

East Newark Public School

Science Curriculum

Grade 2



Course Description

Based on the Next Generation Science Standards and the New Jersey Student Learning Standards, the East Newark Public School second grade science program is designed to introduce and develop a foundation in science through four major units of study. These units are Matter and Its Interactions, Ecosystems: Interactions, Energy, and Dynamics, Biological Evolution, Earth's Place in the Universe, and Earth's Systems. Lessons are taught with concrete, hands-on activities that allow science experiences to leave lasting impressions. The performance expectations in second grade help students formulate answers to questions such as: "How does land change and what are some things that cause it to change? What are different kinds of land and bodies of water? How are materials similar and different from one another, and how do the properties of the materials relate to their use? What do plants need to grow? How many types of living things live in a place?"

Course Resources

1. Science Fusion Teacher Edition
2. Science Fusion Student Edition
3. Inquiry Flipchart
4. www.thinkcentral.com
5. Digital Lessons
6. Virtual Lab
7. SMARTboard
8. Next Generation Science Standards
9. NJSLS - <https://www.state.nj.us/education/cccs/2016/science/>
10. New Jersey Center for Teaching and Learning - <https://njctl.org/courses/science/2nd-grade-science/>

Pacing Guide

Unit	Unit Title	Topics Covered	Standards	Resources
1	Ecosystems: Interactions, Energy, and Dynamics	<ul style="list-style-type: none">• Plant Needs• Plant Growth• Plant Parts• Plant Life Cycle	2-LS2-1 2-LS2-2	Science Fusion
2	Biological Evolution	<ul style="list-style-type: none">• Plants and Animals• Adaptations of Living Things• Plant Survival• Environmental Change	2-LS4-1	Science Fusion
3	Earth's Place in the Universe and Earth Systems	<ul style="list-style-type: none">• Changes to Earth• Natural Resources• Weather• Sun and Earth• Weather Patterns• Precipitation• Seasons• Severe Weather	2-ESS1-1 2-ESS2-1 2-ESS2-2 2-ESS2-3 K-2-ETS1-1	Science Fusion
4	Matter and Its Interactions		2-PS1-1 2-PS1-2 2-PS1-3 2-PS1-4	

Unit 1: Ecosystems: Interactions, Energy, and Dynamics

Timeframe	Marking Period 1
Overview	In this unit of study, students develop an understanding of what plants need to grow and how plants depend on animals for seed dispersal and pollination. Students also compare the diversity of life in different habitats. The crosscutting concepts of cause and effect and structure and function are called out as organizing concepts for these disciplinary core ideas. Students demonstrate grade-appropriate proficiency in planning and carrying out investigations and developing and using models. Students are also expected to use these practices to demonstrate an understanding of the core ideas.
Resources	<ul style="list-style-type: none"> ● Science Fusion Teacher Edition <ul style="list-style-type: none"> ○ Unit 4: Lessons 1-5 ● Science Fusion Student Edition <ul style="list-style-type: none"> ○ Unit 4: Lessons 1-5 ● Inquiry Flipchart ● www.thinkcentral.com ● Digital Lessons ● Virtual Lab ● SMARTboard
Essential Questions	<ol style="list-style-type: none"> 1. What are plant needs? 2. What do plants need to grow? 3. What are some plant parts? 4. What are some plant life cycles? 5. How does a bean plant grow?
Essential Learning Outcomes	<ol style="list-style-type: none"> 1. Identify sunlight, air, water, nutrients, and space as the basic needs of plants. 2. Explain that a living thing must meet its basic needs in order to survive and draw conclusions about what might happen to a plant if its basic needs are not met. 3. Predict and investigate the growth of plants when growing conditions are altered. 4. Communicate observations and data gathered during an investigation. 5. Identify, observe, record, and compare the main parts of plants and describe their physical characteristics. 6. Recognize that all plants have life cycles. 7. Explain that many plants begin life as a seed. 8. Compare the rates at which different plants grow and mature. 9. Distinguish between plants that make seeds in flowers and plants that make seeds in cones. 10. Observe and describe the life cycle of a bean plant.
Technology Infusion	<ul style="list-style-type: none"> ● 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.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures ● 8.1.5.A.3 Use a graphic organizer to organize information about a problem or issue ● 8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data
Standards	<ul style="list-style-type: none"> ● 2-LS2-1: Plan and conduct an investigation to determine if plants need sunlight and water to grow.

	<ul style="list-style-type: none"> ● 2-LS2-2: Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.
<p>Integrated Accommodations and Modifications</p>	<ul style="list-style-type: none"> ● Special Education Students <ul style="list-style-type: none"> ● Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling). ● Extended time for revisions or opportunity to identify and develop areas of personal interest ● Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community. ● English Language Learners <ul style="list-style-type: none"> ● Invite students to explore different points of view on a topic of study and compare ● Integrated and small-group support ● Provide visuals of vocabulary/language ● Provide students with multiple literacy strategies ● Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences) ● 504 Students <ul style="list-style-type: none"> ● Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling). ● Extended time for revisions or opportunity to identify and develop areas of personal interest ● Encourage creative expression and thinking by allowing students to choose how to approach a problem or assignment ● Gifted & Talented Students <ul style="list-style-type: none"> ● Encourage students to explore concepts in depth and encourage independent studies or investigations ● Modeling or independent student led research
<p>Assessments</p>	<ul style="list-style-type: none"> ● Sum it up/Brain Check (Student Edition-end of each lesson) ● Unit Review ● Unit Quizzes ● Unit Test ● Performance Assessment (Short or Long Option) ● Online Assessment
<p>Integration of 21st Century Learning</p>	<ul style="list-style-type: none"> ● 9.2.4.A.1 Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals. ● 9.2.4.A.2 Identify various life roles and civic and work-related activities in the school, home, and community. ● 9.2.4.A.3 Investigate both traditional and nontraditional careers and relate information to personal likes and dislikes. ● 9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success. ● CRP1. Act as a responsible and contributing citizen and employee.

	<ul style="list-style-type: none"> ● CRP2. Apply appropriate academic and technical skills. ● CRP4. Communicate clearly and effectively and with reason. ● CRP5. Consider the environmental, social and economic impacts of decisions. ● CRP6. Demonstrate creativity and innovation. ● CRP7: Employ valid and reliable research strategies. ● CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. ● CRP9. Model integrity, ethical leadership and effective management. ● CRP10. Plan education and career paths aligned to personal goals. ● CRP11: Use technology to enhance productivity.
<p>Career Education</p>	<p>The 12 Career Ready Practices: These practices outline the skills that all individuals need to have to truly be adaptable, reflective, and proactive in life and careers. These are researched practices that are essential to career readiness. This unit addresses standard 9.2 (Career Awareness, Exploration, and Preparation) as it outlines the importance of being knowledgeable about one's interests and talents, and being well informed about postsecondary and career options, career planning, and career requirements.</p>
<p>Interdisciplinary Connections</p>	<ul style="list-style-type: none"> ● The science curriculum includes unifying themes such as systems, changes, and models. These themes combine with connected skills such as using measurement and representations. These themes and skills, along with the shared processes of observing and predicting, provide teachers with a myriad of opportunities for making meaningful cross-curricular connections. ● For example, investigations of local issues can engage students in thinking about science and social science concepts and help develop their understanding of probability and data analysis, which are part of the mathematics standards. Learning, understanding, and using scientific vocabulary allows students to connect their ideas to content specific words and phrases. Students must understand appropriate levels of scientific terminology to be able to achieve the lesson objectives. In addition, teachers may use journals, writing prompts, lab reports, and outlines to provide students with opportunities to write in the science classroom.

Unit 2: Biological Evolution

Timeframe	Marking Period 2
Overview	Students will explore scientific theories of evolution and investigate how living things meet their needs in their environments. Evolution also pertains to the environment in which living things can be found. During this unit students will discover how living things and their environment adapt over time.
Resources	<ul style="list-style-type: none"> ● Science Fusion Teacher Edition <ul style="list-style-type: none"> ○ Unit 5, Lessons 1-4 ● Science Fusion Student Edition <ul style="list-style-type: none"> ○ Unit 5, Lessons 1-4 ● Inquiry Flipchart ● www.thinkcentral.com ● Digital Lessons ● Virtual Lab ● SMARTboard
Essential Questions	<ol style="list-style-type: none"> 1. How do plants and animals need one another? 2. How are living things adapted to their environment? 3. Can plants survive in different environments? 4. How do environments change over time?
Essential Learning Outcomes	<ol style="list-style-type: none"> 1. Understand how living organisms are interdependent with their living and nonliving surroundings. 2. Compare ways living organisms depend on each other in food chains. 3. Describe how adaptations help living things survive in their environments. 4. Demonstrate that plants live where their needs are met. 5. Recognize that repeating an investigation should result in similar conclusions. 6. Describe how environments change over time due to many influences. 7. Explain how natural events and living things change environments.
Technology Infusion	<ul style="list-style-type: none"> ● 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.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures ● 8.1.5.A.3 Use a graphic organizer to organize information about problem or issue ● 8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data
Standards	<ul style="list-style-type: none"> ● 2-LS4-1: Make observations of plants and animals to compare the diversity of life in different habitats.
Integrated Accommodations and Modifications	<ul style="list-style-type: none"> ● Special Education Students <ul style="list-style-type: none"> ● Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling). ● Extended time for revisions or opportunity to identify and develop areas of personal interest ● Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community.

	<ul style="list-style-type: none"> ● English Language Learners <ul style="list-style-type: none"> ● Invite students to explore different points of view on a topic of study and compare ● Integrated and small-group support ● Provide visuals of vocabulary/language ● Provide students with multiple literacy strategies ● Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences) ● 504 Students <ul style="list-style-type: none"> ● Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling). ● Extended time for revisions or opportunity to identify and develop areas of personal interest ● Encourage creative expression and thinking by allowing students to choose how to approach a problem or assignment ● Gifted & Talented Students <ul style="list-style-type: none"> ● Encourage students to explore concepts in depth and encourage independent studies or investigations ● Modeling or independent student led research
<p style="text-align: center;">Assessments</p>	<ul style="list-style-type: none"> ● Sum it up/Brain Check (Student Edition-end of each lesson) ● Unit Review ● Unit Quizzes ● Unit Test ● Performance Assessment (Short or Long Option) ● Online Assessment
<p style="text-align: center;">Integration of 21st Century Learning</p>	<ul style="list-style-type: none"> ● 9.2.4.A.1 Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals. ● 9.2.4.A.2 Identify various life roles and civic and work-related activities in the school, home, and community. ● 9.2.4.A.3 Investigate both traditional and nontraditional careers and relate information to personal likes and dislikes. ● 9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success. ● CRP1. Act as a responsible and contributing citizen and employee. ● CRP2. Apply appropriate academic and technical skills. ● CRP4. Communicate clearly and effectively and with reason. ● CRP5. Consider the environmental, social and economic impacts of decisions. ● CRP6. Demonstrate creativity and innovation. ● CRP7: Employ valid and reliable research strategies. ● CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. ● CRP9. Model integrity, ethical leadership and effective management.

	<ul style="list-style-type: none"> ● CRP10. Plan education and career paths aligned to personal goals. ● CRP11: Use technology to enhance productivity.
<p>Career Education</p>	<p>The 12 Career Ready Practices: These practices outline the skills that all individuals need to have to truly be adaptable, reflective, and proactive in life and careers. These are researched practices that are essential to career readiness. This unit addresses standard 9.2 (Career Awareness, Exploration, and Preparation) as it outlines the importance of being knowledgeable about one's interests and talents, and being well informed about postsecondary and career options, career planning, and career requirements.</p>
<p>Interdisciplinary Connections</p>	<ul style="list-style-type: none"> ● The science curriculum includes unifying themes such as systems, changes, and models. These themes combine with connected skills such as using measurement and representations. These themes and skills, along with the shared processes of observing and predicting, provide teachers with a myriad of opportunities for making meaningful cross-curricular connections. ● For example, investigations of local issues can engage students in thinking about science and social science concepts and help develop their understanding of probability and data analysis, which are part of the mathematics standards. Learning, understanding, and using scientific vocabulary allows students to connect their ideas to content specific words and phrases. Students must understand appropriate levels of scientific terminology to be able to achieve the lesson objectives. In addition, teachers may use journals, writing prompts, lab reports, and outlines to provide students with opportunities to write in the science classroom.

Unit 3: Earth's Place in the Universe and Earth Systems

Timeframe	Marking Period 3
Overview	In this unit students will explore how the surface of the Earth is always changing. They will be introduced to different kinds of maps and explore how these maps convey different kinds of information about the world we live in, including where water is found on Earth. Students will investigate the different forces that shape the surface of the Earth and design solutions to limit the impact of erosion. Students will also explore how weather changes from day to day and from season to season and why it is important to measure and track weather over time. Students will investigate the relationship between various earth systems; weather, water, and geology.
Resources	<ul style="list-style-type: none"> ● Science Fusion Teacher Edition <ul style="list-style-type: none"> ○ Unit 6, Lessons 1-2 ○ Unit 7, Lessons 1-6 ● Science Fusion Student Edition <ul style="list-style-type: none"> ○ Unit 6, Lessons 1-2 ○ Unit 7, Lessons 1-6 ● Inquiry Flipchart ● www.thinkcentral.com ● Digital Lessons ● Virtual Lab ● SMARTboard
Essential Questions	<ol style="list-style-type: none"> 1. What changes Earth? 2. What are natural resources? 3. How does the weather change? 4. How does the sun heat Earth? 5. What are some weather patterns? 6. How can we measure precipitation? 7. How do seasons affect living things? 8. How can we prepare for severe weather?
Essential Learning Outcomes	<ol style="list-style-type: none"> 1. Identify ways Earth's surface changes. 2. Compare and contrast fast and slow Earth changes. 3. Describe how plants reduce erosion. 4. Describe ways people use natural resources. 5. Identify and classify important products that come from natural resources. 6. Recognize that the availability of natural resources affects the development of a geographic area. 7. Explain that air is all around us and moving air is called wind. 8. Observe, measure, describe, and graph weather observations, such as cloud coverage, cloud type, and type of precipitation. 9. Identify tools used to measure and predict the weather conditions, such as precipitation, temperature, wind speed, and direction. 10. Measure temperature using a thermometer. 11. Demonstrate how heat energy from the sun warms the water, the land, and the air. 12. Understand the uses and importance of measuring, recording, and interpreting weather data. 13. Identify common weather phenomena. 14. Make a rain gauge and use it to observe and measure precipitation. 15. Describe and compare weather patterns from season to season. 16. Understand how seasonal changes affect the growth and behavior of living things.

	<p>17. Identify the importance of weather and seasonal information to make choices in clothing, activities, and transportation.</p> <p>18. Identify kinds of severe weather events, explain how scientists help people stay safe from severe weather situations, and how people prepare for severe weather.</p>
<p>Technology Infusion</p>	<ul style="list-style-type: none"> ● 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.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures ● 8.1.5.A.3 Use a graphic organizer to organize information about a problem or issue ● 8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data
<p>Standards</p>	<ul style="list-style-type: none"> ● 2-ESS1-1: Use information from several sources to provide evidence that Earth events can occur quickly or slowly. ● 2-ESS2-1: Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. ● 2-ESS2-2: Develop a model to represent the shapes and kinds of land and bodies of water in an area. ● 2-ESS2-3: Obtain information to identify where water is found on Earth and that it can be solid or liquid. ● K-2-ETS1-1: Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
<p>Integrated Accommodations and Modifications</p>	<ul style="list-style-type: none"> ● Special Education Students <ul style="list-style-type: none"> ● Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling). ● Extended time for revisions or opportunity to identify and develop areas of personal interest ● Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community. ● English Language Learners <ul style="list-style-type: none"> ● Invite students to explore different points of view on a topic of study and compare ● Integrated and small-group support ● Provide visuals of vocabulary/language ● Provide students with multiple literacy strategies ● Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences) ● 504 Students <ul style="list-style-type: none"> ● Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling). ● Extended time for revisions or opportunity to identify and develop areas of personal interest ● Encourage creative expression and thinking by allowing students to choose how to approach a problem or assignment ● Gifted & Talented Students

	<ul style="list-style-type: none"> ● Encourage students to explore concepts in depth and encourage independent studies or investigations ● Modeling or independent student led research
<p>Assessments</p>	<ul style="list-style-type: none"> ● Sum it up/Brain Check (Student Edition-end of each lesson) ● Unit Review ● Unit Quizzes ● Unit Test ● Performance Assessment (Short or Long Option) ● Online Assessment
<p>Integration of 21st Century Learning</p>	<ul style="list-style-type: none"> ● 9.2.4.A.1 Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals. ● 9.2.4.A.2 Identify various life roles and civic and work-related activities in the school, home, and community. ● 9.2.4.A.3 Investigate both traditional and nontraditional careers and relate information to personal likes and dislikes. ● 9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success. ● CRP1. Act as a responsible and contributing citizen and employee. ● CRP2. Apply appropriate academic and technical skills. ● CRP4. Communicate clearly and effectively and with reason. ● CRP5. Consider the environmental, social and economic impacts of decisions. ● CRP6. Demonstrate creativity and innovation. ● CRP7: Employ valid and reliable research strategies. ● CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. ● CRP9. Model integrity, ethical leadership and effective management. ● CRP10. Plan education and career paths aligned to personal goals. ● CRP11: Use technology to enhance productivity.
<p>Career Education</p>	<p>The 12 Career Ready Practices: These practices outline the skills that all individuals need to have to truly be adaptable, reflective, and proactive in life and careers. These are researched practices that are essential to career readiness. This unit addresses standard 9.2 (Career Awareness, Exploration, and Preparation) as it outlines the importance of being knowledgeable about one's interests and talents, and being well informed about postsecondary and career options, career planning, and career requirements.</p>
<p>Interdisciplinary Connections</p>	<ul style="list-style-type: none"> ● The science curriculum includes unifying themes such as systems, changes, and models. These themes combine with connected skills such as using measurement and representations. These themes and skills, along with the shared processes of observing and predicting, provide teachers with a myriad of opportunities for making meaningful cross-curricular connections.

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Unit 4: Matter and Its Interactions

Timeframe	Marking Period 4
Overview	Students will understand what matter is and determine different properties of objects. Students will gain the ability to group objects according to their properties. Students will understand how parts become a whole and construct an object out of a small set of pieces. Students will also conduct experiments to change the state of liquids and solids.
Resources	<ul style="list-style-type: none"> ● New Jersey Center for Teaching and Learning <ul style="list-style-type: none"> ○ 2nd Grade: Matter: https://njctl.org/courses/science/2nd-grade-science/matter/ ● Science Fusion Teacher Edition <ul style="list-style-type: none"> ○ Unit 9, Lessons 1-4 ● Science Fusion Student Edition <ul style="list-style-type: none"> ○ Unit 9, Lessons 1-4 ● Inquiry Flipchart ● www.thinkcentral.com ● Digital Lessons ● Virtual Lab ● SMARTboard
Essential Questions	<ol style="list-style-type: none"> 1. What is matter? 2. What are the different states of matter? 3. How can we sort and classify matter? 4. How can we compare volume? 5. How does matter change? 6. How can water change states? 7. Are changes to substances reversible or permanent?
Essential Learning Outcomes	<ol style="list-style-type: none"> 1. Identify and describe properties of matter. 2. Classify matter by its properties. 3. Identify the distinguishing characteristics of solids, liquids, and gases. 4. Measure the mass and volume of solids and liquids. 5. Communicate the results of an investigation. 6. Analyze the properties of different materials such as strength, hardness, flexibility and texture. 7. Investigate how the addition or removal of heat affects water. 8. Understand some substances can experience reversible changes and some cannot. 9. Comprehend that an object built out of a small set of pieces can be deconstructed and built into a different object.
Technology Infusion	<ul style="list-style-type: none"> ● 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.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures ● 8.1.5.A.3 Use a graphic organizer to organize information about problem or issue ● 8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data
Standards	<ul style="list-style-type: none"> ● 2-PS1-1: Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties. ● 2-PS1-2: Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.

	<ul style="list-style-type: none"> ● 2-PS1-3: Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object. ● 2-PS1-4: Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot. ● K-2-ETS1-2: Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. ● K-2-ETS1-3: Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
<p style="text-align: center;">Integrated Accommodations and Modifications</p>	<ul style="list-style-type: none"> ● Special Education Students <ul style="list-style-type: none"> ● Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling). ● Extended time for revisions or opportunity to identify and develop areas of personal interest ● Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community. ● English Language Learners <ul style="list-style-type: none"> ● Invite students to explore different points of view on a topic of study and compare ● Integrated and small-group support ● Provide visuals of vocabulary/language ● Provide students with multiple literacy strategies ● Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences) ● 504 Students <ul style="list-style-type: none"> ● Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling). ● Extended time for revisions or opportunity to identify and develop areas of personal interest ● Encourage creative expression and thinking by allowing students to choose how to approach a problem or assignment ● Gifted & Talented Students <ul style="list-style-type: none"> ● Encourage students to explore concepts in depth and encourage independent studies or investigations ● Modeling or independent student led research
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<p style="text-align: center;">Integration of 21st Century Learning</p>	<ul style="list-style-type: none"> ● 9.2.4.A.1 Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.

	<ul style="list-style-type: none"> ● 9.2.4.A.2 Identify various life roles and civic and work-related activities in the school, home, and community. ● 9.2.4.A.3 Investigate both traditional and nontraditional careers and relate information to personal likes and dislikes. ● 9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success. ● CRP1. Act as a responsible and contributing citizen and employee. ● CRP2. Apply appropriate academic and technical skills. ● CRP4. Communicate clearly and effectively and with reason. ● CRP5. Consider the environmental, social and economic impacts of decisions. ● CRP6. Demonstrate creativity and innovation. ● CRP7: Employ valid and reliable research strategies. ● CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. ● CRP9. Model integrity, ethical leadership and effective management. ● CRP10. Plan education and career paths aligned to personal goals. ● CRP11: Use technology to enhance productivity.
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<p>Interdisciplinary Connections</p>	<ul style="list-style-type: none"> ● The science curriculum includes unifying themes such as systems, changes, and models. These themes combine with connected skills such as using measurement and representations. These themes and skills, along with the shared processes of observing and predicting, provide teachers with a myriad of opportunities for making meaningful cross-curricular connections. ● For example, investigations of local issues can engage students in thinking about science and social science concepts and help develop their understanding of probability and data analysis, which are part of the mathematics standards. Learning, understanding, and using scientific vocabulary allows students to connect their ideas to content specific words and phrases. Students must understand appropriate levels of scientific terminology to be able to achieve the lesson objectives. In addition, teachers may use journals, writing prompts, lab reports, and outlines to provide students with opportunities to write in the science classroom.