faster than at any point in the history of modern civilization, primarily as a result of human activities. Global climate change has already resulted in a wide range of impacts across New Jersey and in many sectors of its economy. The addition of academic standards that focus on climate change is important so that all students will have a basic understanding of the climate system, including the natural and human-caused factors that affect it. The underpinnings of climate change span across physical, life, as well as Earth and space sciences. The goal is for students to understand climate science as a way to inform decisions that improve quality of life for themselves, their community, and globally and to know how engineering solutions can allow us to mitigate impacts, adapt practices, and build resilient systems.

Dissection Law
N.J.S.A. 18A:35-4.25 and N.J.S.A. 18A:35-4.24 authorizes parents or guardians to assert the right of their children to refuse to dissect, vivisect, incubate, capture or otherwise harm or destroy animals or any parts thereof as part of a course of instruction.

Elements of Conceptual Physics			
Introduction: Scientific Method and Measurements			
Time Allotted: Approximately 4- 6 Weeks			
New Jersey Student Learning Standards (NJSLS)			
Science and Engineering Practices 1-8			
Science & Engineering Practices • **Constructing Explanations and Designing Solutions** • **Asking Questions and Defining Problems** • **Developing and Using Models** • **Planning and Carrying Out Investigations** • **Analyzing and Interpreting Data** • **Using Mathematical and Computational Thinking** • **Engaging in Argument from Evidence** • **Obtaining, Evaluating, and Communicating Information**			
Essential Questions	**Student Learning Objectives**	**Suggested Tasks/Activities**	**Evidence of Learning (Assessment)**
• What are the safety rules that must be followed when conducting experiments? • How can you solve a problem or answer a question using the Scientific Method? • How is data generated, displayed, and analyzed? • What are the basic units of measurements in the SI System? • How do we use technology in science?	Students will be able to: • Understand and apply information, skills, and procedures developed from the district safety program as it directly relates to the student of science. • Solve a problem using the Scientific Method. • Demonstrate how to create and interpret graphs using a line, pie and bar graphs using sample data. • Define length, weight, volume and temperature and their units. • Use proper equipment to	• Read aloud the district-wide safety rules. • Show lab safety equipment in the classroom: fire extinguisher, fume hood, safety shower, eyewash, and fire blanket and demonstrate how to use them. • Provide the students with illustrations of safety procedures not being followed. Students then circle and verbally explain what is wrong and what would be the correct procedure. • Role play the safety procedures correctly.	• Provide a lab that will demonstrate the use of appropriate equipment, techniques, and safety. • Observe students during the actual lab and review their procedures in regards to techniques and safety. • Students must sign and have parental signature of the safety contract. • Students must pass a safety quiz. • Students present the group activity and have a discussion. • Verbal quiz on Scientific Method. • Collect and grade graphs. • Quiz on graphing.

	measure length, weight, volume and temperature. ● Identify instruments of technology used in science including microscopes, computers, balances, etc. ● Identify scientific discoveries made possible through invention of technology as well as the evolution of technology through the advancement of science.	● Group Activity: Organize students in groups to solve a problem using the scientific method. ● Students manipulate steps into the correct order. ● Read and interpret graphs containing data to which students may relate. ● Give students a topic and survey the class to obtain data and have them develop a graph. ● Provide graphing exercise with given data. ● Complete worksheet, board work, or graphic organizer on measurement, base unit, and equipment. ● Give worksheets with practice problems, allow students to identify the information. ● Students identify items in the home measured in metrics or used in metric quantities. ● Measurement Lab ● Students identify names and uses of different instruments of technology. ● Allow students to use as many types of technology as possible. ● Discuss microscope and	● Written and oral responses to academic prompts. ● Lab report ● Quiz on Measurement ● Quiz on technology instrument identification ● Unit Test

		MRI machines as tools to advance science and vice versa. *Scientist Spotlight:* • **Thomas Edison** – How his hearing disability helped make him an inventor. *Diversity, Equity, and Inclusion*: • Changing Attitudes to disability in engineering • James Hermus – How learning challenges shaped a mechanical engineer's path.	
Resources/Materials	-District Safety Rules -Scientific Method Sorting Activity -Graphing Worksheets -Object to measure length, weight, volume and temperature along with the equipment -Microscope and images of MRI machines		
Interdisciplinary Connections	An understanding of measurement and data is essential in day-to-day life.		
Career Readiness, Life Literacies, and Key Skills	9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas. 9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice. 9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving. 9.2.12.CAP.8: Determine job entrance criteria (e.g., education credentials, math/writing/reading comprehension tests, drug tests) used by employers in various industry sectors.		
Computer Science & Design Thinking	8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems 8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.		

Modifications			
Multi-Lingual Learners	**Special Education**	**At-Risk**	**Gifted and Talented**
• Model steps • Show examples vs.. non examples of student work • Small group instruction (partner	• Additional time for assignments and assessments • Use of mnemonics • Review of directions	• Incorporate student choice • Provide peer mentoring to improve	• Ask higher level questions that require students to look into causes, experiences, and facts to draw a conclusion or make

up) ● Lower reading level of text ● Use sentence starters to give student practice with academic language ● Pre- teach vocab using pictures	● Have students restate directions or information back to you ● Concrete examples ● Support auditory presentations with visuals ● Review Sessions ● Access to completed notes ● Visual and verbal cues and prompts ● Graphic organizers ● Hands on activities ● Frequent Check-ins	understanding of the material.	connections to other areas of learning ● Use of open-ended questions rather than multiple choice questions. ● Choice of an alternate assignment that can be projects related to the area of study that extended the curriculum or independent projects that are chosen based on students' individual interests.

Elements of Conceptual Physics

Unit 1: Forces and Motion

Time Allotted: Approximately 8-10 Weeks

New Jersey Student Learning Standards (NJSLS)

EE.HS-PS2-3: Evaluate the effectiveness of safety devices and design a solution that could minimize the force of a collision. *(HS-PS2-3)*

Science & Engineering Practices	Disciplinary Core Ideas	Cross-Cutting Concepts
Constructing Explanations and Designing Solutions • Apply scientific ideas to solve a design problem, taking into account possible unanticipated effects.	**PS2.A: Forces and Motion** • If a system interacts with objects outside itself, the total momentum of the system can change; however, any such change is balanced by changes in the momentum of objects outside the system. **ETS1.A: Defining and Delimiting an Engineering Problem** • Criteria and constraints also include satisfying any requirements set by society, such as taking issues of risk mitigation into account, and they should be quantified to the extent possible and stated in such a way that one can tell if a given design meets them. *(secondary)* **ETS1.C: Optimizing the Design Solution** • Criteria may need to be broken down into simpler ones that can be approached systematically, and decisions about the priority of certain criteria over others (trade-offs) may be needed. *(secondary)*	**Cause and Effect** • Systems can be designed to cause a desired effect.

Essential Questions	Student Learning Objectives	Suggested Tasks/Activities	Evidence of Learning (Assessment)

● Who is Sir Issac Newton? ● What is the relationship between force and motion? ● How do you measure an object's motion? ● How can you manipulate the motion of an object? ● What safety devices can minimize the force of a collision?	Students will be able to: ● Determine if an object is moving ● Recognize the contribution of Sir Isaac Newton regarding the laws of motion. ● Determine forces that cause movement and can cause objects to stay together. ● Explain that when one object exerts force on another, force is also applied to the first object. ● Evaluate the effectiveness of safety devices and design a solution that could minimize the force of collision.	● Students remain still, then demonstrate movement using the body (waving, walking, jumping.) Demonstrate movement of objects ● Show video clips of outdoor and indoor scenes. Students identify what is moving. ● Students push against an object incrementally using their hands until the object moves to demonstrate that force is applied to only to the object, but also to the hand. ● Think pair, share to discuss content of various pictures that involve force and motion. ● Class activity on different types of forces. ● Show the three laws of motion in action using clips from the internet. ● Linear motion experiment: With a car moving at constant rate, drop sugar packets every second and observe the distance between the sugar packets ● Accelerated motion experiments: 1. Roll cars down different inclines and observe and measure their speed	● Classwork and handouts ● Tests and quizzes ● Class discussion and participation ● Self assessment ● Design Challenge Project

		2. Build and Launch Rockets 3. Drop objects from different heights and observe "smashability" 4. Reaction Time: Drop a meter stick and user a timer, measure where students catch it - Build and test a popsicle stick bridge - Circular motion experiment: Observe how string length affects circular motion ● Egg drop: Construct an apparatus that will keep an egg safe from a certain height. ● Students complete a design challenge to Design and make something to prevent head injuries for children while riding a bicycle using the given materials: glue, scissors, bubble wrap, egg carton pieces, paper cups, string, rubber bands, masking tape, a toy car and plank. *Scientist Spotlight*: ● **Dr. Hakeen Oluseyi** – Astrophysicist and founder for the African Astronomical Society, & One Telescope Project.	
Resources/Materials	-Internet clips -Objects to demonstrate force -Materials for the various experiments/design challenge		

ELA Companion Standards	Connections to NJSLS – English Language Arts WHST.9-12.7 Conduct short as well as more sustained research projects to answer a question (including a self generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
Interdisciplinary Connections	Connections to ELA Essential Elements: EE.SL.11-12.5: Use digital media strategically (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to support understanding and add interest. Connections to NJSLS – Mathematics MP.4 Model with mathematics.
Career Readiness, Life Literacies, and Key Skills	9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas. 9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice. 9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving. 9.2.12.CAP.8: Determine job entrance criteria (e.g., education credentials, math/writing/reading comprehension tests, drug tests) used by employers in various industry sectors.
Computer Science & Design Thinking	8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

Modifications

Multi-Lingual Learners	Special Education	At-Risk	Gifted and Talented
● Model steps ● Show examples vs. non examples of student work ● Small group instruction (partner up) ● Lower reading level of text ● Use sentence starters to give student practice with academic language ● Pre- teach vocab using pictures	● Additional time for assignments and assessments ● Use of mnemonics ● Review of directions ● Have students restate directions or information back to you ● Concrete examples ● Support auditory presentations with visuals ● Review Sessions ● Access to completed notes ● Visual and verbal cues and prompts	● Incorporate student choice ● Provide peer mentoring to improve understanding of the material.	● Ask higher level questions that require students to look into causes, experiences, and facts to draw a conclusion or make connections to other areas of learning ● Use of open-ended questions rather than multiple choice questions. ● Choice of an alternate assignment that can be projects related to the area of study that extended the curriculum or independent projects that are chosen

	• Graphic organizers • Hands on activities • Frequent Check-ins		based on students' individual interests.

Elements of Conceptual Physics

Unit 2: Wave Properties

Time Allotted: Approximately 6-8 Weeks

New Jersey Student Learning Standards (NJSLS)

EE.HS-PS4-5: Make a claim supported by evidence that shows how some devices use light and sound waves to transmit and capture information. *(HS-PS4-5)*

Science & Engineering Practices	Disciplinary Core Ideas	Cross-Cutting Concepts
Obtaining, Evaluating, and Communicating Information • Communicate technical information or ideas (e.g. about phenomena and/or the process of development and the design and performance of a proposed process or system) in multiple formats (including orally, graphically, textually, and mathematically).	**PS3.D: Energy in Chemical Processes** • Solar cells are human-made devices that likewise capture the sun's energy and produce electrical energy. *(secondary)* **PS4.A: Wave Properties** • Information can be digitized (e.g., a picture stored as the values of an array of pixels); in this form, it can be stored reliably in computer memory and sent over long distances as a series of wave pulses. **PS4.B: Electromagnetic Radiation** • Photoelectric materials emit electrons when they absorb light of a high-enough frequency. **PS4.C: Information Technologies and Instrumentation** • Multiple technologies based on the understanding of waves and their interactions with matter are part of everyday experiences in the modern world (e.g., medical imaging, communications, scanners) and in scientific research. They are essential tools for producing, transmitting, and capturing signals and for storing and interpreting the information contained in them.	**Cause and Effect** • Systems can be designed to cause a desired effect. - **Connections to Engineering, Technology, and Applications of Science** **Interdependence of Science, Engineering, and Technology** • Science and engineering complement each other in the cycle known as research and development (R&D). **Influence of Engineering, Technology, and Science on Society and the Natural World** • Modern civilization depends on major technological systems.

Essential Questions	Student Learning Objectives	Suggested Tasks/Activities	Evidence of Learning (Assessment)

• What are the characteristics of light and how does it normally behave? • How can we describe the movement of light as it passes through different substances? • How do lenses bend light in specific ways in order to accomplish useful jobs? • How do different objects vibrate in order to produce sounds? • What is the relationship between the speed at which an object vibrates and the pitch of the sound that is produced?	Students will be able to: • Explain that light is a form of energy and light rays normally travel in straight lines. • Observe that light can reflect (bounce) off some objects like mirrors, refract (bend) through some objects like lenses, and be absorbed by some objects like soil. • Demonstrate that some objects allow all the light to travel through them (transparent), some allow some of the light to travel through (translucent), and others prevent light from traveling through them (opaque). • Determine how lenses are used to bend light in useful ways. • Explain that a prism bends light into different parts. Prisms can separate white light into the different colors that make it up because each color of light bends differently when it passes through a prism. • Understand that sound is produced by vibrating objects • Vibrating objects produce sound waves that travel	• Students will observe a laser optics demo to see certain substances make light bend. • Students will look at an optical illusion and hypothesize what they think is happening. • Students will use prisms to see white light separated into colors. • Students will manipulate a slinky to demonstrate various types of waves and record their observations. • Students will use resonance tubes to study sounds. • Using the concepts of hearing, build a device that amplifies sound. *Scientist Spotlight:* • **Wanda Diaz-Merced**: How a blind astronomer/astrophysicist learned to visualize space through sound. • **Jamila Abass** – Software engineer and CEO of M-Farm; an online platform for small farmers to connect with buyers and exchange information on crops.	• Classwork and handouts • Tests and quizzes • Class discussion and participation • Self assessment

	through the air (and other substances). ● Determine that the faster an object vibrates the more sound waves it produces per second and the higher the pitch of the sound.		
Resources/Materials	- Prisms & slinkies - Resonance tubes - Internet clips - Notes with illustrations		
ELA Companion Standards	WHST.9-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.		
Interdisciplinary Connections	Connections to ELA Essential Elements EE.SL.11-12.5: Use digital media strategically (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to support understanding and add interest. Connections to Mathematics Essential Elements EE.N-Q.1-3: Express quantities to the appropriate precision of measurement. EE.A-SSE.1: Identify an algebraic expression involving one arithmetic operation to represent a real-world problem. EE.A-CED.2-4: Solve one-step inequalities. EE.N-Q.1-3: Express quantities to the appropriate precision of measurement.		
Career Readiness, Life Literacies, and Key Skills	9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas. 9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice. 9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving. 9.2.12.CAP.8: Determine job entrance criteria (e.g., education credentials, math/writing/reading comprehension tests, drug tests) used by employers in various industry sectors.		
Computer Science & Design Thinking	8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.		
Modifications			
Multi-Lingual Learners	**Special Education**	**At-Risk**	**Gifted and Talented**

• Model steps • Show examples vs. non examples of student work • Small group instruction (partner up) • Lower reading level of text • Use sentence starters to give student practice with academic language • Pre- teach vocab using pictures	• Additional time for assignments and assessments • Use of mnemonics • Review of directions • Have students restate directions or information back to you • Concrete examples • Support auditory presentations with visuals • Review Sessions • Access to completed notes • Visual and verbal cues and prompts • Graphic organizers • Hands on activities • Frequent Check-ins	• Incorporate student choice • Provide peer mentoring to improve understanding of the material.	• Ask higher level questions that require students to look into causes, experiences, and facts to draw a conclusion or make connections to other areas of learning • Use of open-ended questions rather than multiple choice questions. • Choice of an alternate assignment that can be projects related to the area of study that extended the curriculum or independent projects that are chosen based on students' individual interests.

Elements of Conceptual Physics
Unit 3: Electricity and Magnetism

Time Allotted: Approximately 4-6 Weeks

New Jersey Student Learning Standards (NJSLS)

HS-PS3-5 Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction.

HS-PS4-3 Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.

HS-PS4-4 Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.

Science & Engineering Practices	Disciplinary Core Ideas	Cross-Cutting Concepts
Developing and Using Models • Develop and use a model based on evidence to illustrate the relationships between systems or between components of a system. **Engaging in Argument from Evidence** • Evaluate the claims, evidence, and reasoning behind currently accepted explanations or solutions to determine the merits of arguments. - ***Connections to Nature of Science*** **Science Models, Laws, Mechanisms, and Theories Explain Natural Phenomena** • A scientific theory is a substantiated explanation of some aspect of the natural world, based on a body of facts that have been repeatedly confirmed through observation and experiment and the science community validates each theory before it is accepted. If new evidence is discovered that the theory does not accommodate, the theory is generally modified in light of this new evidence.	**PS3.C: Relationship Between Energy and Forces** • When two objects interacting through a field change relative position, the energy stored in the field is changed. **PS4.A: Wave Properties** • [From the 3–5 grade band endpoints] Waves can add or cancel one another as they cross, depending on their relative phase (i.e., relative position of peaks and troughs of the waves), but they emerge unaffected by each other. (Boundary: The discussion at this grade level is qualitative only; it can be based on the fact that two different sounds can pass a location in different directions without getting mixed up.) **PS4.B: Electromagnetic Radiation** • Electromagnetic radiation (e.g., radio, microwaves, light) can be modeled as a wave of changing electric and magnetic fields or as particles called photons. The wave model is useful for explaining many features of electromagnetic radiation, and the particle model explains other features.	**Cause and Effect** • Cause and effect relationships can be suggested and predicted for complex natural and human designed systems by examining what is known about smaller scale mechanisms within the system.

Essential Questions	Student Learning Objectives	Suggested Tasks/Activities	Evidence of Learning (Assessment)
• Why do magnets repel and attract each other? • What is the relationship between electricity and magnetism?	Students will be able to: • Demonstrate how static electricity is created. • Complete an electric circuit. • Compare a bar magnet with	• Explore static electricity by rubbing balloons on hair, walking across a carpet and touching a metal door handle and pulling your hat off and	• Classwork and handouts • Hands on activities • Class discussions/participation • Electric Circuit design

• How does a basic circuit work? • What is a conductor and an insulator? • What are the everyday uses of electricity and magnetism?	an electromagnet. • Describe how magnets can be used to generate electricity. • Explain how some materials are good conductors and others are good insulators. • Understand the concept that like charges repel and opposites attract. • Determine how resistors change some currents into heat or light. • Explain how electric currents are useful.	having your hair stand on end, etc. • Make a Venn diagram to compare and contrast electricity and magnetism. • Students will place computer paper over magnets and sprinkle iron filings on top; They will then draw field lines • Construct an electromagnet and compare it to an ordinary bar magnet. • Design a simple electric Circuit • Electrostatic Demos *Diversity, Equity, and Inclusion*: • How magnets help severely paralyzed individuals operate a tongue-controlled wheelchair.	
Resources/Materials	- PowerPoint for notetaking with visuals - Magnets - Iron fillings - Materials for designing an electric circuit - Video clips		
ELA Companion Standards	WHST.9-12.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. RST.9-10.8 Determine if the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem. RST.11-12.1 Write arguments focused on discipline-specific content.		
Interdisciplinary Connections	Connections to ELA Essential Elements: EE.SL.11-12.5: Use digital media strategically (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to support understanding and add interest. Connections to NJSLS – Mathematics MP.4 Model with mathematics.		

	EE.A-SSE.1: Identify an algebraic expression involving one arithmetic operation to represent a real-world problem. EE.A-CED.2-4: Solve one-step inequalities.
Career Readiness, Life Literacies, and Key Skills	9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas. 9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice. 9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving. 9.2.12.CAP.8: Determine job entrance criteria (e.g., education credentials, math/writing/reading comprehension tests, drug tests) used by employers in various industry sectors.
Computer Science & Design Thinking	8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

Modifications

Multi-Lingual Learners	Special Education	At-Risk	Gifted and Talented
• Model steps • Show examples vs. non examples of student work • Small group instruction (partner up) • Lower reading level of text • Use sentence starters to give student practice with academic language • Pre- teach vocab using pictures	• Additional time for assignments and assessments • Use of mnemonics • Review of directions • Have students restate directions or information back to you • Concrete examples • Support auditory presentations with visuals • Review Sessions • Access to completed notes • Visual and verbal cues and prompts • Graphic organizers • Hands on activities • Frequent Check-ins	• Incorporate student choice • Provide peer mentoring to improve understanding of the material.	• Ask higher level questions that require students to look into causes, experiences, and facts to draw a conclusion or make connections to other areas of learning • Use of open-ended questions rather than multiple choice questions. • Choice of an alternate assignment that can be projects related to the area of study that extended the curriculum or independent projects that are chosen based on students' individual interests.

Additional Resources to promote DEI:

- Structure Matters: Twenty-One Teaching Strategies to Promote Student Engagement and Cultivate Classroom Equity
- Race Matters
- Inclusive Teaching