



Wall Township Public Schools	Board Approval Date:
Course Title: WIS LLD Science	
Course Description: The WIS LLD Science curriculum is designed in a thematic approach that focuses on investigating complex ideas, creating scientific explanations, creating evidence based solutions, and critical thinking skills necessary for academic, personal, and professional success. Students will participate in a variety of activities, often life skills based, to demonstrate not just comprehension, but functionality.	

New Jersey Student Learning Standards

Vision for Science Education in New Jersey

Prepare students to become scientifically literate individuals who can effectively:

- Apply scientific thinking, skills, and understanding to real-world phenomena and problems;
- Engage in systems thinking and modeling to explain phenomena and to give a context for the ideas to be learned;
- Conduct investigations, solve problems, and engage in discussions;
- Discuss open-ended questions that focus on the strength of the evidence used to generate claims;
- Read and evaluate multiple sources, including science-related magazine and journal articles and web-based resources to gain knowledge about current and past science problems and solutions and develop well-reasoned claims; and
- Communicate ideas through journal articles, reports, posters, and media presentations that explain and argue.

New Jersey Student Learning Standards - Science

Science

Scientific and technological advances have proliferated and now permeate most aspects of life in the 21st century. It is increasingly important that all members of our society develop an understanding of scientific and engineering concepts and processes. Learning how to construct scientific explanations and how to design evidence-based solutions provides students with tools to think critically about personal and societal issues and needs. Students can then contribute meaningfully to decision-making processes, such as discussions about climate change, new approaches to health care, and innovative solutions to local and global problems.

Three Dimensions of NJSLS Science

Performance Expectations (PE) are student learning standards devised with the three dimensions or components described below. For detailed information regarding the research and design behind the standards click here.

Disciplinary Core Ideas (DCI)

The fundamental ideas that are necessary for understanding a given science discipline. The core ideas all have broad importance within or across science or engineering disciplines, provide a key tool for understanding or investigating complex ideas and solving problems, relate to societal or personal concerns, and can be taught over multiple grade levels at progressive levels of depth and complexity.

- Disciplinary Core Ideas in Physical Science (PS)
- Disciplinary Core Ideas in Life Science (LS)
- Disciplinary Core Ideas in Earth and Space Science (ESS)
- Disciplinary Core Ideas in Engineering, Technology, and the Application of Science (ETS)

Science and Engineering Practices (SEP)

The practices are what students DO to make sense of phenomena. They are both a set of skills and a set of knowledge to be internalized. The SEPs reflect the major practices that scientists and engineers use to investigate the world and design and build systems.

Crosscutting Concepts (CCC)

These are concepts that hold true across the natural and engineered world. Students can use them to make connections across seemingly disparate disciplines or situations, connect new learning to prior experiences, and more deeply engage with material across the other dimensions. The NGSS requires that students explicitly use their understanding of the CCCs to make

sense of phenomena or solve problems.	
Science and Engineering Practices (SEP) • Asking Questions and Defining Problems • Planning and Carrying Out Investigations • Analyzing and Interpreting Data • Developing and Using Models • Constructing Explanations and Designing Solutions • Engaging in Argument from Evidence • Using Mathematics and Computational Thinking • Obtaining, Evaluating, and Communicating Information	**Crosscutting Concepts (CCC)** • Patterns • Cause and Effect: Mechanism and Explanation • Scale, Proportion, and Quantity • Systems and System Models • Energy and Matter • Structure and Function • Stability and Change

Course Sequence & Pacing

Unit Title	Estimated Number of Instructional Periods
Unit 1: Understanding Our Differences	10 weeks
Unit 2: My Community	10 weeks
Unit 3: Math that Matters	10 weeks
Unit 4: Jobs and Career Exploration	10 weeks
Unit 5: Technology - Past, Present, and Future	10 weeks
Unit 6: Health, Wellness, and the Human Body	10 weeks

Unit 7: The Environment and Sustainability	10 weeks
Unit 8: Media Literacy	10 weeks

Unit 1

Desired Results

Unit 1 Title: Understanding Our Differences

Unit Summary: In this unit, students will explore how differences make living things unique. Topics to be explored include classifying organisms, heredity, and evolution. Through observation and data collection an understanding will be built that although organisms are different, they are all important. Emphasis will be placed on the idea that although there are differences in appearance, abilities, behaviors, and characteristics, all living things have needs and are connected to one another.

Learning Standards

NJSLS:

- **3-5-ETS1-1** Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- **3-5-ETS1-2** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
- **3-5-ETS1-3** Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.
- **MS-LS1-1** Conduct an investigation to provide evidence that living things are made of cells, either one cell or many different numbers and types of cells.
- **MS-LS1-5** Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.
- **MS-LS3-1** Develop and use a model to describe why structural changes to genes (mutations) located on

chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.

- **MS-LS4-2** Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.
- **MS-LS4-4** Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.
- **MS-LS4-5** Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.
- **MS-LS4-6** Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.

Interdisciplinary Connections

Career Readiness, Life Literacies, & Key Skills *(CLKS)*:

- **9.1.8.FP.1** Describe the impact of personal values on various financial scenarios.
- **9.1.8.FP.2** Evaluate the role of emotions, attitudes, and behavior (rational and irrational) in making financial decisions.
- **9.1.8.FP.4** Analyze how familial and cultural values influence savings rates, spending, and other financial decisions.
- **9.4.8.CI.1** Assess data gathered on varying perspectives on causes of climate change (e.g., crosscultural, gender-specific, generational), and determine how the data can best be used to design multiple potential solutions (e.g., RI.7.9, 6.SP.B.5, 7.1.NH.IPERS.6, 8.2.8.ETW.4).
- **9.4.8.CT.1** Evaluate diverse solutions proposed by a variety of individuals, organizations, and/or agencies to a local or global problem, such as climate change, and use critical thinking skills to predict which one(s) are likely to be effective (e.g., MS-ETS1-2).
- **9.4.8.CT.2** Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option (e.g., MS-ETS1-4, 6.1.8.CivicsDP.1).
- **9.4.8.GCA.1** Model how to navigate cultural differences with sensitivity and respect (e.g., 1.5.8.C1a).
- **9.4.8.GCA.2** Demonstrate openness to diverse ideas and perspectives through active discussions to achieve a group goal.

Computer Science & Design Thinking *(CS & DT)*:

- **8.1.8.DA.1** Organize and transform data collected using computational tools to make it usable for a specific purpose.

Interdisciplinary Connections:

- **NJSLSA.R1.** Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
- **NJSLSA.R2.** Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
- **NJSLSA.R3.** Analyze how and why individuals, events, and ideas develop and interact over the course of a text.
- **NJSLSA.W1.** Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
- **NJSLSA.W2.** Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
- **NJSLSA.W7.** Conduct short as well as more sustained research projects, utilizing an inquiry-based research process, based on focused questions, demonstrating understanding of the subject under investigation.

Learning Targets

Unit Essential Questions:

- How can scientists use observations to understand able to describe differences in living things
- How do scientists classify organisms based on their similarities and differences?
- How do traits get passed from parents to offspring?

Unit Enduring Understandings:

- Scientists use observations to collect information about an organism's traits, behaviors, and more.
- Scientists classify organisms by grouping them based on their similarities, and separate them based on their differences.

• What is the difference between a dominant and recessive trait? • Why do some differences help organisms survive in their environment? • How do organisms change over time, and what causes those changes? • Why is understanding and respecting differences important in science and in our community?	• Traits are passed from parents to offspring through genes; genes are pieces of information found in DNA. • Dominant traits are characteristics that mask the presence of recessive traits. • Differences help organisms survive because certain traits give them advantages (such as find food and avoid predators) in their environment • Organisms change over time through evolution. Evolution occurs because organisms have differences in their traits to help them survive their environment. • Understanding and respecting differences is important in science and our community because it helps us learn why living things and people are unique.
Vocabulary: observation, trait, evidence, data, compare, analyze, pattern, organism, classification, taxonomy, species, group, similarities, differences, adaptation, heredity, offspring, gene, DNA, inherited trait, variation, dominant trait, recessive trait, evolution, survival, environment, adapt, diversity	
Students will be able to: • Ask questions and make predictions based on observations • Use evidence to support scientific explanations • Use observation to identify and describe traits of living things • Collect and record information using words, pictures, charts, and tables • Explain similarities and differences among living things • Identify characteristics scientists use to classify organisms • Classify organisms into groups based on observable traits	

- Explain that traits are passed from parents to offspring through genes
- Identify examples of inherited traits
- Distinguish between dominant and recessive traits
- Explain organisms change over time through evolution
- Explain how adaptations can increase an organism's chance of survival

Learning Activities & Differentiation:

- Organism observation lab
- Sort and classify organisms (picture cards)
- Build an organism classification tree
- Trait identification
- Family traits model
- Dominant and recessive trait Punnett squares
- Adaptation investigation
- Survival of the fittest simulation (ex. which beak works best)
- Evolution timeline

Assessment Evidence

Formative Assessments: open ended questions based on essential questions, stop-and-jot, exit slips, one-sentence summary, quick write, polls, writing checkpoints, experiments/labs, relevant Community Based Instruction, self assessments

Summative Assessments: Differences Make us Unique Reflection written assignment. Organism classification project. Evolution case study. Design a new organism.

Common Benchmark Assessments: unit assessment, cooperative and independent learning experiences, class discussion and participation

Alternative Assessments: Multimedia presentations and projects

Core Instructional & Supplemental Materials

Texts, Readings, Online Platforms & Other Resources:

- Teacher Created Materials (google slides and docs)
- Laboratory activities and equipment
- Google Apps for Education
- Chromebooks
- EdPuzzle
- Kahoot
- Gimkit
- Blooket
- Youtube
- Quizlet

Science Websites:

- https://phet.colorado.edu/
- https://thewonderofscience.com/
- https://www.openscied.org/why-openscied/about-us/

Accommodations and Modifications: Students with Disabilities, English Language Learners, Students at Risk of Failure, Students with 504s, Gifted & Talented Students

Specific Strategies and Practices that Support Students with Disabilities:

Students receiving Special Education programming have specific goals and objectives, as well as accommodations and modifications outlined within their Individualized Education Plans (IEP) due to an identified disability and/or diagnosis. In addition to exposure to the general education curriculum, the instruction is differentiated based upon the student's needs. The IEP acts as a supplemental curriculum guide inclusive of instructional strategies that support each learner.

- Small group/One to one - Additional time - Review of directions - Student restates information - Space for movement or breaks - Extra visual and verbal cues and prompts - Preferential seating - Follow a routine/schedule - Rest breaks - Verbal and visual cues regarding directions and staying on task - Checklists - Immediate feedback

Specific Strategies and Practices that Support English Language Learners

English language learner (ELL) is a national-origin-minority student who is limited-English-proficient. This term is often preferred over limited-English-proficient (LEP) as it highlights accomplishments rather than deficits.

- Pre-teaching of vocabulary and concepts - Personal Glossary - Extended Time - Simplified/Verbal Instructions - Frequent Breaks - Visual learning, including graphic organizers - Use of cognates to increase comprehension - Teacher modeling - Pairing students with beginning English language skills with students who have more advanced English language skills - Scaffolding - Word walls - Think-pair-share - Cooperative learning groups

Students at Risk of Failure

- Home/School Connection - Alternative Assessments - Learning Contracts - Homogenous Grouping - Supplemental Instruction - Think-Pair-Share by Readiness - Homework Options - Differentiated Online Practice - Leveled Rubrics - Tiered Level of Supports - Tiered Activities - Small Group Instruction - Work Alone Choice - Group Work Choice

Students with 504 Plans

Teachers are responsible for implementing designated services and strategies identified on a student's 504 Plan.
504 plans are formal plans that schools develop to give kids the support they need and covers any condition that limits daily activities in a major way. Students' accommodations are outlined in their individual 504 plan.

Specific Strategies and Practices that Support Gifted & Talented Students

It is critical that all teachers are able to recognize a high-ability student who may need more depth and complexity in instruction.

-Homogenous Grouping - Small Group In-Depth Instruction - Differentiated Online Practice - Alternative Assessments - Pre-Assess to provide Differentiated Instruction to Accelerate Learning

Unit 2

Desired Results

Unit 2 Title: My Community

Unit Summary: In this unit, students will explore the relationship between people and the environment in their local community. Topics to be discussed include physical geography, the importance of recycling, climate and weather, and problem solving through community action. Throughout the unit, emphasis will be placed on collecting and interpreting data, identifying cause and effect relationships, problem solving, and communicating ideas.

Learning Standards

NJSLS:

- **3-5-ETS1-1** Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- **3-5-ETS1-2** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
- **3-5-ETS1-3** Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.
- **5-ESS3-1** Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources, environment and address climate change issues.
- **MS-LS2-1** Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
- **MS-LS2-2** Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.
- **MS-LS2-4** Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.
- **MS-ESS3-3** Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

- **MS-ESS3-4** Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.
- **MS-ESS3-5** Ask questions to clarify evidence of the factors that have caused climate change over the past century.

Interdisciplinary Connections

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- **9.1.8.CP.1** Compare prices for the same goods or services.
- **9.1.8.FP.2** Evaluate the role of emotions, attitudes, and behavior (rational and irrational) in making financial decisions.
- **9.1.8.FP.6** Compare and contrast advertising messages to understand what they are trying to accomplish.
- **9.2.8.CAP.10** Evaluate how careers have evolved regionally, nationally, and globally.
- **9.4.8.CI.1** Assess data gathered on varying perspectives on causes of climate change (e.g., crosscultural, gender-specific, generational), and determine how the data can best be used to design multiple potential solutions (e.g., RI.7.9, 6.SP.B.5, 7.1.NH.IPERS.6, 8.2.8.ETW.4).
- **9.4.8.CI.2** Repurpose an existing resource in an innovative way (e.g., 8.2.8.NT.3).
- **9.4.8.CT.1** Evaluate diverse solutions proposed by a variety of individuals, organizations, and/or agencies to a local or global problem, such as climate change, and use critical thinking skills to predict which one(s) are likely to be effective (e.g., MS-ETS1-2).
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Learning Targets

Unit Essential Questions:

- How do humans depend on and impact the environment around them?
- How can we use science to understand problems and make our community better?
- What are the major landforms, regions, and natural resources of New Jersey?
- How does the physical geography of New Jersey affect where people work, live, and play?
- Why is recycling important for our community and the environment?
- How can reducing, reusing, and recycling help solve environmental problems?
- What is the difference between weather and climate?

Unit Enduring Understandings:

- Humans depend on the environment for things we need to survive. Humans impact the environment through the choices we make.
- We can use science to observe, collect data, analyze data, and solve problems in our community.
- New Jersey has various landforms, regions, and natural resources that shape the physical geography of New Jersey.
- The physical geography of New Jersey creates opportunities and challenges for people to work, live, and play.

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- What environmental concerns affect New Jersey?
- What steps can people take to make positive changes in their environment and community?

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- Recycling is important because it helps protect natural resources, reduces waste, and keeps the community clean.
- Reducing, reusing, and recycling can help solve environmental concerns by creating less waste and protecting natural resources.
- Weather is short term and can change from day to day. Climate is the long term pattern of weather in a specific location.
- New Jersey's environmental concerns include water and air pollution, climate change, habitat loss, and shoreline concerns.
- Making responsible choices help people make positive changes in their environment and community.

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<td colspan="2">Vocabulary: geography, physical geography, landform, region, mountain, valley, plain, coast, wetland, river, natural resource, habitat, reduce, reuse, recycle, conservation, waste, landfill, pollution, renewable resource, nonrenewable resource, weather, climate, climate change</td>
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<tr>
<td colspan="2">Students will be able to:

- Describe landforms, regions, and natural resources of New Jersey
- Explain how New Jersey's physical geography affects where people live, work, and play
- Describe the importance of natural resources
- Identify materials they can be reduced, reused, and recycled
- Describe how human actions impact the environment
- Describe the difference between weather and climate
- Identify common weather conditions

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- Argue how changes in climate can impact the environment and communities
- Argue environmental concerns that affect New Jersey
- Work with others to brainstorm possible solutions to environmental concerns

Learning Activities & Differentiation:

- New Jersey physical map identifications
- Create a New Jersey landform map
- Landform sorting
- New Jersey natural resources research
- New Jersey virtual field trip (parks, landforms, natural landmarks)
- Reduce, reuse, recycle sorting
- Recycling research
- Create recycling posters/signs
- Recycling challenge/log/journal
- Weather observation journal
- Weather vs climate sorting
- New Jersey environment cause and effect
- Community solution action plan

Assessment Evidence

Formative Assessments: open ended questions based on essential questions, stop-and-jot, exit slips, one-sentence summary, quick write, polls, writing checkpoints, experiments/labs, relevant Community Based Instruction, self assessments

Summative Assessments: NJ map project, Upcycle project, environmental citizenship reflection

Common Benchmark Assessments: unit assessment, cooperative and independent learning experiences, class discussion and participation

Alternative Assessments: Multimedia presentations and projects

Core Instructional & Supplemental Materials

Texts, Readings, Online Platforms & Other Resources:

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Unit 3

Desired Results

Unit 3 Title: Math that Matters

Unit Summary: In this unit students will discover how math is used in science in order to make informed decisions regarding natural resources and energy use. Topics included in this unit are scientific measurements, renewable and nonrenewable resources, energy efficiency, and alternative energy sources. Throughout this unit, students will be challenged to problem solve by comparing and analyzing data.

Learning Standards

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- **5-ESS3-1** Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources, environment and address climate change issues.

- **MS-ESS3-3** Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
- **MS-ESS3-5** Ask questions to clarify evidence of the factors that have caused climate change over the past century.

Interdisciplinary Connections

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- **NJSLSA.W2.** Write informative/explanatory texts to examine and convey complex ideas and information .
- **NJSLSA.W7.** Conduct short as well as more sustained research projects.
- **NJSLSA.6.NS.B** Compute fluently with multi-digit numbers & find common factors and multiples
- **NJSLSA.6.NS.C** Apply and extend previous understandings of numbers to the system of rational numbers
- **NJSLSA.6.EE.A** Apply and extend previous understandings of arithmetic to algebraic expressions

Learning Targets

Unit Essential Questions:

- How do scientists use math and measurements to understand the world?
- Why is it important for scientists to collect accurate measurements and organize data?
- What is the difference between renewable and nonrenewable resources?
- How can we use data to make decisions about conserving natural resources?
- What choices can we make to reduce energy waste?
- What are the advantages and challenges of alternative energy sources?

Unit Enduring Understandings:

- Scientists use math and measurements to understand the world by analyzing and comparing information in order to make predictions and solve problems.
- Scientists collect accurate measurements and organize data in order to analyze it, create solutions to problems, and make predictions.
- Renewable resources can be replaced by nature, while nonrenewable resources are limited and not able to be replaced.
- Data can be used to make decisions about conserving natural resources by analyzing information about how resources are used.
- Making choices that use less energy while still meeting our needs will reduce energy waste.
- Alternative energy is renewable and creates less pollution. However, they are also more expensive to start and weather dependent.

Vocabulary: measurement, data, tool, unit, length, mass, volume, temperature, accuracy, estimate, natural resource, renewable resource, nonrenewable resource, conservation, fossil fuel, energy efficiency, energy waste, consumption, alternative energy, solar energy, wind energy, hydroelectric energy

Students will be able to:

- Explain why scientists use math and measurements to collect information

- Identify and use common scientific measurement tools
- Identify various scientific units of measure
- Explain why accurate measurements are important in science
- Compare data
- Identify examples of renewable and nonrenewable resources
- Classify energy sources as renewable or nonrenewable
- Explain the importance of conservation
- Describe how human choices impact the environment and natural resources
- Explain why energy efficiency is important
- Develop strategies for reducing energy consumption in daily life
- Identify different alternative energy sources
- Compare the advantages and challenges of different energy sources

Learning Activities & Differentiation:

- Measurement lab or stations
- Classroom data collection and graphing
- Measurement scavenger hunt
- Natural resource sorting
- Create a brochure on conservation
- Energy saving challenge/journal
- Energy efficiency comparisons
- Alternative energy research
- Energy source comparisons

Assessment Evidence
Formative Assessments: open ended questions based on essential questions, stop-and-jot, exit slips, one-sentence summary, quick write, polls, writing checkpoints, experiments/labs, relevant Community Based Instruction, self assessments
Summative Assessments: Alternative energy research and presentation, scientific measurement performance assessment
Common Benchmark Assessments: unit assessment, cooperative and independent learning experiences, class discussion and participation
Alternative Assessments: Multimedia presentations and projects

Core Instructional & Supplemental Materials

Texts, Readings, Online Platforms & Other Resources:

- Teacher Created Materials (google slides and docs)
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- Chromebooks
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- Small group/One to one - Additional time - Review of directions - Student restates information - Space for movement or breaks - Extra visual and verbal cues and prompts - Preferential seating - Follow a routine/schedule - Rest breaks - Verbal and visual cues regarding directions and staying on task - Checklists - Immediate feedback

Specific Strategies and Practices that Support English Language Learners

English language learner (ELL) is a national-origin-minority student who is limited-English-proficient. This term is often preferred over limited-English-proficient (LEP) as it highlights accomplishments rather than deficits.

- Pre-teaching of vocabulary and concepts - Personal Glossary - Extended Time - Simplified/Verbal Instructions - Frequent Breaks - Visual learning, including graphic organizers - Use of cognates to increase comprehension - Teacher modeling - Pairing students with beginning English language skills with students who have more advanced English language skills - Scaffolding - Word walls - Think-pair-share - Cooperative learning groups

Students at Risk of Failure

- Home/School Connection - Alternative Assessments - Learning Contracts - Homogenous Grouping - Supplemental Instruction - Think-Pair-Share by Readiness - Homework Options - Differentiated Online Practice - Leveled Rubrics - Tiered Level of Supports - Tiered Activities - Small Group Instruction - Work Alone Choice - Group Work Choice

Students with 504 Plans

Teachers are responsible for implementing designated services and strategies identified on a student's 504 Plan.
504 plans are formal plans that schools develop to give kids the support they need and covers any condition that limits daily activities in a major way. Students' accommodations are outlined in their individual 504 plan.

Specific Strategies and Practices that Support Gifted & Talented Students
It is critical that all teachers are able to recognize a high-ability student who may need more depth and complexity in instruction.
-Homogenous Grouping - Small Group In-Depth Instruction - Differentiated Online Practice - Alternative Assessments - Pre-Assess to provide Differentiated Instruction to Accelerate Learning

Unit 4

Desired Results

Unit 4 Title: Jobs and Career Exploration

Unit Summary: In this unit, students will learn how scientific thinking connects to a variety of jobs and careers. Topics to be discussed include the scientific method and problem solving, scientific skills in the workplace, workplace safety, and jobs and careers in science. Throughout the unit students will gain an understanding that science is used in more than just the classroom; we can apply scientific information and skills to solve everyday problems.

Learning Standards

NJSLS:

- **3-5-ETS1-1** Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- **3-5-ETS1-2** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
- **3-5-ETS1-3** Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.
- **5-ESS3-1** Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources, environment and address climate change issues.

- **MS-ESS3-3** Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

Interdisciplinary Connections

Career Readiness, Life Literacies, & Key Skills *(CLKS)*:

- **9.2.8.CAP.2** Develop a plan that includes information about career areas of interest.
- 9.**2.8.CAP.3** Explain how career choices, educational choices, skills, economic conditions, and personal behavior affect income.
- **9.2.8.CAP.5** Develop a personal plan with the assistance of an adult mentor that includes information about career areas of interest, goals and an educational plan.
- **9.2.8.CAP.10** Evaluate how careers have evolved regionally, nationally, and globally.
- **9.2.8.CAP.12** Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential.
- **9.4.8.CI.1** Assess data gathered on varying perspectives on causes of climate change (e.g., crosscultural, gender-specific, generational), and determine how the data can best be used to design multiple potential solutions (e.g., RI.7.9, 6.SP.B.5, 7.1.NH.IPERS.6, 8.2.8.ETW.4).

  9.4.8.CT.2 Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option (e.g., MS-ETS1-4, 6.1.8.CivicsDP.1).

Computer Science & Design Thinking *(CS & DT)*:

- **8.1.8.DA.1** Organize and transform data collected using computational tools to make it usable for a specific purpose.

Interdisciplinary Connections:

- **NJSLSA.R1.** Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
- **NJSLSA.R3.** Analyze how and why individuals, events, and ideas develop and interact over the course of a text.
- **NJSLSA.W1.** Write arguments to support scientific claims

- **NJSLSA.W2.** Write informative/explanatory texts to examine and convey complex ideas and information.
- **NJSLSA.W7.** Conduct short as well as more sustained research projects, utilizing an inquiry-based research process, based on focused questions, demonstrating understanding of the subject under investigation.

Learning Targets

Unit Essential Questions:

- How do scientists use the scientific method to solve problems?
- How do scientists use observations and information to make decisions?
- Why is it important to learn from mistakes when solving problems?
- What skills do scientists need to be successful at their jobs?
- Why are safety rules and procedures important in the workplace?
- How do scientists and other professionals protect themselves and others while working?
- How can identifying hazards and following safety procedures prevent accidents?
- What types of jobs are in the field of science?

Unit Enduring Understandings:

- The scientific method follows the process of asking questions, making predictions, conducting an experiment, collecting data, and making conclusions in order to solve problems.
- Observations help scientists understand how things work. The information collected from the observations can then be used to solve problems.
- Mistakes help us understand what works, what does not work, and how to improve ideas.
- Successful scientists have skills in observation, problem solving, critical thinking, measuring, organization, collaboration, and much more.
- Safety rules and procedures protect workers and create a safe workplace.
- Following safety rules, using proper equipment, and making responsible choices keeps scientists and professionals safe at work.
- Identifying hazards and following safety procedures prevents accidents by reducing risk before accidents occur.

	• Careers in science include placement in biology, environmental science, chemistry, engineering, medicine and healthcare, and many more.

Vocabulary: scientific method, question, observation, hypothesis, experiment, variable, data, evidence, analyze, conclusion, safety, rule, procedure, hazard, PPE, emergency, first aid, career

Students will be able to:

- Describe the steps of the scientific method
- Utilize the scientific method to investigate a question and solve a problem
- Explain the concept that making mistakes and revising plans are part of the scientific process
- Identify skills scientists use in the workplace
- Demonstrate teamwork while completing scientific activities
- Explain common safety rules and procedures in science class and the workplace
- Describe common workplace hazards
- Properly use PPE
- Use tools safely
- Identify various science related careers, and describe what people do in those careers
- Explain how science skills can be applied to many different jobs and careers

Learning Activities & Differentiation:

- Scientific method sequencing
- Mystery box - use scientific method
- Design challenge (with revisions)
- Scientific experiment scenarios
- Science skills picture matching
- Safety stations
- Workplace picture - hazard investigation

- Career interest inventory

Assessment Evidence
Formative Assessments: open ended questions based on essential questions, stop-and-jot, exit slips, one-sentence summary, quick write, polls, writing checkpoints, experiments/labs, relevant community based instruction, self assessments
Summative Assessments: create a workplace safety brochure, science career research project
Common Benchmark Assessments: unit assessment, cooperative and independent learning experiences, class discussion and participation
Alternative Assessments: multimedia presentations and projects

Core Instructional & Supplemental Materials

Texts, Readings, Online Platforms & Other Resources:

- Teacher Created Materials (google slides and docs)
- Laboratory activities and equipment
- Google Apps for Education
- Chromebooks
- EdPuzzle
- Kahoot
- Gimkit
- Blooket
- Youtube
- Quizlet

Science Websites:

- https://phet.colorado.edu/

- https://thewonderofscience.com/
- https://www.openscied.org/why-openscied/about-us/

Accommodations and Modifications: Students with Disabilities, English Language Learners, Students at Risk of Failure, Students with 504s, Gifted & Talented Students

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Specific Strategies and Practices that Support English Language Learners

English language learner (ELL) is a national-origin-minority student who is limited-English-proficient. This term is often preferred over limited-English-proficient (LEP) as it highlights accomplishments rather than deficits.

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Students at Risk of Failure

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Unit 5

Desired Results

Unit 5 Title: Technology - Past. Present, and Future

Unit Summary: In this unit students will learn how science and technology work together to solve real-world problems. Through hands-on activities, investigations, engineering challenges, and simple research, students will explore how technology has changed over time. Students will also learn about how technology has helped and created challenges for society as a whole.

Learning Standards

- **MS-ETS1-1 –** Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution while considering relevant scientific principles and the needs of people and society.
- **MS-ETS1-2 –** Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
- **MS-ETS1-3 –** Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each.

Science & Engineering Practices (SEPs):

• Asking Questions and Defining Problems
• Developing and Using Models
• Planning and Carrying Out Investigations
• Analyzing and Interpreting Data
• Designing Solutions Through Engineering

Crosscutting Concepts (CCCs):
• Influence of Science, Engineering, and Technology on Society and the Natural World

Interdisciplinary Connections

Career Readiness, Life Literacies, & Key Skills *(CLKS)*:

• **9.4.8.CI.1 –** Assess the credibility and accuracy of information from a variety of sources.
• **9.4.8.CT.2 –** Develop multiple solutions to a problem and evaluate the strengths and limitations of each design.
• **9.4.8.IML.5** – Analyze digital tools and resources to determine their effectiveness for communicating scientific information.
• **9.4.8.TL.3** – Select and use appropriate digital tools to collect, analyze, and communicate information.
• **9.4.8.GCA.1 –** Examine how scientific and technological innovations contribute to career opportunities and address real-world challenges.

Computer Science & Design Thinking *(CS & DT)*:

• **8.1.8.CS.1** – Explain how computing technology is used to collect, organize, and analyze scientific data.
• **8.1.8.DA.2** – Use digital technologies to identify patterns and draw conclusions from scientific investigations.
• **8.2.8.ED.1** – Apply the engineering design process to develop, test, and improve solutions to real-world scientific problems.
• **8.2.8.ITH.2** – Evaluate how technology has influenced scientific discoveries and improved quality of life.
• **8.2.8.ETW.1** – Explore careers that use science, technology, engineering, and computer science to solve problems and improve communities.

Interdisciplinary Connections:

- **8.1.8.DA.1** – Collect, organize, and analyze data using digital tools to identify patterns and support decision-making.
- **8.2.8.ITH.1** – Evaluate the impact of technology on individuals, society, and the environment.
- **8.2.8.ETW.2** – Analyze how advances in technology have influenced careers, communication, and everyday life.

Learning Targets

Unit Essential Questions:

- How has technology changed over time?
- How does technology help people solve everyday problems?
- What are the benefits and challenges of new technologies?
- How do scientists and engineers use technology to make discoveries and improve lives?
- How might technology continue to change in the future?
- How can technology be used responsibly to improve our communities and protect the environment?

Unit Enduring Understandings:

- Technology has changed over time to meet the needs and wants of people and society.
- Scientific discoveries and technological innovations work together to improve everyday life.
- Engineers use the design process to create, test, and improve technologies that solve real-world problems.
- Technology has both positive and negative impacts on people, communities, and the environment.
- Responsible use of technology requires critical thinking, ethical decision-making, and digital citizenship.
- Innovations in technology continue to shape the future by creating new opportunities, careers, and solutions to global challenges.

Vocabulary: technology, innovation, invention, engineer, scientist, design process, tool, machine, device, digital technology, artificial intelligence (AI), robotics, automation, communication, transportation, energy, efficiency, sustainability, innovation, problem solving, data, computer, internet, renewable energy, virtual reality, cybersecurity, GPS, satellite, 3D printing, impact, society, environment, collaboration, improvement, adaptation, advancement

Students will be able to:

• Identify examples of technology from the past, present, and future
• Explain how technology has changed over time to meet human needs and solve problems.
• Compare and contrast historical and modern technologies.
• Describe how scientists and engineers work together to develop new technologies.
• Explain how the engineering design process is used .
• Evaluate the positive and negative impacts of technology .
• Use scientific vocabulary to communicate ideas about technology and innovation.
• Collect, organize, and interpret information from a variety of print and digital sources.
• Collaborate with peers to design, build, and evaluate solutions to real-world problems.
• Demonstrate responsible and safe use of technology and digital tools.
• Make connections between current technologies and how future innovations may improve the world.

Learning Activities & Differentiation:

• KWL chart on technology.
• Read adapted informational texts.
• Compare historical and modern technologies using graphic organizers, Venn diagrams, timelines, and sorting activities.
• Investigate how technology has changed through hands-on activities and multimedia resources.
• Complete STEM and engineering design challenges
• Then and Now Technology Matching
• School and community technology scavenger hunt
• Inventors research project

Assessment Evidence
Formative Assessments: open ended questions based on essential questions, stop-and-jot, exit slips, one-sentence summary, quick write, polls, writing checkpoints, experiments/labs, relevant community based instruction, self assessments
Summative Assessments: Technology timeline project, STEM engineering design project, inventor project
Common Benchmark Assessments: unit assessment, cooperative and independent learning experiences, class discussion and participation
Alternative Assessments: multimedia presentations and projects

Core Instructional & Supplemental Materials

Texts, Readings, Online Platforms & Other Resources:

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Students at Risk of Failure

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Students with 504 Plans

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Unit 6

Desired Results

Unit 6 Title: Health, Wellness, and the Human Body

Unit Summary:

This unit introduces students to the human body and the importance of maintaining a healthy lifestyle through proper nutrition, physical activity, personal hygiene, sleep, and positive health habits. Students will explore the major body systems and discover how they work together to keep the body functioning properly. Through hands-on investigations, models, informational texts, interactive activities, and STEM-based learning experiences, students will examine how daily choices affect overall health and wellness. Students will also investigate how science, medicine, and technology have improved healthcare and disease prevention. The unit emphasizes making informed decisions that promote lifelong health, personal responsibility, and overall well-being.

Learning Standards

NJSLS:

• **MS-LS1-2 –** Develop and use a model to describe the function of a cell as a whole and the ways parts of cells contribute to the function.

• **MS-LS1-3 –** Use an argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.

• **MS-LS1-5 –** Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth and development of organisms.
Interdisciplinary Connections
Career Readiness, Life Literacies, & Key Skills *(CLKS)*: • **9.4.8.HL.1** – Assess personal health practices and identify behaviors that promote lifelong health and wellness. • **9.4.8.HL.2** – Explain how lifestyle choices influence physical, mental, emotional, and social well-being. • **9.4.8.IML.1** – Evaluate information from digital and print sources for accuracy, credibility, and relevance when making health-related decisions. • **9.4.8.DC.1** – Demonstrate safe, ethical, and responsible use of digital technologies when researching and communicating health information. • **9.4.8.CI.1** – Use critical-thinking and problem-solving skills to analyze health issues and develop appropriate solutions.
Computer Science & Design Thinking *(**CS & DT****)*:** • **8.1.8.CS.1 –** Develop and apply computational thinking to solve problems using appropriate technology. • **8.1.8.DA.1** – Collect, organize, and analyze health-related data using digital tools to identify patterns and support decision-making. • **8.1.8.DA.2** – Use data to communicate findings and make evidence-based decisions related to health and wellness. • **8.2.8.ED.2** – Apply the engineering design process to develop, test, evaluate, and improve solutions that promote health, safety, and well-being. • **8.2.8.ITH.1** – Evaluate how technology has improved healthcare, medical treatments, and quality of life.
Interdisciplinary Connections: • **RI.6.1** – Cite textual evidence to support analysis of informational texts. • **RI.6.7** – Integrate information presented in different media or formats to develop a coherent understanding of a topic. • **W.6.2** – Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information

Learning Targets

Unit Essential Questions:	**Unit Enduring Understandings:**
• How do the major human body systems work together to keep the body healthy? • What important steps can be taken to maintain a healthy lifestyle? • How do healthy choices influence growth, development, and overall wellness? • How do diseases spread and what strategies can be used to prevent illness? • How do advances in science, medicine, and technology improve healthcare and quality of life? • How can we use scientific knowledge to make informed decisions that promote lifelong health and well-being?	• The human body is made up of interconnected systems that work together to maintain health and perform essential life functions. • Healthy lifestyle choices, including proper nutrition, regular physical activity, adequate sleep, and good hygiene, contribute to overall health and wellness. • Personal choices and environmental factors can positively or negatively affect physical, mental, and emotional well-being. • Scientific discoveries, medical advancements, and technology continue to improve healthcare, disease prevention, and quality of life. • Scientists, healthcare professionals, and biomedical engineers use science, technology, and innovation to solve health-related problems and improve the lives of others. • Understanding how the body functions helps individuals make informed decisions that support lifelong health and safety.

Vocabulary: health, wellness, nutrition, nutrients, balanced diet, exercise, physical activity, hygiene, disease, germs, bacteria, virus, infection, prevention, immune system, body systems, cells, tissues, organs, organ system, skeletal system, muscular system, circulatory system, respiratory system, digestive system, nervous system, brain, heart, lungs, bones, muscles, blood, oxygen, energy, hydration, lifestyle, mental health, healthcare

Students will be able to:

• Identify the major human body systems and describe their basic functions.

• Explain how body systems work together to maintain health and carry out essential life functions.

• Describe the importance of proper nutrition, regular exercise, adequate sleep, and personal hygiene in maintaining a healthy lifestyle.

• Explain how healthy and unhealthy choices affect the human body and overall well-being.

• Identify common diseases and explain strategies for preventing illness and promoting good health.

• Investigate how advances in science, medicine, and technology have improved healthcare and disease prevention.

Learning Activities & Differentiation:

• KWL chart on health, wellness, and the human body.

• Read adapted informational texts

• Investigate the major human body systems using models, diagrams, interactive activities, and hands-on learning experiences.

• Conduct simple investigations related to nutrition, exercise, heart rate, breathing, hygiene, and healthy habits.

• Lifestyle choices case study

• Organ/function matching

• Healthy choices sort

• Build a healthy plate

• How germs spread investigation

Assessment Evidence

Formative Assessments: open ended questions based on essential questions, stop-and-jot, exit slips, one-sentence summary, quick write, polls, writing checkpoints, experiments/labs, relevant community based instruction, self assessments

Summative Assessments: human body systems project demonstrating the structure and function of one or more major body systems, research project on a disease or medical technology
Common Benchmark Assessments: unit assessment, cooperative and independent learning experiences, class discussion and participation
Alternative Assessments: multimedia presentations and projects

Core Instructional & Supplemental Materials

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Students at Risk of Failure

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Unit 7

Desired Results

Unit 7 Title: The Environment and Sustainability

Unit Summary:

This unit introduces students to the relationship between humans and the environment while exploring the importance of conservation, sustainability, and responsible use of Earth's natural resources. Students will investigate ecosystems, renewable and nonrenewable resources, pollution, recycling, climate, and environmental responsibility through hands-on investigations, informational texts, and real-world problem-solving. Students will examine how human actions impact the environment and explore scientific and engineering solutions that promote sustainability and protect natural resources for future generations.

Learning Standards

NJSLS:

• **MS-LS2-1** – Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

• **MS-LS2-3** – Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.

• **MS-ESS3-3** – Apply scientific principles to design a method for monitoring and minimizing human impacts on the environment.

• **MS-ETS1-1** – Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution.
Interdisciplinary Connections
Career Readiness, Life Literacies, & Key Skills *(CLKS)*: • **9.4.8.CI.1** – Use appropriate research, critical thinking, and problem-solving skills to investigate environmental issues and propose sustainable solutions. • **9.4.8.IML.1** – Evaluate information from digital and print sources for accuracy, credibility, and relevance when researching environmental topics. • **9.4.8.GCA.2** – Explore careers in environmental science, conservation, renewable energy, engineering, agriculture, and other sustainability-focused STEM fields.
Computer Science & Design Thinking *(**CS & DT****)*:** • **9.4.8.GCA.1** – Model how personal values, attitudes, and beliefs influence decision-making and career exploration in environmental and STEM fields. • **9.4.8.IML.1** – Evaluate information from digital and print sources for accuracy, credibility, and relevance when researching environmental topics. • **9.4.8.DC.1** – Demonstrate safe, ethical, and responsible use of digital technologies when researching and communicating environmental information. • **9.4.8.TL.3** – Recognize how technology and innovation contribute to environmental conservation, sustainability, and responsible resource management.
Interdisciplinary Connections: • **RI.6.1** – Cite textual evidence to support analysis of informational texts related to environmental science and sustainability. • **RI.6.7** – Integrate information presented in different media and formats to develop an understanding of environmental issues. • **W.6.2** – Write informative/explanatory texts to examine environmental topics and communicate scientific ideas clearly.

• **SL.6.1** – Engage effectively in collaborative discussions about environmental challenges and sustainable solutions.
• **RST.6-8.1** – Cite specific textual evidence to support analysis of science and technical texts.
• **RST.6-8.7** – Integrate quantitative or technical information expressed visually (e.g., charts, graphs, diagrams, and maps) with information presented in words to deepen understanding of environmental science concepts

Learning Targets

Unit Essential Questions:	**Unit Essential Understandings:**
• Why is it important to protect and conserve Earth's natural resources? • How do human activities affect the environment and ecosystems? • What is sustainability, and why is it important for future generations? • How can individuals and communities reduce pollution and protect the environment? • How do science, technology, and engineering help solve environmental problems? • What actions can people take to become responsible citizens of the Earth?	• Earth's natural resources are limited and must be used responsibly to support future generations. • Healthy ecosystems depend on the balance and interaction of living and nonliving components. • Human activities can have both positive and negative impacts on the environment and biodiversity. • Conservation, recycling, reducing waste, and protecting natural resources help create a more sustainable future. • Science, technology, and engineering provide innovative solutions to environmental challenges and promote sustainability. • Every individual has a responsibility to make informed decisions and take actions that help protect the environment and preserve Earth's resources for future generations.

Vocabulary: environment, ecosystem, habitat, population, community, organism, biodiversity, natural resources,

renewable resources, nonrenewable resources, conservation, sustainability, pollution, recycling, reduce, reuse, compost, waste, climate, climate change, weather, energy, solar energy, wind energy, fossil fuels, carbon footprint, deforestation, erosion, water cycle, food chain, renewable energy, conservationist, habitat restoration
Students will be able to: • Identify the living and nonliving components of ecosystems and explain how they interact. • Describe the importance of natural resources and distinguish between renewable and nonrenewable resources. • Explain how human activities affect the environment, ecosystems, and biodiversity. • Investigate the causes and effects of pollution on air, water, land, and living organisms. • Describe how conservation, recycling, reducing waste, and reusing materials help protect Earth's resources. • Explain the importance of sustainability and identify ways individuals can reduce their environmental impact.
Learning Activities & Differentiation: • KWL chart - ecosystems, conservation, and sustainability. • Read adapted informational texts • Investigate ecosystems, food chains, food webs, pollution, natural resources, and conservation through hands-on investigations and STEM activities. • Conduct environmental investigations related to recycling, renewable resources, water conservation, habitats, biodiversity, and human impact on the environment. • Environmental issues case studies • Use digital tools, educational technology, interactive simulations, and virtual field experiences to explore environmental science concepts. • Complete STEM engineering design challenges focused on solving real-world environmental and sustainability problems. •Build a habitat diorama •Pollution models •School grounds campus cleanup

•Renewable/nonrenewable resource sort
•Waste vs. recycling graphic organizer

Assessment Evidence

Formative Assessments: open ended questions based on essential questions, stop-and-jot, exit slips, one-sentence summary, quick write, polls, writing checkpoints, experiments/labs, relevant community based instruction, self assessments

Summative Assessments: Environmental sustainability project (poster, model, or digital presentation), recycling and waste reduction action plan, ecosystem or habitat research project, environmental problem-solving, climate change or conservation presentation,

Common Benchmark Assessments: unit assessment, cooperative and independent learning experiences, class discussion and participation

Alternative Assessments: multimedia presentations and projects

Core Instructional & Supplemental Materials

Texts, Readings, Online Platforms & Other Resources:

- Teacher Created Materials (google slides and docs)
- Laboratory activities and equipment
- Google Apps for Education
- Chromebooks
- EdPuzzle
- Kahoot
- Gimkit
- Blooket
- Youtube
- Quizlet

Science Websites:

- https://phet.colorado.edu/
- https://thewonderofscience.com/
- https://www.openscied.org/why-openscied/about-us/

Accommodations and Modifications: Students with Disabilities, English Language Learners, Students at Risk of Failure, Students with 504s, Gifted & Talented Students

Specific Strategies and Practices that Support Students with Disabilities:

Students receiving Special Education programming have specific goals and objectives, as well as accommodations and modifications outlined within their Individualized Education Plans (IEP) due to an identified disability and/or diagnosis. In addition to exposure to the general education curriculum, the instruction is differentiated based upon the student's needs. The IEP acts as a supplemental curriculum guide inclusive of instructional strategies that support each learner.

- Small group/One to one - Additional time - Review of directions - Student restates information - Space for movement or breaks - Extra visual and verbal cues and prompts - Preferential seating - Follow a routine/schedule - Rest breaks - Verbal and visual cues regarding directions and staying on task - Checklists - Immediate feedback

Specific Strategies and Practices that Support English Language Learners

English language learner (ELL) is a national-origin-minority student who is limited-English-proficient. This term is often preferred over limited-English-proficient (LEP) as it highlights accomplishments rather than deficits.

- Pre-teaching of vocabulary and concepts - Personal Glossary - Extended Time - Simplified/Verbal Instructions - Frequent Breaks - Visual learning, including graphic organizers - Use of cognates to increase comprehension - Teacher modeling - Pairing students with beginning English language skills with students who have more advanced English language skills - Scaffolding - Word walls - Think-pair-share - Cooperative learning groups

Students at Risk of Failure

- Home/School Connection - Alternative Assessments - Learning Contracts - Homogenous Grouping - Supplemental Instruction - Think-Pair-Share by Readiness - Homework Options - Differentiated Online Practice - Leveled Rubrics - Tiered Level of Supports - Tiered Activities - Small Group Instruction - Work Alone Choice - Group Work Choice

Students with 504 Plans
Teachers are responsible for implementing designated services and strategies identified on a student's 504 Plan.
504 plans are formal plans that schools develop to give kids the support they need and covers any condition that limits daily activities in a major way. Students' accommodations are outlined in their individual 504 plan.

Specific Strategies and Practices that Support Gifted & Talented Students
It is critical that all teachers are able to recognize a high-ability student who may need more depth and complexity in instruction.
-Homogenous Grouping - Small Group In-Depth Instruction - Differentiated Online Practice - Alternative Assessments - Pre-Assess to provide Differentiated Instruction to Accelerate Learning

Unit 8

Desired Results

Unit 8 Title: Media Literacy

Unit Summary: In this unit, students develop the skills needed to become responsible consumers and creators of digital and print media. Students learn how to identify reliable and unreliable sources, recognize misinformation, and practice safe, ethical, and responsible online behavior. Through engaging, real-world activities, students strengthen communication, and digital citizenship skills while exploring how media influences opinions, decisions, and everyday life. The unit emphasizes safe technology use, respectful online interactions, and informed decision-making to prepare students for school, work, and daily life.

Learning Standards

NJSLS:

- **9.4.8.IML.1** – Critically evaluate information from digital sources for accuracy, perspective, credibility, and relevance.
- **9.4.8.DC.1** – Demonstrate safe, legal, and ethical behavior when using digital tools and technology.
- **9.4.8.TL.3** – Analyze how technology influences communication, collaboration, and the sharing of information.

Interdisciplinary Connections
Career Readiness, Life Literacies, & Key Skills *(CLKS)*: • **9.4.8.IML.2 –** Identify bias, misinformation, and persuasive techniques in media messages. • **9.4.8.DC.4 –** Practice responsible digital citizenship and respectful online communication. • **9.4.8.CI.1** – Use critical-thinking skills to analyze information, solve problems, and make informed decisions.
Computer Science & Design Thinking *(**CS & DT****)*:** • **8.1.8.CS.1** – Explain how computing technologies have impacted the way individuals live, work, and communicate. • **8.1.8.DA.1** – Organize, analyze, and interpret data from multiple digital sources to support conclusions. • **8.1.8.DA.2** – Evaluate the accuracy, reliability, and credibility of digital information and data. • **8.1.8.NI.1** – Explain how information is transmitted across networks and the importance of secure communication. • **8.2.8.ED.2** – Apply the engineering design process to develop and improve solutions that address real-world problems using technology
Interdisciplinary Connections: • **W.6-8.8 –** Gather relevant information from multiple print and digital sources and evaluate the credibility of each source. • **RI.6-8.7** – Integrate information presented in different media and formats to develop a coherent understanding of a topic. • **6.1.8.CivicsHR.3.a** – Evaluate how access to reliable information supports civic responsibility and informed citizenship • **2.3.8.HCDM.2** – Evaluate how media, technology, and other factors influence health decisions and behaviors.

Learning Targets

Unit Essential Questions:

- How can I tell if a source of information is accurate and trustworthy?
- How does the media influence the way people think about science and everyday life?
- Why is it important to identify facts, opinions, bias, and misinformation?
- How can I use critical thinking skills to evaluate information from different sources?
- What are the responsibilities of being a safe and responsible digital citizen?
- How can I use reliable scientific evidence to make informed decisions?

Unit Enduring Understandings:

- Reliable sources of information are essential for making informed scientific decisions.
- Media messages can influence how people think about science, health, and the environment.
- Critical thinking helps people identify facts, opinions, bias, and misinformation.
- Scientific claims should be supported by credible evidence and trustworthy sources.
- Responsible digital citizenship includes using technology safely, ethically, and respectfully.
- Evaluating information from multiple sources leads to better understanding and problem-solving.

Vocabulary: media literacy, digital citizenship, media, information, source, credible source, evidence, fact, opinion, misinformation, fake news, claim, advertisement, persuasion, audience, purpose, author, point of view, accuracy, credibility, reliability, primary source, secondary source, digital footprint, online safety, cyberbullying, privacy, plagiarism, communication, technology, social media

Students will be able to:

- Identify reliable and unreliable sources of information.
- Distinguish between facts, opinions, and misinformation.
- Evaluate the credibility and accuracy of digital and print media.
- Explain how the media influences opinions and decisions.

• Use scientific evidence to support claims and make informed decisions.
• Demonstrate safe, responsible, and ethical digital citizenship practices.
• Analyze media messages to determine their purpose and intended audience.

Learning Activities & Differentiation:
• Analyze science news articles, websites, advertisements, videos, and social media posts to identify facts, opinions, bias, and misinformation.
• Compare reliable and unreliable scientific sources using teacher-created graphic organizers and checklists.
• Complete digital citizenship scientific case studies
• Create posters, digital presentations, or public service announcements using credible scientific information.
• Participate in station rotations focused on source evaluation, media bias, online safety, and scientific communication.
• Engage in role-playing activities to practice responsible digital communication and decision-making.
• Integrate multicultural perspectives and diverse voices by examining media from different cultures and discussing representation, accessibility, disabilities, environmental issues, and global scientific topics.

Assessment Evidence

Formative Assessments: open ended questions based on essential questions, stop-and-jot, exit slips, one-sentence summary, quick write, polls, writing checkpoints, experiments/labs, relevant community based instruction, self assessments

Summative Assessments: media literacy research project using multiple credible sources, fact vs. opinion assessment, media bias analysis, public service announcement (PSA), digital poster creation, written reflection

Common Benchmark Assessments: unit assessment, cooperative and independent learning experiences, class discussion and participation

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