

PITTSGROVE TOWNSHIP SCHOOL DISTRICT



Course Name: Science	Grade Level(s): 2
Department: Science	Credits: N/A
BOE Adoption Date: September 17, 2020	Revision Date(s): August 5, 2020

Course Description

Students will explore the scientific method through an inquiry-based environment, developing critical thinking and problem solving skills essential to becoming informed productive contributors to society in the 21st century. Students will engage in engineering and scientific practices and apply concepts to deepen their understanding of questioning, research, hypothesis, experimenting, collecting data, and analysis. Through the application of the scientific method, students will be able to draw conclusions, collaborate, and communicate results regarding life science, different types of matter, and earth sciences.

Mission Statement

The Pittsgrove Township School District believes in growing all learners to thrive. The district offers an intellectually rigorous, dynamic curriculum aligned to state and national standards coupled with research-based practices in classrooms. The Pittsgrove Township School District strives to highlight critical thinking, problem-solving, intercultural literacy, digital literacy, collaboration, innovation, and a growth mindset as part of the instructional core of learning. The district provides high quality resources to provide young people the knowledge they need to approach the future as leaders and learners.

Curriculum & Instruction Goals

1. To ensure students are college and career ready upon graduation
2. To vertically and horizontally align curriculum PreK-12 to ensure successful transition of students at each grade level
3. To identify individual student strengths and weaknesses utilizing various assessment measures (formative, summative, alternative, etc.) so as to differentiate instruction while meeting the rigor of the applicable content standards
4. To improve student achievement as assessed through multiple measures including, but not limited to, state testing, local assessments, and ongoing progress monitoring

How to Read this Document

This curricular document contains both a *pacing guide* and *curriculum units* . The *pacing guide* serves to communicate an estimated timeframe as to *when* critical knowledge and skills will be taught throughout the year. The *pacing* , however, may differ slightly depending upon the unique needs of each learner. The *curriculum units* contain more detailed information as to the content, goals, objectives, instructional strategies, resources, and assessments.

NJ Administrative Code and Statutes Key
<p>^=Amistad Law</p> <p>O=Diversity & Inclusion Law</p> <p><>=Holocaust</p> <p>+=LGBT and Disabilities Law</p> <p>*=AAPI (Asian American and Pacific Islanders)</p> <p>§=Financial Literacy</p> <p>Use this key to understand where the NJ mandates are being implemented in the K-12 curriculum units.</p>

Pacing Guide

Course Title: Science

Prerequisite(s): --

Science Unit	Duration/ Month(s)	Related Standards	Learning Goals	Critical Knowledge and Skills
Unit 1: Scientific Method	2-3 weeks	K-2-ETS1-1 K-2-ETS1-2 K-2-ETS1-3	Students will be able to: <ul style="list-style-type: none"> ● Explain and apply the scientific method. ● Investigate the use of scientific tools in the observation process. 	<ul style="list-style-type: none"> ● Understand and explain the scientific process including question, research, hypothesis, test (experiment), collect data, analyze data, and draw conclusions, and communicate results ● Plan and conduct a simple investigation ● Measure, gather, record, display, and interpret data ● Draw conclusions based on data collected ● Communicate with peers about conclusions drawn
Unit 2: Life Science (Plant Adventures & Animal Adventures)	10-16 weeks	2-LS2-1 2-LS2-2 2-LS4-1 K-2-ETS1-1 K-2-ETS1-2 K-2-ETS1-3	Students will be able to: <ul style="list-style-type: none"> ● Explore and understand how seeds disperse and spread. ● Observe and evaluate the needs of plants and explain how they react. ● Examine how scientists organize animals into groups based on their 	<ul style="list-style-type: none"> ● Model seed dispersal by creating three different seed flyers ● Investigate how each seed flyers' structure helps the seed disperse ● Evaluate and communicate information by sorting animals based on their traits ● Validate their choices with

			<p>characteristics.</p> <ul style="list-style-type: none"> ● Observe and understand biodiversity in different habitats. ● Understand and determine the differences in plant and animal needs as well as habitats. ● Demonstrate grade-level proficiency in developing and using models. 	<p>evidence and facts</p> <ul style="list-style-type: none"> ● Determine patterns in animal characteristics in order to group them ● Analyze the sounds from two different habitats to determine which frogs are there ● Construct an argument from data about which habitat is more biodiverse
<p>Unit 3: Earth Science (Work of Water)</p>	<p>4-8 weeks</p>	<p>2-ESS1-1 2-ESS2-1 2-ESS2-2 2-ESS2-3 K-2-ETS1-1 K-2-ETS1-2 K-2-ETS1-3</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● Investigate and explain patterns in earth’s water systems. ● Observe and explain the effects of weathering and erosion. ● Explore that changes to the earth’s surface can happen slowly through the process of erosion. ● Demonstrate grade-level proficiency in developing and using models. 	<ul style="list-style-type: none"> ● Model and investigate earth’s surfaces and how rivers flow ● Identify patterns in water ● Model and investigate erosion with tumbling rocks ● Determine how and why sand happens at beaches ● Identify cause and effect practices in natural situations ● Investigate and observe landslides through modeling ● Engineer and design means to stabilize and prevent landslides ● Compare and construct arguments from data on which design would work best

<p>Unit 4: Matter (Material Magic)</p>	<p>5-10 weeks</p>	<p>2-PS1-1 2-PS1-2 K-2-ETS1-1 K-2-ETS1-2 K-2-ETS1-3</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● Explore and understand the different properties of materials and their functions. ● Investigate and observe the insulating and conducting properties of different materials. ● Explore and understand the solid and liquid states of matter. ● Analyze and understand how matter can be broken down or combined. ● Demonstrate grade-level proficiency in developing and using models. 	<ul style="list-style-type: none"> ● Observe and investigate effective materials for blocking the sun ● Design a hat that will block the sun's rays the best ● Investigate insulator materials ● Analyze data to decide on an item to pick up something that is hot ● Investigate and observe melting properties of liquids with candy ● Analyze data and construct an argument on which candy would melt without melting ● Solve real world problems by using what they've learned about materials ● Design and construct a tall and strong tower out of paper by changing its properties
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Instructional Unit Map

Course Title: Science

Unit Title:	Scientific Method		Start Date:	September
			Length of Unit:	2-3 weeks
Content Standards <i>What do we want them to know, understand, & do?</i>	<p>K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change (e.g., climate change) to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p>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.</p> <p>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>	Learning Goals	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● Explain and apply the scientific method. ● Investigate the use of scientific tools in the observation process. 	

Essential Questions	<ol style="list-style-type: none"> 1. What are the characteristics of a problem worth investigating? 2. What are the characteristics of a good, testable question? 3. What are the characteristics of a strong, observable hypothesis? 4. How can we analyze, use, and communicate data after an investigation? 		
Assessments <i>How will we know they have gained the knowledge & skills?</i>	Formative	Summative	Alternative
	<ul style="list-style-type: none"> ● Vocabulary study ● Group discussion ● Turn and talk ● Teacher Observation ● Graphic organizers ● Experiment findings/notes ● Written responses ● Post-it note shares ● Interactive sites (Kahoot, Quizizz, Plickers, Padlet, Quizlet, etc.) ● Quizzes ● Self-evaluations 	<ul style="list-style-type: none"> ● Independent investigation ● End of unit assessment 	<ul style="list-style-type: none"> ● Google slide presentation ● Seesaw activity/explanation
Unit Pre-Assessment(s) <i>What do they already know?</i>	<ul style="list-style-type: none"> ● KWL Chart (individual or whole class) ● Kahoot/Quizizz/Plickers pre-assessment ● Seesaw pre-assessment activity (video, voice recording, drawing, or written explanation of what they already know) ● Post-it note/Padlet share 		
Instructional Strategies/	<ul style="list-style-type: none"> ● Inquiry, student-based instruction ● Turn and talk ● Modeling 		

Student Activities	<ul style="list-style-type: none"> ● Partner/Group work ● Vocabulary cards ● Graphic organizers ● Note taking ● Investigations/experiments ● Mystery Science materials (videos, experiments, readings, “End of Mystery” questions, extension activities, etc.) 			
Instructional/ Assessment Scaffolds <i>(Modifications/ Accommodations) – planned for prior to instruction</i>	English Language Learners	Special Education Learners	Struggling Learners	Advanced Learners
	<ul style="list-style-type: none"> ● Preferential seating ● Peer buddy/study buddy ● Refer to prior knowledge ● Highlight/pre-teach vocabulary ● Vocabulary cards ● Simplify language/key words ● Provide visual/verbal charts and cues ● Provide concrete examples/models ● Consistent lesson structure 	<ul style="list-style-type: none"> ● Preferential seating ● Peer buddy/study buddy ● Refer to prior knowledge ● Highlight key terms ● Vocabulary cards ● Provide concrete examples/models ● Consistent lesson structure ● Frequent checks for understanding 	<ul style="list-style-type: none"> ● Preferential seating ● Refer to prior knowledge ● Vocabulary cards ● Graphic organizers ● Frequently check for understanding ● Clear directions ● Concrete examples ● Consistent lesson structure ● Vary test formats ● Highlight key directions ● Additional time ● Provide study guides ● Allow retakes 	<ul style="list-style-type: none"> ● Analyze and build on independent prior knowledge ● Higher level questioning with investigations/experiments ● Provide extension centers ● Leveled grouping ● Independent study

	<ul style="list-style-type: none"> ● Frequent checks for understanding ● Give clear directions ● Give directions visually and verbally ● Repeat directions ● Give directions in native language ● Give single step directions ● Highlight key directions ● Shorten task/assignment ● Study guides provided by teacher in native language ● Vary test formats ● Additional time ● Allow oral responses ● Read test/portions aloud 	<ul style="list-style-type: none"> ● Give clear directions ● Give directions visually and verbally ● Repeat directions ● Allow for rest breaks ● Highlight key directions ● Shorten task/assignment ● Provide study guides ● Provide modified tests ● Additional time ● Allow oral responses ● Read test/portions aloud ● Allow for retakes 		
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	<ul style="list-style-type: none"> ● Provide glossary with native language ● Allow for retakes 				
Differentiated Instructional Methods: <i>(Multiple means for students to access content and multiple modes for student to express understanding)</i>	Access (Resources and/or Process)		Expression (Products and/or Performance)		
	<ul style="list-style-type: none"> ● Chromebook ● Interactive Whiteboard ● Graphic organizers ● Vocabulary cards ● Turn and talk ● Modeling ● Partner/Group work ● Graphic organizers ● Note taking 		<ul style="list-style-type: none"> ● Presentations (Google Slides, Seesaw) ● Investigations/research projects 		
Vocabulary <i>Highlight key vocabulary (both Tier II and Tier III words)</i>	Tier II - question, research, investigate, experiment, data, analyze, conclusions, communicate, results, variable Tier III - hypothesis, scientific method				
Integration of Technology SAMR	<ul style="list-style-type: none"> ● S - Use Brainpop & Floccabulary videos to introduce lessons/concepts, Record findings in Seesaw ● A - Google Forms, Quizziz, Kahoot, etc. for review/assessment ● M - Students collaborate to complete graphic organizers/models in Kami/Seesaw/Google Docs/Slides ● R - Students collaborate to complete and explain scientific findings in Google Docs/Slides or Seesaw and present to the class 				

**Interdisciplinary
Connections**

[NJ Student
Learning
Standards](#)

ELA Standards:

- **RI.2.1** Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- **W.2.6** With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.
- **W.2.8** Recall information from experiences or gather information from provided sources to answer a question.
- **SL.2.5** Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings.

Mathematics Standards:

- **MP.2** Reason abstractly and quantitatively.
- **MP.4** Model with mathematics.
- **MP.5** Use appropriate tools strategically.
- **2.MD.D.10** Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

Technology Standards:

- **8.1.2.A.4** Demonstrate developmentally appropriate navigation skills in virtual environments.
- **8.2.2.D.1** Collaborate and apply a design process to solve a simple problem from everyday experiences.

Career Ready Practices:

- **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.
- **CRP6** Demonstrate creativity and innovation.
- **CRP8** Utilize critical thinking to make sense of problems and persevere in solving them.
- **CRP11** Use technology to enhance productivity.
- **CRP12** Work productively in teams while using cultural global competence.

21st Century Themes/Skills P21 Framework	Themes	Skills
	<ul style="list-style-type: none"> ● Global Awareness ● Environmental Literacy 	<ul style="list-style-type: none"> ● Creativity and Innovation ● Critical Thinking and Problem Solving ● Communication and Collaboration ● Flexibility and Adaptability ● Initiative and Self-direction ● Social and Cross-cultural skills ● Productivity and Accountability ● Leadership and Responsibility
Resources/Materials	<ul style="list-style-type: none"> ● Chromebooks ● Flocabulary ● Brainpop & Brainpop Jr. ● Interactive websites (Kahoot, Quizziz, Seesaw, etc.) ● Google Classroom ● Science folder ● Teacher generated resources ● Scientific Method flipbook ● Scientific Method graphic organizer ● Mystery Science materials for “Introduce Science” lessons (videos, experiments, readings, “End of Mystery” questions, extension activities, etc.) 	

Instructional Unit Map			
Course Title: Science			
Unit Title	Life Science (Plant Adventures & Animal Adventures)	Start Date:	October-January

		Length of Unit:	10-16 weeks
<p>Content Standards <i>What do we want them to know, understand, & do?</i></p>	<p>2-LS2-1 Plan and conduct an investigation to determine if plants need sunlight and water to grow.</p> <p>2-LS2-2 Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.</p> <p>2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats.</p> <p>K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change (e.g., climate change) to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p>K-2-ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape</p>	<p>Learning Goals</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● Explore and understand how seeds disperse and spread. ● Observe and evaluate the needs of plants and explain how they react. ● Examine how scientists organize animals into groups based on their characteristics. ● Observe and understand biodiversity in different habitats. ● Understand and determine the differences in plant and animal needs as well as habitats. ● Demonstrate grade-level proficiency in developing and using models.

	<p>of an object helps it function as needed to solve a given problem.</p> <p>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>		
Essential Questions	<ol style="list-style-type: none"> 1. What do plants need to grow? 2. How do animals disperse seeds? 3. How are animals and plants connected? 4. Why do plants and animals live in different habitats? 		
Assessments <i>How will we know they have gained the knowledge & skills?</i>	Formative	Summative	Alternative
	<ul style="list-style-type: none"> ● Vocabulary study ● Group discussion ● Turn and talk ● Teacher Observation ● Graphic organizers ● Experiment findings/notes ● Written responses ● Post-it note shares ● Interactive sites (Kahoot, Quizizz, Plickers, Padlet, Quizlet, etc.) ● Quizzes 	<ul style="list-style-type: none"> ● Independent investigation ● End of unit assessment 	<ul style="list-style-type: none"> ● Google slide presentation ● Seesaw activity/explanation

	<ul style="list-style-type: none"> ● Self-evaluations 			
Unit Pre-Assessment(s) <i>What do they already know?</i>	<ul style="list-style-type: none"> ● KWL Chart (individual or whole class) ● Kahoot/Quizizz/Plickers pre-assessment ● Seesaw pre-assessment activity (video, voice recording, drawing, or written explanation of what they already know) ● Post-it note/Padlet share 			
Instructional Strategies/ Student Activities	<ul style="list-style-type: none"> ● Inquiry, student-based instruction ● Turn and talk ● Modeling ● Partner/Group work ● Vocabulary cards ● Graphic organizers ● Note taking ● Investigations/experiments ● Mystery Science materials (videos, experiments, readings, “End of Mystery” questions, extension activities, etc.) 			
Instructional/ Assessment Scaffolds <i>(Modifications/ Accommodations) – planned for prior to instruction</i>	English Language Learners	Special Education Learners	Struggling Learners	Advanced Learners
	<ul style="list-style-type: none"> ● Preferential seating ● Peer buddy/study buddy ● Refer to prior knowledge ● Highlight/ pre-teach vocabulary ● Vocabulary cards 	<ul style="list-style-type: none"> ● Preferential seating ● Peer buddy/study buddy ● Refer to prior knowledge ● Highlight key terms ● Vocabulary cards 	<ul style="list-style-type: none"> ● Preferential seating ● Refer to prior knowledge ● Vocabulary cards ● Graphic organizers ● Frequently check for understanding ● Clear directions ● Concrete examples ● Consistent lesson structure ● Vary test formats ● Highlight key directions 	<ul style="list-style-type: none"> ● Analyze and build on independent prior knowledge ● Higher level questioning with investigations/ experiments ● Provide extension centers

	<ul style="list-style-type: none"> ● Simplify language/key words ● Provide visual/verbal charts and cues ● Provide concrete examples/models ● Consistent lesson structure ● Frequent checks for understanding ● Give clear directions ● Give directions visually and verbally ● Repeat directions ● Give directions in native language ● Give single step directions ● Highlight key directions ● Shorten task/assignment ● Study guides provided by 	<ul style="list-style-type: none"> ● Provide concrete examples/models ● Consistent lesson structure ● Frequent checks for understanding ● Give clear directions ● Give directions visually and verbally ● Repeat directions ● Allow for rest breaks ● Highlight key directions ● Shorten task/assignment ● Provide study guides ● Provide modified tests ● Additional time ● Allow oral responses 	<ul style="list-style-type: none"> ● Additional time ● Provide study guides ● Allow retakes 	<ul style="list-style-type: none"> ● Leveled grouping ● Independent study
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	<p>teacher in native language</p> <ul style="list-style-type: none"> • Vary test formats • Additional time • Allow oral responses • Read test/portions aloud • Provide glossary with native language • Allow for retakes 	<ul style="list-style-type: none"> • Read test/portions aloud • Allow for retakes 		
<p>Differentiated Instructional Methods: <i>(Multiple means for students to access content and multiple modes for student to express understanding)</i></p>	<p>Access (Resources and/or Process)</p>		<p>Expression (Products and/or Performance)</p>	
	<ul style="list-style-type: none"> • Chromebook • Interactive Whiteboard • Graphic organizers • Vocabulary cards • Turn and talk • Modeling • Partner/Group work • Graphic organizers • Note taking 		<ul style="list-style-type: none"> • Presentations (Google Slides, Seesaw) • Investigations/experiments 	
<p>Vocabulary <i>Highlight key vocabulary (both</i></p>	<p>Tier II - question, research, investigate, experiment, data, analyze, conclusions, communicate, results, characteristics, seed, soil, resources, disperse</p> <p>Tier III - habitat, life cycle, biodiversity, species,</p>			

Tier II and Tier III words)	
Integration of Technology SAMR	<ul style="list-style-type: none"> ● S - Use Brainpop & Flocabulary videos to introduce lessons/concepts, Record findings in Seesaw ● A - Google Forms, Quizziz, Kahoot, etc. for review/assessment ● M - Students collaborate to complete graphic organizers/models in Kami/Seesaw/Google Docs/Slides ● R - Students collaborate to complete and explain scientific findings in Google Docs/Slides or Seesaw and present to the class
Interdisciplinary Connections NJ Student Learning Standards	<p>ELA Standards:</p> <ul style="list-style-type: none"> ● RI.2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. ● W.2.6 With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. ● W.2.7 Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). ● W.2.8 Recall information from experiences or gather information from provided sources to answer a question. ● SL.2.5 Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. <p>Mathematics Standards:</p> <ul style="list-style-type: none"> ● MP.2 Reason abstractly and quantitatively. ● MP.4 Model with mathematics. ● MP.5 Use appropriate tools strategically. ● 2.MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. <p>Technology Standards:</p> <ul style="list-style-type: none"> ● 8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments. ● 8.2.2.D.1 Collaborate and apply a design process to solve a simple problem from everyday experiences.

	<p>Career Ready Practices:</p> <ul style="list-style-type: none"> ● 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. ● CRP6 Demonstrate creativity and innovation. ● CRP8 Utilize critical thinking to make sense of problems and persevere in solving them. ● CRP11 Use technology to enhance productivity. ● CRP12 Work productively in teams while using cultural global competence. 	
<p>21st Century Themes/Skills P21 Framework</p>	<p>Themes</p>	<p>Skills</p>
<p>Resources/Materials</p>	<ul style="list-style-type: none"> ● Chromebooks ● Flocabulary ● Brainpop & Brainpop Jr. ● Interactive websites (Kahoot, Quizziz, Seesaw, etc.) ● Google Classroom ● Science folder ● Teacher generated resources ● Scientific Method flipbook ● Scientific Method graphic organizer 	

- Mystery Science materials for “Plant Adventures” and “Animal Adventures” lessons (videos, experiments, readings, “End of Mystery” questions, extension activities, etc.)

Instructional Unit Map

Course Title: Science

Unit Title	Earth Science (Work of Water)	Start Date:	January-March
		Length of Unit:	4-8 Weeks
Content Standards <i>What do we want them to know, understand, & do?</i>	<p>2-ESS1-1 Use information from several sources to provide evidence that Earth events can occur quickly or slowly.</p> <p>2-ESS2-1 Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.</p> <p>2-ESS2-2 Develop a model to represent the shapes and kinds of land and bodies of water in an area.</p> <p>2-ESS2-3 Obtain information to identify where water is found on Earth and that it can be solid or liquid</p>	Learning Goals	<p>Students will be able to:</p> <ul style="list-style-type: none"> • Investigate and explain patterns in earth’s water systems. • Observe and explain the effects of weathering and erosion. • Explore that changes to the earth’s surface can happen slowly through the process of erosion. • Demonstrate grade-level proficiency in developing and using models.

	<p>K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change (e.g., climate change) to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p>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.</p> <p>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>			
<p>Essential Questions</p>	<ol style="list-style-type: none"> 1. Where would you go if you floated down a river? 2. Why is there sand at the beach? 3. What is strong enough to make a canyon? 4. How can you stop a landslide? 			
<p>Assessments</p>	<p>Formative</p>	<p>Summative</p>		<p>Alternative</p>

<p><i>How will we know they have gained the knowledge & skills?</i></p>	<ul style="list-style-type: none"> ● Vocabulary study ● Group discussion ● Turn and talk ● Teacher Observation ● Graphic organizers ● Experiment findings/notes ● Written responses ● Post-it note shares ● Interactive sites (Kahoot, Quizizz, Plickers, Padlet, Quizlet, etc.) ● Quizzes ● Self-evaluations 	<ul style="list-style-type: none"> ● Independent investigation ● End of unit assessment 	<ul style="list-style-type: none"> ● Google slide presentation ● Seesaw activity/explanation
<p>Unit Pre-Assessment(s) <i>What do they already know?</i></p>	<ul style="list-style-type: none"> ● KWL Chart (individual or whole class) ● Kahoot/Quizizz/Plickers pre-assessment ● Seesaw pre-assessment activity (video, voice recording, drawing, or written explanation of what they already know) ● Post-it note/Padlet share 		
<p>Instructional Strategies/ Student Activities</p>	<ul style="list-style-type: none"> ● Inquiry, student-based instruction ● Turn and talk ● Modeling ● Partner/Group work ● Vocabulary cards ● Graphic organizers ● Note taking ● Investigations/experiments ● Mystery Science materials (videos, experiments, readings, “End of Mystery” questions, extension activities, etc.) 		

Instructional/ Assessment Scaffolds	English Language Learners	Special Education Learners	Struggling Learners	Advanced Learners
<i>(Modifications/ Accommodations) – planned for prior to instruction</i>	<ul style="list-style-type: none"> ● Preferential seating ● Peer buddy/study buddy ● Refer to prior knowledge ● Highlight/pre-teach vocabulary ● Vocabulary cards ● Simplify language/key words ● Provide visual/verbal charts and cues ● Provide concrete examples/models ● Consistent lesson structure ● Frequent checks for understanding ● Give clear directions 	<ul style="list-style-type: none"> ● Preferential seating ● Peer buddy/study buddy ● Refer to prior knowledge ● Highlight key terms ● Vocabulary cards ● Provide concrete examples/models ● Consistent lesson structure ● Frequent checks for understanding ● Give clear directions ● Give directions visually and verbally ● Repeat directions 	<ul style="list-style-type: none"> ● Preferential seating ● Refer to prior knowledge ● Vocabulary cards ● Graphic organizers ● Frequently check for understanding ● Clear directions ● Concrete examples ● Consistent lesson structure ● Vary test formats ● Highlight key directions ● Additional time ● Provide study guides ● Allow retakes 	<ul style="list-style-type: none"> ● Analyze and build on independent prior knowledge ● Higher level questioning with investigations/experiments ● Provide extension centers ● Leveled grouping ● Independent study

	<ul style="list-style-type: none"> ● Give directions visually and verbally ● Repeat directions ● Give directions in native language ● Give single step directions ● Highlight key directions ● Shorten task/assignment ● Study guides provided by teacher in native language ● Vary test formats ● Additional time ● Allow oral responses ● Read test/portions aloud ● Provide glossary with native language ● Allow for retakes 	<ul style="list-style-type: none"> ● Allow for rest breaks ● Highlight key directions ● Shorten task/assignment ● Provide study guides ● Provide modified tests ● Additional time ● Allow oral responses ● Read test/portions aloud ● Allow for retakes 		
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Differentiated Instructional Methods:	Access (Resources and/or Process)	Expression (Products and/or Performance)
<i>(Multiple means for students to access content and multiple modes for student to express understanding)</i>	<ul style="list-style-type: none"> ● Chromebook ● Interactive Whiteboard ● Graphic organizers ● Vocabulary cards ● Turn and talk ● Modeling ● Partner/Group work ● Graphic organizers ● Note taking 	<ul style="list-style-type: none"> ● Presentations (Google Slides, Seesaw) ● Investigations/experiments
Vocabulary <i>Highlight key vocabulary (both Tier II and Tier III words)</i>	<p>Tier II - question, research, investigate, experiment, data, analyze, conclusions, communicate, results, mountains, plains, rivers, oceans, earthquake, landslide</p> <p>Tier III - erosion, landforms, canyon,</p>	
Integration of Technology SAMR	<ul style="list-style-type: none"> ● S - Use Brainpop & Flocabulary videos to introduce lessons/concepts, Record findings in Seesaw ● A - Google Forms, Quizziz, Kahoot, etc. for review/assessment ● M - Students collaborate to complete graphic organizers/models in Kami/Seesaw/Google Docs/Slides ● R - Students collaborate to complete and explain scientific findings in Google Docs/Slides or Seesaw and present to the class 	
Interdisciplinary Connections NJ Student Learning Standards	<p>ELA Standards:</p> <ul style="list-style-type: none"> ● RI.2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. ● W.2.6 With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. ● W.2.7 Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). 	

	<ul style="list-style-type: none"> ● W.2.8 Recall information from experiences or gather information from provided sources to answer a question. ● SL.2.5 Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. <p>Mathematics Standards:</p> <ul style="list-style-type: none"> ● MP.2 Reason abstractly and quantitatively. ● MP.4 Model with mathematics. ● MP.5 Use appropriate tools strategically. ● 2.MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. <p>Technology Standards:</p> <ul style="list-style-type: none"> ● 8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments. ● 8.2.2.D.1 Collaborate and apply a design process to solve a simple problem from everyday experiences. <p>Career Ready Practices:</p> <ul style="list-style-type: none"> ● 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. ● CRP6 Demonstrate creativity and innovation. ● CRP8 Utilize critical thinking to make sense of problems and persevere in solving them. ● CRP11 Use technology to enhance productivity. ● CRP12 Work productively in teams while using cultural global competence. 	
21st Century Themes/Skills P21 Framework	Themes	Skills
	<ul style="list-style-type: none"> ● Global Awareness ● Environmental Literacy 	<ul style="list-style-type: none"> ● Creativity and Innovation ● Critical Thinking and Problem Solving ● Communication and Collaboration

		<ul style="list-style-type: none"> ● Flexibility and Adaptability ● Initiative and Self-direction ● Social and Cross-cultural skills ● Productivity and Accountability ● Leadership and Responsibility
Resources/Materials	<ul style="list-style-type: none"> ● Chromebooks ● Flocabulary ● Brainpop & Brainpop Jr. ● Interactive websites (Kahoot, Quizziz, Seesaw, etc.) ● Google Classroom ● Science folder ● Teacher generated resources ● Scientific Method flipbook ● Scientific Method graphic organizer ● Mystery Science materials for “Work of Water” lessons (videos, experiments, readings, “End of Mystery” questions, extension activities, etc.) 	

Instructional Unit Map			
Course Title: Science			
Unit Title	Matter (Material Magic)	Start Date:	March-May
		Length of Unit:	5-10 Weeks
Content Standards	2-PS1-1 Plan and conduct an investigation to describe and classify different kinds	Learning Goals	Students will be able to: <ul style="list-style-type: none"> ● Explore and understand the different properties of materials and their functions. ● Investigate and observe the insulating and conducting properties of

<p><i>What do we want them to know, understand, & do?</i></p>	<p>of materials by their observable properties.</p> <p>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.</p> <p>K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change (e.g., climate change) to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p>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.</p> <p>K-2-ETS1-3 Analyze data from tests of two objects designed to solve the same problem to compare the strengths and</p>		<p>different materials.</p> <ul style="list-style-type: none"> ● Explore and understand the solid and liquid states of matter. ● Analyze and understand how matter can be broken down or combined. ● Demonstrate grade-level proficiency in developing and using models.
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	weaknesses of how each performs.		
Essential Questions	<ol style="list-style-type: none"> 1. Why do we wear clothes? 2. Can you really fry an egg on a hot sidewalk? 3. Why are so many toys made out of plastic? 4. What materials might be invented in the future? 5. Could you build a house out of paper? 		
Assessments <i>How will we know they have gained the knowledge & skills?</i>	Formative	Summative	Alternative
	<ul style="list-style-type: none"> ● Vocabulary study ● Group discussion ● Turn and talk ● Teacher Observation ● Graphic organizers ● Experiment findings/notes ● Written responses ● Post-it note shares ● Interactive sites (Kahoot, Quizizz, Plickers, Padlet, Quizlet, etc.) ● Quizzes ● Self-evaluations 	<ul style="list-style-type: none"> ● Independent investigation ● End of unit assessment 	<ul style="list-style-type: none"> ● Google slide presentation ● Seesaw activity/explanation
Unit Pre-Assessment(s) <i>What do they already know?</i>	<ul style="list-style-type: none"> ● KWL Chart (individual or whole class) ● Kahoot/Quizizz/Plickers pre-assessment ● Seesaw pre-assessment activity (video, voice recording, drawing, or written explanation of what they already know) ● Post-it note/Padlet share 		

Instructional Strategies/ Student Activities	<ul style="list-style-type: none"> ● Inquiry, student-based instruction ● Turn and talk ● Modeling ● Partner/Group work ● Vocabulary cards ● Graphic organizers ● Note taking ● Investigations/experiments ● Mystery Science materials (videos, experiments, readings, “End of Mystery” questions, extension activities, etc.) 			
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Integration of Technology <u>SAMR</u>	<ul style="list-style-type: none"> ● S - Use Brainpop & Flocabulary videos to introduce lessons/concepts, Record findings in Seesaw ● A - Google Forms, Quizziz, Kahoot, etc. for review/assessment ● M - Students collaborate to complete graphic organizers/models in Kami/Seesaw/Google Docs/Slides ● R - Students collaborate to complete and explain scientific findings in Google Docs/Slides or Seesaw and present to the class 				

**Interdisciplinary
Connections**

[NJ Student
Learning
Standards](#)

ELA Standards:

- **RI.2.1** Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- **RI.2.3** Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.
- **RI.2.8** Describe how reasons support specific points the author makes in a text.
- **W.2.1** Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a concluding statement or section.

Mathematics Standards:

- **MP.2** Reason abstractly and quantitatively.
- **MP.4** Model with mathematics.
- **MP.5** Use appropriate tools strategically.
- **2.MD.D.10** Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

Technology Standards:

- **8.1.2.A.4** Demonstrate developmentally appropriate navigation skills in virtual environments.
- **8.2.2.D.1** Collaborate and apply a design process to solve a simple problem from everyday experiences.

Career Ready Practices:

- **CRP1** Act as a responsible and contributing citizen and employee.
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