

# **Readington Township Public Schools**

## **Sustainability Integration K-8**

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# K-8

## Sustainability Integration

### Sustainability Standards

- [A] Cultural Preservation & Transformation
- [B] Responsible Local & Global Citizenship
- [C] The Dynamics of Systems & Change
- [D] Sustainable Economics
- [E] Healthy Commons
- [F] Natural Laws & Ecological Principles
- [G] Inventing & Affecting The Future
- [H] Multiple Perspectives
- [I] Strong Sense of Place

KINDERGARTEN		
Subject/Unit	Standard	Activity
Reading	RI.K.2.	Students will listen to the book, <i>Me Jane</i> and discuss the importance of wanting to help animals. <a href="https://vimeo.com/411492039/1977a88da7">https://vimeo.com/411492039/1977a88da7</a>
Math - Climate Change	K.G.A.1	Students will listen to the story <i>Kobee Manatee: A Wild Weather Adventure</i> and describe the relative positions of these objects using terms such as <i>above</i> , <i>below</i> , <i>beside</i> , <i>in front of</i> , <i>behind</i> , and <i>next to</i> .  <a href="https://www.kobeemanatee.com/wp-content/uploads/2015/02/KM2-Teachers-Gude-FNL-Bk-2.pdf">https://www.kobeemanatee.com/wp-content/uploads/2015/02/KM2-Teachers-Gude-FNL-Bk-2.pdf</a>
Reading Science/ Earth and Human Activity	RI.K.2 K-ESS3-1	Students will learn about the importance of bees in nature and the importance of nature in humans' lives. Book: <a href="https://www.youtube.com/watch?v=DO215Uai4i4">https://www.youtube.com/watch?v=DO215Uai4i4</a>
Science/ Earth and Human Activity Arts	1.5.2.Cr1b: K-ESS3-1	Students will have a basic understanding of some issues our planet is facing and the people who try and fix these issues.

Math - Climate Change	K.DL.A.1	Students will monitor and document daily weather, using appropriate icons such as a sun, cloud, etc. Students will then classify, count, and sort their data.
Science- Earth Science Social Studies	K.CC.A.2 6.1.2.EconET.2	Students will see how a resource can be "shared" in an unequal fashion, then students will generate strategies for how to share a finite resource with equity.
Social Studies  Career Readiness, Life Literacies, & Key Skills	6.3.2.CivicsPD.1 9.4.2.CT.1	Students will learn about reduce, reuse, recycle and create a classroom waste management plan.  Slideshow: <a href="https://docs.google.com/presentation/d/1BtLlqIW75-KgKxSfGfaPd6rzeFV3k--aMvnODFr2HAo/view">https://docs.google.com/presentation/d/1BtLlqIW75-KgKxSfGfaPd6rzeFV3k--aMvnODFr2HAo/view</a>
Math - Climate Change	K.G.B.4	Suggestion from Proposed Standards Document:  Students will design and build a structure, using common objects found in the classroom, to investigate how sunlight warms the Earth's surface. Throughout the design and building, students may compare two- and three-dimensional objects
Math	K.C.C.C.6	Students will see how a resource can be "shared" in an unequal fashion, then students will generate strategies for how to share a finite resource with equity.  <a href="https://populationeducation.org/resource/go-fish/">https://populationeducation.org/resource/go-fish/</a>
Science: Earth Systems Computer & Design	9.4.2.CI.2: K-ESS2-2	Students will upcycle a milk jug to make a bird feeder.
Science  World Language	K-ESS3-3 K-2-ETS1-1 7.1.NL.IPRET.4	Students listen to a story from Chile about children taking action to save energy at home.  <a href="https://docs.google.com/presentation/d/12DpTepdwoyrg-I7JuiuMtkGD5j1AojWNQpl9eP9q3O0/view#slide=id.ge57b5fd4aa_0_0">https://docs.google.com/presentation/d/12DpTepdwoyrg-I7JuiuMtkGD5j1AojWNQpl9eP9q3O0/view#slide=id.ge57b5fd4aa_0_0</a>
Speaking and Listening	SL.K.2.	Students observe ocean animals and their habitats using scientific observation skills.  Slideshow: <a href="https://docs.google.com/presentation/d/1BIXqAHMvqyCVEOew7i_-DnhJh8IDj403E_L-NNejMug/view">https://docs.google.com/presentation/d/1BIXqAHMvqyCVEOew7i_-DnhJh8IDj403E_L-NNejMug/view</a>
Math	K.M.A.1	Students will create a patterned art piece from items found in nature.
Writing	SL.K.5. A	Students will create a superhero related to Captain

Speaking and Listening	SL.K.6. W.K.2.	Climate. The students will illustrate how they will help the Earth.
Physical Education	2.1.2.CHSS.4 2.1.2.PGD.1 2.2.2.PF.1	Students will discuss how bats use echolocation to figure out where they are and find prey. Students will then play a tree and bat game to simulate being a bat out in nature.
Computer Science & Design Thinking	8.2.2.ED.2: 8.2.2.ED.3 8.2.2.ITH.5	Students are introduced to sea turtle conservation and student activism through the story <i>Follow the Moon Home</i> by acclaimed activist Philippe Cousteau and renowned author Deborah Hopkinson.  Slideshow: <a href="https://docs.google.com/presentation/d/1t1mHfUWM4HsrWvOi3zL3EDbU2imZJWylEskBn5mCRk/edit#slide=id.g11b3e3eee53_0_48">https://docs.google.com/presentation/d/1t1mHfUWM4HsrWvOi3zL3EDbU2imZJWylEskBn5mCRk/edit#slide=id.g11b3e3eee53_0_48</a>
Math	K.M.A.1 K.M.A.2	Students investigate a small portion of the school yard, such as a square foot, to discover what lives and grows there and then work together to answer the questions “Why are plants important for the Earth and for people?” and “What do plants need to grow?”  Slideshow: <a href="https://docs.google.com/presentation/d/1tofU4DcXjfs6TuLQh1n_o6afhcgexEDlb8Q8aemMm1Q/view">https://docs.google.com/presentation/d/1tofU4DcXjfs6TuLQh1n_o6afhcgexEDlb8Q8aemMm1Q/view</a>
Science/ Earth and Human Activity  Arts	1.5.2.Cr1b  K-ESS3-1	Students will learn about water pollution and different ways to keep their water clean.  <a href="https://www.nj.gov/dep/seeds/docs/CWRCB.pdf">https://www.nj.gov/dep/seeds/docs/CWRCB.pdf</a>
Social Studies  Reading	6.1.2.GeoHE.1  RI.K.2.	Students will learn about the many transportation alternatives to using a car.  <a href="#">Carl Gets Some Rest</a>
<b>GRADE 1</b>		
<b>Subject/Unit</b>	<b>Standard</b>	<b>Activity</b>
Reading	RI.1.2	Students will listen to the story Fabienne’s Wild Weather Adventure. They will discuss the different types of weather and create their own weather journal.
Math - Climate Change	1.OA.A.2	Students will listen to the book, Kobee the Manatee: Heading Home to Florida and will solve word problems according to the pictures in the story.

		<a href="https://www.kobeemanatee.com/wp-content/uploads/2015/02/Kobee_Manatee_Teachers_Guide_Bk_1_FNL.pdf">https://www.kobeemanatee.com/wp-content/uploads/2015/02/Kobee_Manatee_Teachers_Guide_Bk_1_FNL.pdf</a>
Visual & Performing Arts	1.5.5.Cr3a	<p>Students will learn that recycling old t-shirts and using reusable bags at the store can help reduce waste by making their own reusable bags by repurposing an old t-shirt.</p> <p><a href="https://cms-tc.pbskids.org/global/cloth-bag-1.pdf">https://cms-tc.pbskids.org/global/cloth-bag-1.pdf</a></p>
Math - Climate Change	1.DL.A.1	<p>Students will work together to interpret 'warming stripe' data (visual representations of the change in temperature as measured in each country over the past 100+ years.) Each stripe represents the temperature in that country averaged over a year.</p> <p><a href="https://showyourstripes.info/l/globe">https://showyourstripes.info/l/globe</a></p>
Math	1.DL.A.1	<p>Students watch a video about what plants need to grow and read a book to learn how gardening can transform a community and provide needed resources.</p> <p>Slideshow:  <a href="https://docs.google.com/presentation/d/1tofU4DcXjfs6TulQh1n_o6afhcgexEDlb8Q8aemMm1Q/view">https://docs.google.com/presentation/d/1tofU4DcXjfs6TulQh1n_o6afhcgexEDlb8Q8aemMm1Q/view</a> </p>
Math	1.DL.A.1	<p>Students will learn how to set up a pollinator garden, monitor it, and collect data on its success.</p> <p><a href="https://www.nwf.org/-/media/Documents/PDFs/Eco-Schools/NWF_AtHomePollinatorKit_Brochure_National-Use.ashx?la=en&amp;hash=094CC2A85810705AC09644C0FAACE70E2F2ACE6F">https://www.nwf.org/-/media/Documents/PDFs/Eco-Schools/NWF_AtHomePollinatorKit_Brochure_National-Use.ashx?la=en&amp;hash=094CC2A85810705AC09644C0FAACE70E2F2ACE6F</a></p>
World Language	7.1.NL.IPRET.4	<p>Students watch a music video and play games to learn about animals and why climate is important to the animals.</p> <p><a href="https://docs.google.com/presentation/d/12DpTepdwoyrg-l7JuiuMtkGD5j1AojWNQpl9eP9q3O0/view#slide=id.ge57b5fd4aa_0_0">https://docs.google.com/presentation/d/12DpTepdwoyrg-l7JuiuMtkGD5j1AojWNQpl9eP9q3O0/view#slide=id.ge57b5fd4aa_0_0</a></p>
Health Physical Education	2.1.2.CHSS.4 2.1.2.PGD.1 2.2.2.PF.1	Students will learn about the relationship between health and climate change through play and movement.

		<p>Slideshow:</p> <p><a href="https://docs.google.com/presentation/d/1QazfUVi9g9iI BXZm1bqTRipDDI9 bDU95bbOn3f6hAU/view">https://docs.google.com/presentation/d/1QazfUVi9g9iI BXZm1bqTRipDDI9 bDU95bbOn3f6hAU/view</a></p>
Physical Education	2.1.2.CHSS.4 2.1.2.PGD.1 2.2.2.PF.1	Students will upcycle plastic bags to make jump rope.
Writing	W.1.2	Students will create a nature journal where they will record what they see and questions they have about the world around them.
Writing Speaking and Listening	W.1.2 SL.1.1	<p>Students identify characteristics of animal habitats and analyze how habitat changes can affect animals.</p> <p><a href="https://docs.google.com/document/d/1ihsCPcHWp2im 07Oa3OWUIVty88b6ARXEhluUVDHD6cw/view">https://docs.google.com/document/d/1ihsCPcHWp2im 07Oa3OWUIVty88b6ARXEhluUVDHD6cw/view</a></p>
Speaking and Listening	SL.1.1	Students will listen to the book, Rickie and Henri. Students will discuss the impact of hunters on various animals.
Computer Science & Design Thinking	8.2.2.ED.2 8.2.2.ED.3 8.2.2.ITH.5	<p>Students activate background knowledge of sea turtles and reflect on the dangers they face in the oceans of the world.</p> <p>Slideshow:</p> <p><a href="https://docs.google.com/presentation/d/1t1mHfUWM4 HsrWvOi3zL3EDbU2imZJWylEskBn5mCRk/view">https://docs.google.com/presentation/d/1t1mHfUWM4 HsrWvOi3zL3EDbU2imZJWylEskBn5mCRk/view</a></p> <p>KWL Chart:</p> <p><a href="https://docs.google.com/document/d/1rxBGmTn2dqJ0 oBodz-k74ZcUCsuFmLfxw0LWiB6Q8tl/view">https://docs.google.com/document/d/1rxBGmTn2dqJ0 oBodz-k74ZcUCsuFmLfxw0LWiB6Q8tl/view</a></p> <p>Brainstorming Jamboard:</p> <p><a href="https://jamboard.google.com/d/1HS70LdYuGKTs6dGL mrSLXplCayBEyxCX9Ifsx0CUAJs/viewer">https://jamboard.google.com/d/1HS70LdYuGKTs6dGL mrSLXplCayBEyxCX9Ifsx0CUAJs/viewer</a></p>
Social Studies	6.1.2.GeoHE.1	<p>Students will learn that climate action is a complex problem and that some climate solutions can create other climate problems.</p> <p>Digital Book:</p> <p><a href="https://climatescience.org/books/kids-can-change-the-world">https://climatescience.org/books/kids-can-change-the-world</a></p>
Science/ Earth's Place in the Measurement	1.MD.B.3 1-ESS1-1	Students will learn that they can use the sundial to find out which direction is north by looking at the sun's

		<p>shadow at noon.</p> <p><a href="https://cms-tc.pbskids.org/global/NatureCat_Printable_Sundial_FINAL.pdf">https://cms-tc.pbskids.org/global/NatureCat_Printable_Sundial_FINAL.pdf</a></p>
Math	1.DL.A.1	<p>Students will play a tree-cutting simulation game, allowing them to observe how the starting population size of trees in a forest and deforestation rates affect the forest population over time.</p> <p><a href="https://populationeducation.org/resource/fuera-abajo-timber/">https://populationeducation.org/resource/fuera-abajo-timber/</a></p>
Visual & Performing Arts	1.5.5.Cr3a	<p>Students will learn about recycling by making a recycled butterfly finger puppet.</p> <p><a href="https://www.nj.gov/dep/52earthday/docs/recycled-butterfly-finger-puppet.pdf">https://www.nj.gov/dep/52earthday/docs/recycled-butterfly-finger-puppet.pdf</a></p>
Reading	RI.1.2	<p>This is an interactive story about the journey of Earthly and Thoko and the effects of climate change on Earthly.</p> <p>This book is excellent for introducing younger students to the basics of climate change.</p> <p><a href="https://climatescience.org/children">https://climatescience.org/children</a></p>
Reading Social Studies	RI.1.2 6.1.2.GeoHE.1	<p>Students will learn about air quality and how important it is to their health.</p> <p><a href="https://www.airnow.gov/sites/default/files/2020-01/why-is-coco-orange-november-2019_1.pdf">https://www.airnow.gov/sites/default/files/2020-01/why-is-coco-orange-november-2019_1.pdf</a></p>
<b>GRADE 2</b>		
<b>Subject/Unit</b>	<b>Standard</b>	<b>Activity</b>
Science/Ecosystems: Interactions, Energy, and Dynamics Measurement	2-LS2-1 2.M.A.1	<p>Students will learn that they can use the sundial to find out which direction is north by looking at the sun's shadow at noon.</p> <p><a href="https://cms-tc.pbskids.org/global/NatureCat_Printable_Sundial_FINAL.pdf">https://cms-tc.pbskids.org/global/NatureCat_Printable_Sundial_FINAL.pdf</a></p>
Math - Climate Change	2.DL.B.3	<p>Students will listen to the story <i>Kobee Manatee: Climate Change and The Great Blue Hole Hazard</i> and create a table to record how many sea creatures and pieces of plastic appear in each spread of <i>Kobee Manatee: Climate Change and The Great Blue Hole</i></p>

		<p>Hazard.</p> <p><a href="https://www.kobeemanatee.com/wp-content/uploads/2022/01/KM4-Teachers-Guide.pdf">https://www.kobeemanatee.com/wp-content/uploads/2022/01/KM4-Teachers-Guide.pdf</a></p>
Physical Education	2.1.2.CHSS.4 2.1.2.PGD.1 2.2.2.PF.1	<p>Students will play the game, For the Common Good. Students play a game where cooperative decisions about renewable resources must be made if all are to benefit. The game reinforces the concept that cooperation, rather than selfishness, brings more long-term benefits to society.</p>
Reading  Science Engineering and Design	RI.2.1 K-2-ETS1-1	<p>Students will learn about making energy from moving water.</p> <p>Book:  <a href="https://www.getepic.com/book/82302882/earths-energy-resources-water-energy?utm_source=t2t&amp;utm_medium=link&amp;utm_campaign=content&amp;share=30470032694">https://www.getepic.com/book/82302882/earths-energy-resources-water-energy?utm_source=t2t&amp;utm_medium=link&amp;utm_campaign=content&amp;share=30470032694</a></p>
Math - Climate Change	2.DL.A.1	<p>Students will watch a video to learn how NASA tracks the changes in climate and why it matters. Students will develop an important sense of why data (in this case, gathered by satellites) is helping all of us monitor sea levels and clouds, and to know that the earth's climate is getting warmer.</p> <p><a href="https://climatekids.nasa.gov/weather-climate/">https://climatekids.nasa.gov/weather-climate/</a></p>
Reading Visual Arts Science/ Ecosystems: Interactions, Energy, and Dynamics	RI.1.6 1.5.5.Cr1a 2-LS2-2	<p>Students will learn about threats to mangroves, mangrove forests' essential role in solving the climate crisis, and how to help protect this valuable ecosystem.</p> <p><a href="https://drive.google.com/drive/folders/17enSegQVxS7mv9zrAh8qDVzNpaTkb8vO">https://drive.google.com/drive/folders/17enSegQVxS7mv9zrAh8qDVzNpaTkb8vO</a></p>
Science/Ecosystems: Interactions, Energy, and Dynamics Speaking and Listening	SL.2.1. 2-LS2-2	<p>Students will create a web of life using yarn to see how the world is interconnected.</p>
Math - Climate Change	2.OA.A.1	<p>Students will make sense of the idea that plants need water and light to grow and that climate change affects the health of plants, animals, and people. In this unit, there would be an opportunity to measure variables and use the data to add and subtract within 100.</p>
Writing Speaking & Listening	W.2.2.	<p>Students write a letter to a community leader explaining what humans could do to help animals</p>

	SL.2.1.	<p>adapt to change.</p> <p><a href="https://docs.google.com/document/d/1qk1jzq8h8GsnMm_WKoQdUgR4Nr-d1UQqrCkLNw3XQ-Q/view">https://docs.google.com/document/d/1qk1jzq8h8GsnMm_WKoQdUgR4Nr-d1UQqrCkLNw3XQ-Q/view</a></p>
Engineering and Design	K-2-ETS1-3	<p>Students design and test a vehicle inspired by animal and plant features.</p> <p>Students will learn how different species are adept at moving in their environments.</p> <p><a href="https://pbskids.org/elinor/games/aris-wonderful-ideas">https://pbskids.org/elinor/games/aris-wonderful-ideas</a></p>
Math - Climate Change	2.MD.B.5	<p>Students will measure the lengths of different plants to solve a word problem that is based on an investigation where they make sense of the idea that plants need water and light to grow and how climate change affects the health of plants, animals and people.</p>
Social Studies	6.1.2.Geo.HE.1:	<p>Students will learn about the many ways humans influence the four major Earth systems: the geosphere, hydrosphere, biosphere, and atmosphere.</p> <p><a href="https://thewonderofscience.com/videos/2017/12/10/ess3c-human-impacts-on-earth-systems">https://thewonderofscience.com/videos/2017/12/10/ess3c-human-impacts-on-earth-systems</a></p>
Social Studies World Language	6.1.2.Geo.HE.1: 7.1.NL.IPRET.4	<p>Students create postcards in Spanish showing how they will protect Earth's climate.</p> <p><a href="https://docs.google.com/presentation/d/12DpTepdwoyrg-I7JuiuMtkGD5j1AojWNQpl9eP9q3O0/view#slide=id.ge57b5fd4aa_0_0">https://docs.google.com/presentation/d/12DpTepdwoyrg-I7JuiuMtkGD5j1AojWNQpl9eP9q3O0/view#slide=id.ge57b5fd4aa_0_0</a></p>
Math - Climate Change	2.DL.B.3	<p>Suggestion from Proposed Standards Document:</p> <p>Students will make sense of the idea that climate change affects the health of plants, animals and people, and may draw a picture graph or a bar graph (with single-unit scale) to represent a data set using information presented in the bar graph.</p>
Art Science/ Engineering and Design	1.2.2.Cr1a K-2-ETS1-1	<p>Students will use metal cans or old shoes to create a plant holder.</p>
Reading Writing Speaking & Listening	RI.2.1 W.2.2. SL.2.2	<p>Students will learn about what good citizenship looks like in many contexts, brainstorm ways they can be good citizens, complete grade-appropriate activities, and craft an argument about being a global citizen.</p>

		<a href="https://c3teachers.org/wp-content/uploads/2015/06/NewYork_1_GlobalCitizen.pdf">https://c3teachers.org/wp-content/uploads/2015/06/NewYork_1_GlobalCitizen.pdf</a>
Science/ Engineering and Design Computer Science and Design Thinking	K-2-ETS1-1 8.2.2.ED.2	Students will upcycle a t-shirt to make coasters.
Speaking & Listening	SL.2.1.	Students will sort images into needs and wants, brainstorm ways to meet their needs, and think about what happens when there isn't enough to meet everyone's needs or wants.
Computer Science & Design Thinking	8.2.2.ED.2: 8.2.2.ED.3 8.2.2.ITH.5	Students work collaboratively to design and create a solution to one of the problems sea turtles are facing today.  Slideshow: <a href="https://docs.google.com/presentation/d/1t1mHfUWM4HsrWvOi3zL3EDbU2imZJWylEskBn5mCRk/view">https://docs.google.com/presentation/d/1t1mHfUWM4HsrWvOi3zL3EDbU2imZJWylEskBn5mCRk/view</a>  Engineering Log: <a href="https://docs.google.com/document/d/1T9C8ePdhwuKsLP8LLWBXCzg4IM7UJwvnawN4Lg6p5so/view">https://docs.google.com/document/d/1T9C8ePdhwuKsLP8LLWBXCzg4IM7UJwvnawN4Lg6p5so/view</a>
Visual Arts  Science/ Ecosystems: Interactions, Energy, and Dynamics	1.5.5.Re7b: 1.5.8.Re7a 2-LS4-1	Students read the artist's statement, which explains that the mural should inspire viewers to think about how pollution and waste will impact future generations.  Mural: <a href="https://seawalls.org/mural/recycling-kingdom/">https://seawalls.org/mural/recycling-kingdom/</a>
Math	2.DL.B.3 2.DL.B.4	Students create their own classroom garden from common items found at school and in their kitchens and predict and measure plant growth.  Slideshow: <a href="https://docs.google.com/presentation/d/1tofU4DcXjfs6TuLQh1n_o6afhcgexEDlb8Q8aemMm1Q/view">https://docs.google.com/presentation/d/1tofU4DcXjfs6TuLQh1n_o6afhcgexEDlb8Q8aemMm1Q/view</a>
Science/ Ecosystems: Interactions, Energy, and Dynamics	2-LS4-1	Students will learn about the water cycle, water pollution, and ways that they can keep the water clean.  <a href="https://www.nj.gov/dep/seeds/docs/CWRAActivityBook.pdf">https://www.nj.gov/dep/seeds/docs/CWRAActivityBook.pdf</a>
Science/ Ecosystems: Interactions, Energy, and Dynamics	2-LS4-1	Students will learn about plastic waste and how they can reduce their family's plastic footprint.  <a href="https://environmentamerica.org/sites/environment/files/resources/Myrtle%20Curriculum%20%28combined%20pdfs%29.pdf">https://environmentamerica.org/sites/environment/files/resources/Myrtle%20Curriculum%20%28combined%20pdfs%29.pdf</a>

GRADE 3		
Subject/Unit	Standard	Activity
Physical Education	2.2.5.MSC.1 2.2.5.MSC.3	Social Hierarchy This activity explores the value of individuals and their respective roles in contributing to the well-being of each other and the success of a community. <a href="https://www.neefusa.org/education/environmental-education-group-games-activities">https://www.neefusa.org/education/environmental-education-group-games-activities</a>
Science Biological Evolution: Unity and Diversity	3-LS4-1	<a href="#">Nature Road Trip</a> Students plan an interactive game, students will play a digital board game in which they spin a spinner and take turns exploring different United States National Parks. Stops throughout the game feature short educational videos and mini-games about national parks
Science	3-LS4-3	This interactive map and citizen science project allows students to document and examine photos of New Jersey's rivers, estuaries, bays, and coastline. The site allows for participants to explore other photo submissions and submit their own photos of places they love in their own communities. <a href="https://mycoast.org/nj/love">https://mycoast.org/nj/love</a>
9.4 Life Literacies and Key Skills Speaking and Listening	9.4.5.CI.1 SL.3.4.	<a href="#">School Hydration Stations</a> Students can create posters and a school action to promote reusable bottles vs recyclable bottles
Math- Climate Change	3.DL.B.3	<a href="#">LEAF</a> This National Wildlife Federation activity walks students through identifying trees in their area, determining the amount of carbon dioxide they sequester, and assessing their environmental importance as habitat and flood mitigation "machines."
Math - Climate Change	3.OA.A.3	This activity gets children to think about where their water comes from and the amount they use in a typical day. They will use multiplication to help them figure out the amounts used. Children will reflect on the effects of climate change and why water conservation is important. <a href="https://ecosystems.psu.edu/outreach/youth/sftrc/lesson-plans/water/k-5/conservation">https://ecosystems.psu.edu/outreach/youth/sftrc/lesson-plans/water/k-5/conservation</a>
Math - Climate Change	3.OA.D.8	Students will record and represent weather and climate data about a particular region of the world and use it as the basis two-step word problems using the four operations.

		<a href="https://www.climateypesforkids.com/">https://www.climateypesforkids.com/</a>
Math - climate change	3.DL.A.1	<p>Read “Just a Dream” by Chris Van Allsburg and discuss pollution and recycling. Students then develop data-based questions related to recycling (either at home or in school) and decide what data will answer the question.</p> <p><a href="#">Just a Dream by Chris Van Allsburg Read Aloud - YouTube</a></p>
Math - climate change	3.M.C.6	<p>Read about an animal (one of the animals listed in the attached activity) to see how it has been affected by climate change. Then, complete the sheet to determine which enclosure would work for each specific animal (based on its perimeter).</p> <p><a href="#">Animal Information</a></p> <p><a href="#">Perimeter Activity</a></p>
Speaking and Listening	SL.3.4	<p>This resource outlines the steps students can take to implement a school-wide "Walk and Roll Day" to encourage students and faculty to get to school by biking, taking public transportation, walking, or carpooling.</p>
Science	3-ESS2-1	<p>In this lesson plan students will read about the plants and animals that live in terrestrial biomes. Students will complete a color-by-number to discover where the biomes are located on a world map.</p> <p><a href="#">Biome Bonanza</a></p>
Reading Science	RI.3.10 3-ESS2-1	<p>The students read the book <i>Sven's Search for Clean Energy</i> and discuss three possible solutions to the energy</p> <p><a href="https://climatescience.org/books/svens-search-for-clean-energy">https://climatescience.org/books/svens-search-for-clean-energy</a></p>
Science	3-PS3-4	<p>This activity from the US Department of Energy teaches students about solar ovens and provides instructions on building a simple solar cooker.</p> <p><a href="#">Solar Oven</a></p>
Art	1.5.5.Re7b:	<p>This resource contains a triptych (3 painting series) by Jill Pelto in response to overfishing, bycatch, and climate change in the Antarctic.</p> <p><a href="https://www.jillpelto.com/antarctic-reserves">https://www.jillpelto.com/antarctic-reserves</a></p>

Science	3-ESS2-1	An understanding that human activity negatively impacts the Earth. <a href="https://climatekids.nasa.gov/greenhouse-cards/">https://climatekids.nasa.gov/greenhouse-cards/</a>
Art	1.5.5.Re7b	This resource is a watercolor painting inspired by the field sketches and experience of artist and scientist Jill Pelto when she was working on North Cascade glaciers in Washington with the North Cascade Glacier Climate Project. <a href="https://www.jillpelto.com/crevasse-depth">https://www.jillpelto.com/crevasse-depth</a>
Language Arts	NJSLS.RL.3.2	<u>Smoky Night</u> by Eve Bunting deals with the Los Angeles riots. Students consider global and local citizenship as well as healthy ways to make changes to improve the world.
Language Arts	NJSLS.RI.3.3 D	<u>Appalachia: The Voices of Sleeping Birds</u> by Cynthia Ryland deals with a strong sense of place and encourages cultural preservation and an understanding of multiple perspectives.
Language Arts Social Studies	NJSLS.SL.3.1. E 6.1.4.A.1 E	<u>Shiver, Gobble, and Snore</u> by Maria Winn is a mentor text students will use to understand and develop sustainable classroom goals while understanding responsible local citizenship. Activity: After reading the mentor text, Gobble, Shiver, and Snore have students make a list of rules and laws that promote a positive classroom using information from the story.
Language Arts Career Ready Practice	NJSLS.RL.3.3 ‘ 9.2.4.A.2	Identify various life roles and civic and work-related activities in the school, home, and community. Describe the characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the plot. Activity: Students will read an independent book and write in reader’s notebooks about how a character in a story solved personal or community problems.
Social Studies Language Arts	6.1.4.D.19 NJSLS.RI 3.9	Explain how experiences and events may be interpreted differently by people with different cultural or individual perspectives. Compare and contrast the most important points and key details presented in two texts on the same topic. Activity: Students will compare and contrast the cultural differences of two stories, such as The Name Jar and My Name is Yoon by creating a Venn diagram.

Career Ready Practice Language Arts	CRP1 NJSLS.SL.3.1	<p>Act as a responsible and contributing citizen and employee.</p> <p>Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.</p> <p>Activity: Students will read Time for Kids article on animals becoming extinct and discuss what scientists are doing to save them and ways humans can also help these animals.</p>
Career Ready Practice Language Arts	CRP8 NJSLS.W.3.7	<p>Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>Conduct short research projects that build knowledge about a topic.</p> <p>Activity: Students will use the research from one of their published works to define a problem apparent in their topic area and suggest possible solutions.</p>
Career Ready Practice Language Arts	9.2.4.A.3 NJSLS.W.3.4	<p>Investigate both traditional and nontraditional careers and relate information to personal likes and dislikes.</p> <p>With guidance and support from adults, produce writing in which the development and organization are appropriate to the task and purpose.</p> <p>Activity Students will discuss and write about one profession that is a valuable resource in protecting our Earth.</p>
Science Language Arts	Science 3-ESS3-1 NJSLS.W.3.10	<p>Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.</p> <p>Write routinely over extended time frames (time for research, reflection, metacognition/self-correction and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.</p> <p>Activity: In one of their fairy tale drafts, students will include information regarding a weather-related hazard and a claim about a solution for that hazard in their setting and/or plot.</p>
<b>GRADE 4</b>		
<b>Subject/Unit</b>	<b>Standard</b>	<b>Activity</b>
Math- Fractions	4.NF.B.3.D	<a href="#">Earth: Apple of our Eye</a> This lesson plan on food production and agriculture includes instructions for a demonstration, which uses an apple to show students the small fraction of Earth's land that can be used for farming.

Science	4-LS1-1	How to use ideas from nature to adapt things in our lives. <a href="https://pbskids.org/elinor/games/aris-wonderful-ideas">https://pbskids.org/elinor/games/aris-wonderful-ideas</a>
Science	4-ESS2-1	Students can read or listen to the story and discuss the climate and how it impacts ocean life. <a href="#">Adesh's Deep Sea Dive</a>
Math - climate change	4.M.A.2	This resource is a searchable database with images, graphs, and interactive maps that provide detailed information about nearly 150,000 species. Students are able to search or browse for their favorite plants and animals and learn about their current status, taxonomy, geographic range, habitat, threats they face, population trends if they are used or traded by humans, conservation actions (if applicable), and vulnerability to extinction. <a href="https://www.iucnredlist.org/">https://www.iucnredlist.org/</a>
Math	4.NBT.B.6	In this math activity, students will solve equations that correspond with a greenhouse gas source and then rank the sources from least emissions to most emissions. <a href="#">Order by Size</a>
Math - climate change	4.DL.B.5	This interactive resource from NASA provides satellite imagery and data displayed on a 3D animated image of the Earth. It provides information such as air temperature, carbon dioxide, sea level, soil moisture, water vapor, and ozone. Students can select the data and date range they are interested in exploring. <a href="https://climate.nasa.gov/earth-now/#/">https://climate.nasa.gov/earth-now/#/</a>
Math - climate change	4.DL.A.4	In this activity, students will fill out an energy audit to assess how much energy they use at home. Together, they will compile their data and use it to create questions, answer questions about the energy that they have, and can create ways to show the data they have collected. <a href="https://sharemylesson.com/teaching-resource/energy-audit-253982">https://sharemylesson.com/teaching-resource/energy-audit-253982</a>
Science	4-ESS2-1	Students learn the process of carbon sequestration and how best to plant trees to help the environment. <a href="#">Planting Trees</a>
Science	4-ESS3-1	This simple online calculator by Harvard University provides an easy way to calculate the carbon, nitrogen, and water footprints of your diet.

		<p>The results page provides relatable context for the footprints and provides the upper limit of per capita carbon emissions to avoid a climate disaster.</p> <p><a href="#">Footprint Calculator</a></p>
Science Speaking and Listening	4-ESS3-1 SL.4.1.	<p>Students respond to questions about how they live and create artwork about their carbon footprint.</p> <p><a href="#">Color Your Carbon Footprint</a></p>
Science	4-ESS3-2	<p>Students use an interactive map and the citizen science project allows students to document and examine photos of New Jersey's rivers, estuaries, bays, and coastline.</p> <p>The site allows for participants to explore other photo submissions and submit their own photos of places they love in their own communities.</p> <p><a href="https://mycoast.org/nj/love">https://mycoast.org/nj/love</a></p>
Science 9.4 Life Literacies and Key Skills	4-ESS3-1 9.4.5.Cl.2	<p>This video shows how a 9-year-old German boy named Felix started a foundation called Plant for the Planet to educate people about climate justice and the importance of planting trees to sequester carbon.</p> <p>Students will learn how Felix started the foundation and how it grew into something much bigger than he anticipated.</p> <p><a href="https://cleanet.org/resources/43160.html">https://cleanet.org/resources/43160.html</a></p>
Art	1.5.5.Re7b	<p>This is a watercolor and colored pencil piece by scientist and artist Jill Pelto made with paper, magazines, and natural materials such as leaves.</p> <p>Students can learn about the importance of living sustainably and about the emotional impacts of destroying nature.</p> <p><a href="https://www.jillpelto.com/take-a-lesson-from-nature">https://www.jillpelto.com/take-a-lesson-from-nature</a></p>
Language Arts	RI.4.7	<p><a href="#">The Phoenix Zoo saves the Arabian Oryx</a> This is a model of responsible local citizenship and is a mentor text for a conversation about further ways to support the environment on a local level.</p>
Language Arts	RI.4.1	<p><a href="#">Cactus Hotel</a> by Brenda Guiberson is a mentor text that deals with the dynamics of systems and change, as one environment is used by a succession of different life forms as a home.</p>
Language Arts	RL.4.3	<p><a href="#">Fly Away Home</a> by Eve Bunting guides students to support responsible local and global citizenship while developing a strong sense of place by understanding and supporting the migration patterns of Canada geese.</p>
Social Studies	SS 6.1.4.D.19	<p>Novel of Student Choice: Explain how experiences and</p>

		events may be interpreted differently by people with different cultural or individual perspectives. Activity: Complete a graphic organizer with evidence of different character perspectives in the novel. This supports the goal of Multiple Perspectives.
Social Studies	SS 6.1.4.A.3	Mentor Novel: Determine how “fairness,” “equality,” and the “common good” have influenced new laws and policies over time at the local and national levels of the United States government. Activity: In small groups, discuss how the social issues found in the novel have influenced new laws and policies overtime at the local and national levels of the US government. This supports both the sustainability goals of Systems & Change and Inventing and Affecting the Future.
Language Arts	RL.4.2	<u>All the Places to Love</u> by Patricia MacLachlan is a mentor text students will use to understand a character’s strong sense of place and then to express their own sense of belonging linked to a local sense of place.
Language Arts	SL.4.3	<u>Change the World for Ten Bucks</u> , published by Chronicle Books, is a text students will use to consider and advocate ways to improve their world. They will also use the mentor text <u>101 Ways You Can Save the Planet Before You’re 12</u> by Joanne O’Sullivan to report on an effective way to act locally and improve sustainability.
Social Studies	SS 6.1.4.A.12 E	Explain the process of creating change at the local, state, or national level. Activity: Flash draft a story about a character who creates change at the local, state, or national level.
Social Studies and Language Arts	CRP5	Consider the environmental, social, and economic impacts of decisions. Activity: In small groups, discuss how individuals make decisions that positively impact and/or mitigate the negative impacts on other people, organizations, and the environment and use what is shared as possible ideas for writing stories.
Social Studies	SS 6.1.4.D.16	Describe how stereotyping and prejudice can lead to conflict, using examples from the past and present. This will help with the sustainability goal of Multiple Perspectives. Activity: Discuss how stereotyping and prejudice create conflict in the novel or reading passage and cite examples.
<b>GRADE 5</b>		
<b>Subject/Unit</b>	<b>Standard</b>	<b>Activity</b>
Math	5.DL.B.5	This tree-cutting simulation game will allow students to observe how the starting population size of trees in a

	5.G.A.2	forest and deforestation rates affect the forest population over time. <a href="https://njclimateeducation.org/resource/timber">https://njclimateeducation.org/resource/timber</a>
Science Reading	5-ESS3-1 RI.5.7.	This digital picture book follows Semih and his family as they flee their Turkish village because of a prolonged drought. After arriving in the tent city, Semih meets a nurse who explains how climate change affects people around the world. Students will learn that, like Semih, they can raise awareness about climate change in their communities <a href="https://njclimateeducation.org/resource/semihs-search-for-a-healthy-home">https://njclimateeducation.org/resource/semihs-search-for-a-healthy-home</a>
Math	5.NBT.A.1 5.NBT.A.2	Through a TED-Ed students will learn how to visualize one part per million and what that means. <a href="#">Parts Per Million</a>
Art	1.5.5.Re7b	Students analyze an art piece that shows the changing climate <a href="https://njclimateeducation.org/resource/landscape-of-change">https://njclimateeducation.org/resource/landscape-of-change</a>
Math - climate change	5.NF.B.3	Students will learn about the changes in sea level caused by climate change. Use the chart and convert decimals to fractions. Then use the fractions to write statements and create questions related to the change in sea level.  <a href="https://scied.ucar.edu/learning-zone/climate-change-impacts/rising-sea-level">https://scied.ucar.edu/learning-zone/climate-change-impacts/rising-sea-level</a>
Math - climate change	5.G.A.2	This activity allows students to compare average temperatures in NJ across the years by creating graphs using the data from the following site -  <a href="https://climate.rutgers.edu/stateclim_v1/nclimdiv/index.php?stn=NJ00&amp;elem=avgt">https://climate.rutgers.edu/stateclim_v1/nclimdiv/index.php?stn=NJ00&amp;elem=avgt</a>
Math - climate change	5.DL.A.4	Students record how much water they are using for a week. Share results with the class. In small groups, students choose the best way to show and analyze the data they collected (line plots, graphs etc.)  <a href="https://www.teachengineering.org/activities/view/cub_d_ams_lesson01_activity1">https://www.teachengineering.org/activities/view/cub_d_ams_lesson01_activity1</a>
Physical Education	2.2.5.MSC.3	Students simulate migration What happens to a species that can no longer complete its annual migration? <a href="#">Migration hopscotch</a>

Math	5.OA.A.1	<p>This activity provides an introduction to the concept of greenhouse gas emissions. Students use their division and multiplication skills to calculate the impact of several common practices</p> <p><a href="https://climatescience.org/schools/count-the-trees-9-11?curr=1311095d-33cd-46ea-95a3-bad2e1ee4702">https://climatescience.org/schools/count-the-trees-9-11?curr=1311095d-33cd-46ea-95a3-bad2e1ee4702</a></p>
Math	5.DL.B.5	<p>In this task, students will investigate a data set that includes measurements in fractions of a unit. After planting a row of evergreens last Spring, the tree farmer goes out to record the growth of each tree, measured in feet. Students will be asked to display the height of all 10 trees using a graph of their choice. They will be asked to justify their choice of graph. Students will be asked to determine the difference in height between the tallest and shortest tree.</p> <p><a href="https://learn.makemathmoments.com/task/evergreen/">https://learn.makemathmoments.com/task/evergreen/</a></p>
Science	5-ESS3-1 5-ESS2-1	<p>This story is about Fabienne, a girl in Haiti who experiences a powerful hurricane.</p> <p>The narrative is accompanied by a fair bit of explanatory text, including the difference between weather and climate and how climate change makes extreme weather worse</p> <p><a href="https://climatescience.org/books/fabiennes-wild-weather-adventure">https://climatescience.org/books/fabiennes-wild-weather-adventure</a></p>
Math - Climate Change	5.G.A.2	<p><a href="#">LEAF</a></p> <p>This National Wildlife Federation activity walks students through identifying trees in their area, determining the amount of carbon dioxide they sequester, and assessing their environmental importance as habitat and flood mitigation "machines."</p>
Science Reading	5-ESS2-1 RI.5.7	<p>This lesson plan includes a story and role-playing activity that show how population growth and urbanization affect rivers and other parts of the environment.</p> <p><a href="#">Who Polluted the River?</a></p>
Science	5-ESS2-1	<p>Students will learn that people have damaged the environment and that people can work together to rebuild it.</p> <p><a href="#">What Happened When We All Stopped?</a></p>
Science Reading	5-ESS2-1 RI.5.7	<p>Through an interactive story, students explore how everything in the natural community is interconnected.</p> <p><a href="#">Web of Life</a></p>
Social Studies	6.1.8.D.1.a	<p>Compare and contrast gender roles, religion, values, cultural practices, and political systems of Native American groups. (Multiple Perspectives)</p> <p>Activity: Use a graphic organizer to show cultural</p>

		practices across different Native American tribes as described in a read-aloud, free choice, or book club book.
Science	5-LS2-1	Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. Activity: Draw a character for a fantasy story that describes the traits of the characters within a particular ecosystem.
Career Ready Practice	9.2.8.B.4	Career Awareness, Exploration, and Preparation: Evaluate how traditional and nontraditional careers have evolved regionally, nationally, and globally. Activity: As students read and write fantasy texts, discuss how the career of an author has evolved.
Social Studies	6.1.8.D.3.e	Examine the roles and perspectives of various socioeconomic groups (e.g., rural farmers, urban craftsmen, northern merchants, and southern planters), African Americans, and women during the American Revolution, and determine how these groups were impacted by the war.  Activity: Use different examples of poetry from the American Revolution to determine different perspectives and use the information gained to write poetry
Social Studies	6.1.8.D.2.a	Analyze the power struggle among European countries, and determine its impact on people living in Europe and the Americas.  Activity: Use a graphic organizer to track power struggles in historical fiction texts.
Social Studies	6.1.8.A.2.a	Determine the roles of religious freedom and participatory government in various North American colonies. Activity: Share a feature article related to the above topic.
Social Studies	6.1.8.A.3.g	Evaluate the impact of the Constitution and Bill of Rights on current-day issues. Activity: Evaluate how the Constitution, and the principles it represents, have impacted a chosen research topic.
Language Arts	RI.5.6	Is Chocolate Milk healthy?--Healthy commons Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.
Language Arts	RI.5.6	Are zoos good for animals and the environment?-Ecological Principles

		Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.
<b>GRADE 6</b>		
<b>Subject/Unit</b>	<b>Standard</b>	<b>Activity</b>
Science Earth Science Space Systems	MS.ESS1: Earth's Place in the Universe	Students use 3D models, daylight/darkness and temperature data, and Seasons Gizmo to explain seasonal variations around the globe and analyze the district's solar panel data and make connections to the different seasons along with class discussion.
Science Chemistry	MS.PS1: Matter and Its Interactions	Students compare and contrast the atomic composition of gas molecules to observe the effects of climate change (e.g. carbon dioxide, methane, water vapor, CFC's) Students will also participate in class/group discussion.
Science Energy	MS.PS3: Energy	Energy Conversion Gizmo - Students use the simulation to explore sources of clean energy and renewable resources. The students will independently answer questions related to the simulation as they explore it. Students will then participate in a class discussion to discuss the energy sources they explored and the impacts those sources would have on the environment.
Innovation and Design Electric Vehicles	<ul style="list-style-type: none"> <li>• 8.2.8.ITH.2 Interactions of Technology and Humans</li> <li>• 8.2.8.ITH.4 Interactions of Technology and Humans</li> </ul>	Students learn about the environmental impacts of fossil fuels and how electric and hybrid vehicles offer an alternative to combustion engines. <a href="https://fueleconomy.gov/">https://fueleconomy.gov/</a> Webquest
Innovation and Design Environmentally Friendly House	8.2.8.ITH.5: Compare the impacts of Technology over time	Students will learn what it means to build green. Students will take notes on biomimicry, NetZero, and sustainable living. They will then create three-dimensional models such as a rain barrel, rain gardens, and living walls to scale in Google SketchUp.
Math Ratios and Rates	Ratios and Proportional Relationships Math 6 – 6.RP.A.3: Math 6A – 7.RP.A.:	Students solve problems based on real-world data. These results are then used to compare different unit rates to inform decision-making.  EX) Up-to-date data on climate change, ecosystems, and/ or economic impacts of sustainability will be solved as a class or independently.
Math Data Displays	Statistics and Probability Math 6 –	Students research data on sustainability and create/ analyze this data on various data displays.

	6.SP.B.4 Math 6 A – 7.SP.A.2	EX) Students research topics from a list of choices and create data displays including box-and-whisker plots, histograms, bar graphs, etc.
Math Probability & Statistics	Statistics and Probability Math 6 – 6.SP.B.5.C Math 6A – 7.SP.C.8.C	Students analyze sustainability data and describe the data by its measures of center. (Math 6A – Students then use this data to predict future trends). EX) Students keep track of the number of bottles/can they recycle in a week. This data would be shared with the class for analysis.
Math	6.SP.B.5.C	<a href="#">LEAF</a> This National Wildlife Federation activity walks students through identifying trees in their area, determining the amount of carbon dioxide they sequester, and assessing their environmental importance as habitat and flood mitigation "machines."
Math	6.SP.B.5.C	This simple online calculator by Harvard University provides an easy way to calculate the carbon, nitrogen, and water footprints of your diet. The results page provides relatable context for the footprints and provides the upper limit of per capita carbon emissions to avoid a climate disaster. <a href="#">Footprint Calculator</a>
Math- Climate Change Expressions and Equations	6.EE.B.7	Temperature Graphing Activity: Gather temperature data from various altitudes. Organize the temperature data along with their corresponding altitudes in a table or spreadsheet format. Use a graphing tool or software to create a scatter plot or line graph with altitude on the x-axis and temperature on the y-axis. Ask students to analyze the graph and draw conclusions. Engage students in a discussion about the relationship between altitude and temperature.  <a href="https://www.ncei.noaa.gov/h">https://www.ncei.noaa.gov/h</a> <a href="http://www.njweather.org/">http://www.njweather.org/</a> <a href="https://www.ncdc.noaa.gov/cdo-web/">https://www.ncdc.noaa.gov/cdo-web/</a>
Math-Climate Change Expressions and Equations	6.EE.C.9	Provide the students with historical data on greenhouse gas emissions (e.g., carbon dioxide, methane) and global temperature rise. Instruct students to create a line graph with the independent variable (e.g., years) on the x-axis and the dependent variable (e.g., greenhouse gas emissions or global temperature rise) on the y-axis. Ask students to analyze the graph and identify any patterns or trends

		<p>they observe. Discuss the relationship between greenhouse gas emissions and global temperature rise. Help students understand that greenhouse gas emissions act as the independent variable, while global temperature rise is the dependent variable.</p> <p><a href="https://www.ipcc.ch/">https://www.ipcc.ch/</a>  <a href="https://climate.nasa.gov/">https://climate.nasa.gov/</a></p>
Math-Climate Change Statistics and Probability	6.SP.B.4	<p>Students will develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.</p> <p><a href="#">Unequal Heating and Rotation of the Earth</a></p>
Science	MS-ESS2-1 MS-ESS3-1	<p>This interactive resource from NASA provides satellite imagery and data displayed on a 3D animated image of the Earth.</p> <p>It provides information such as air temperature, carbon dioxide, sea level, soil moisture, water vapor, and ozone.</p> <p>Students can select the data and date range they are interested in exploring.</p> <p><a href="https://climate.nasa.gov/earth-now/#/">https://climate.nasa.gov/earth-now/#/</a></p>
Social Studies Literacy	RI.6.1, RI.6.5, RI.6.5 6.3.8.EconET.1	<p>Students create their own comic strip about possible solutions to climate change.</p> <p><a href="#">Climate Comic Strip</a></p>
Art	1.5.8.Cn11a	<p>Students can be challenged to represent other climate change risks they identify in their community in the form of art.</p> <p><a href="https://njclimateeducation.org/resource/measuring-crevasse-depth">https://njclimateeducation.org/resource/measuring-crevasse-depth</a></p>
Science	MS-LS2-4, MS-LS2-5	<p>This video introduces students to ecosystems, disruptions to ecosystems, biodiversity, and the concept of resiliency, providing a number of specific examples.</p> <p><a href="https://thewonderofscience.com/videos/2017/12/10/ls2-c-ecosystem-dynamics-functioning-and-resilience">https://thewonderofscience.com/videos/2017/12/10/ls2-c-ecosystem-dynamics-functioning-and-resilience</a></p>
Science writing	MS-LS2-1	<p>Students will learn about where, how, and why food waste causes greenhouse gas emissions. Students will also learn the ways that we can help reduce food</p>

		waste and also provide more food to people in need. This short video resource displays text, images, and video clips describing the huge amount of greenhouse gases emitted from food waste. <a href="#">Food Waste</a>
Reading Social Studies	RI.6.3 6.3.8. EconET.1:	In this lesson students will learn about Jayden, an Indigenous climate activist from Louisiana, describing the impacts of flooding due to climate change on her home and family. Jayden discusses the challenges in rehabilitating her home after flood damage and the continued anxiety of a flooding event occurring again. The case of Juliana v. U.S. is discussed, which is a climate change lawsuit brought by the youth of America against the U.S. government <a href="https://www.ourclimatevoices.org/2018/jadydenfoytlin">https://www.ourclimatevoices.org/2018/jadydenfoytlin</a>
Writing	W.6.1.	In this media literacy activity, students will analyze six climate change-related editorial cartoons and discuss how each cartoon conveys a different message <a href="#">Climate Cartoon</a>
Health	2.2.8.N.1 2.2.8.N.3	In this lesson, students examine the nutritional value and environmental impact of non-dairy alternatives as a replacement to traditional dairy. <a href="#">Is Non- Dairy the Future</a>
Art	1.5.8.Cr1a	Students can upcycle various materials to create art. <a href="https://njclimateeducation.org/resource/at-home-upcycle-projects-from-climate-superstar">https://njclimateeducation.org/resource/at-home-upcycle-projects-from-climate-superstar</a>

## GRADE 7

Subject/Unit	Standard	Activity
Science Cells	MS.LS1: From Molecules to Organisms	Gather and assess information (from interviews and readings) regarding how and why people raise chickens as opposed to buying store bought eggs.
Science Ecosystems	MS.LS2: Ecosystems, Interactions, Energy, and Dynamics	Apply ideas about ways of growing food on a farm to design a better way to use the land to minimize human impact on orangutan populations
Science Matter Cycling and Energy Flow	MS.LS2: Ecosystems, Interactions, Energy, and Dynamics	Develop a model to show the cycling of matter and the flow of energy through an ecosystem
Science Genetics	MS.LS3: Heredity:	Gather and assess information to run a simulation of genetic engineering on a bird farm to selectively breed

	Inheritance and Variations of Traits	birds with specific traits.
Math Percents of Increase and Decrease	Ratios and Proportional Relationships 7.RP.A.3	Students will explore percent increase and decrease by examining the impact of dams on a salmon population.
Math Surface Area and Volume	Geometry 7.G.B.6	Students will explore surface area and volume to minimize packaging materials.
Math Statistics and Probability	Statistics and Probability 7.SP.B.3	Students will use the data from the district's solar kiosk to find measures of center
Math Statistics and Probability	Statistics and Probability 7.SP.B.4	Students will use the data from the district's solar kiosk to make inferences from the measures of center
Math-Climate Change The Number System	The Number System 7.NS.3	Students will solve mathematical problems based on quantitative data related to the five main contributors to climate change. <a href="#">Activity Description/Steps</a> <a href="http://www.globalcarbonatlas.org/">http://www.globalcarbonatlas.org/</a> <a href="https://www.climatewatchdata.org/">https://www.climatewatchdata.org/</a> <a href="https://unfccc.int/">https://unfccc.int/</a>
Math-Climate Change Expressions and Equations	Expressions and Equations 7.EE.B.3	Students will solve multi-step real-life and mathematical problems using positive and negative rational numbers based on quantitative data related to the five main contributors to climate change. <a href="#">Activity Description/Steps</a> <a href="https://www.climatewatchdata.org/">https://www.climatewatchdata.org/</a> <a href="https://unfccc.int/">https://unfccc.int/</a>
Math-Climate Change Geometry	7.G.B.6	Students will solve multi-step real-life and mathematical problems involving angle measure, area, surface area, and volume using quantitative data related to the five main contributors to climate change. <a href="#">Activity Description/Steps</a> <a href="https://www.epa.gov">https://www.epa.gov</a> <a href="https://www.wri.org">https://www.wri.org</a>
Science	MS-ESS2-1 MS-ESS2-2	Students place pollution collection cards in and around the school to see how much air pollution exists in different locations and then use charcoal to help them visualize CO2 pollution. <a href="#">Catching Pollution</a>
Science Reading	MS-ESS2-1 MS-ESS2-2	Students will learn that people have damaged the environment and that people can work together to

	RI.6.5 RI.6.6	rebuild it. <a href="#">What Happened When We All Stopped</a>
Science Computer/ technology	MS-LS2-4	Students learn what an invasive species is and how they impact the ecosystems they invade. The goal is to "wrangle" invasive species before they take over an ecosystem; the challenge increases as the invading species multiply and food sources dwindle. <a href="#">Invaders Game</a>
Social studies Math	MS-ESS3-4 6.3.8.CivicsPI.3 7.EE.B.3	Students answer questions about their personal choices and living conditions, see the many ways their choices affect their ecological and carbon footprints, and adjust their answers to gain insight into the changes they could make to reduce their individual footprints. <a href="https://www.footprintcalculator.org/home/en">https://www.footprintcalculator.org/home/en</a>
Math	7.NS.A.3	Students will learn about the impact of individual food choices and the massive reductions in greenhouse gas emissions that could be achieved through changes in agriculture and increasing access to more sustainable alternatives.  <a href="#">Project Drawdown</a>
Math Science	7.RP.A.2 MS-LS2-1.	Students are able to search or browse for their favorite plants and animals and learn about their current status, taxonomy, geographic range, habitat, threats they face, population trends, if they are used or traded by humans, conservation actions (if applicable), and vulnerability to extinction. <a href="#">IUCN Red List</a>
Science	MS-ESS2-6	Students will have a deeper understanding of the greenhouse effect <a href="#">Greenhouse Effect</a>
Reading	RI.6.6 RI.6.4	Read the article to gain insight into 11 cities that are under threat of sinking and disappearing. <a href="#">11 Sinking Cities</a>
Math Social Studies	7.EE.A.1 6.3.8.CivicsPI.1 6.3.8.CivicsPI.3	This resource includes an interactive line graph that shows Greenhouse Gas Emissions according to the industrial sector, starting from 1990. The graph can be interacted with to show a global view or a regional view by countries or continents. <a href="https://ourworldindata.org/grapher/ghg-emissions-by-sector?country=~OWID_WRL">https://ourworldindata.org/grapher/ghg-emissions-by-sector?country=~OWID_WRL</a>

Art	1.5.8.Cn11a 1.5.8.Cr1b	Students can upcycle various materials to create art. <a href="https://njclimateeducation.org/resource/at-home-upcycle-projects-from-climate-superstar">https://njclimateeducation.org/resource/at-home-upcycle-projects-from-climate-superstar</a>
Science Computer/ Technology	MS-LS2-5 MS-ETS1-2	In this activity, students will design a plan to stabilize and enhance the tidal estuary of the Green Creek Watershed, where it meets the Delaware Bay. <a href="https://njclimateeducation.org/resource/ecological-design-challenge-cape-may-court-house">https://njclimateeducation.org/resource/ecological-design-challenge-cape-may-court-house</a>
<b>GRADE 8</b>		
<b>Subject/Unit</b>	<b>Standard</b>	<b>Activity</b>
Science Geology - Layers of the Earth & Plate Tectonics	MS.ESS2: Earth Systems	Create a model of convection currents within Earth to demonstrate energy transfer within Earth and how it continually impacts the geological impacts.
Science Evolution & Common Ancestry	MS.LS4: Biological Evolution: Unity and Diversity	Identify the pros & cons of gene-editing technology when artificially selecting traits.  Create & analyze charts, cladograms & phylogenetic trees to determine common ancestry.
Science Weather & Climate	MS.ESS2: Earth Systems	Identify the components of new technology like cell phones/car batteries. For each component, identify the raw materials needed and how it is mined/production process. Include cost/benefits of issues: economic, political, social, and cultural issues.  Collect and analyze data for personal water footprint & food miles of typical meals and propose probable choices and changes in one's life.
Algebra Graphing linear equations	A.REI.D: Reasoning with Equations and Inequalities	Graph linear equations given real-world situations involving population, waste, pollution, etc.
Math & Algebra Writing linear equations	8.EE.5. 8.EE.6.:Expressions and Equations A.CED.A: Creating Equations	Write linear equations given real-world situations involving population, waste, pollution, etc
Math & Algebra Solving Systems	8.F.1.: Functions A.REI.C: Reasoning with Equations and Inequalities	Comparing the relationship between two events in real-world situations.
Algebra	A.CED.A.1.:	Use the exponential growth and decay models to to to

Exponential functions	Creating Equations	predict changes in systems and populations.
Algebra Logarithms	A.REI.11: Reasoning with Equations and Inequalities	Discussing the Richter scale and measuring the shift in tectonic plates, as well as measuring the pH levels and relative alkalinity or acidity of water and soil.
Math-Climate Change Geometry	8.G.C.9 Geometry	<p>Students will apply the formulas for the volumes of cones, cylinders, and spheres to solve real-world and mathematical problems related to climate change and the physical properties of greenhouse gases.</p> <p><a href="#">Activity Description/Steps</a>  <a href="https://www.noaa.gov/education/resource-collections/climate-education-resources">https://www.noaa.gov/education/resource-collections/climate-education-resources</a>  <a href="https://www.climatechangeeducation.org/">https://www.climatechangeeducation.org/</a></p>
Math-Climate Change Statistics and Probability	8.SP.A.1	<p>Students will investigate patterns of association in bivariate data involving the amount of a greenhouse gas in the atmosphere and its effect on temperature.</p> <p><a href="#">Activity Description/Steps</a>  <a href="https://www.ipcc.ch/">https://www.ipcc.ch/</a>  <a href="https://www.epa.gov/climate-indicators/climate-change-indicators-atmospheric-concentrations-greenhouse-gases">https://www.epa.gov/climate-indicators/climate-change-indicators-atmospheric-concentrations-greenhouse-gases</a></p>
Math-Climate Change Statistics and Probability	8.SP.A.2	<p>Students will use this information to practice their math and analytical skills and relate to average temperature change over time. <a href="#">Using Real-Life Data to Understand Climate Change</a></p>
Math-Climate Change Statistics and Probability	8.SP.A.3	<p>Students will use the equation of a linear model to solve problems involving bivariate measurement data and interpret the slope and intercept in the context of the physical properties of the principal gases that cause climate change.</p> <p><a href="#">Activity Description/Steps</a>  <a href="https://www.epa.gov/ghgemissions/overview-greenhouse-gases">https://www.epa.gov/ghgemissions/overview-greenhouse-gases</a></p>

Art Science Reading	1.5.5.Re7b MS-ESS3-2, MS-LS2-2 RI.8.2.	Students will learn about the hydrologic functions of beaver dams and how they might play a role in building climate resilience in their ecosystem. <a href="https://njclimateeducation.org/resource/beaver-dams-and-wildfire-a-stop-motion-demonstration">https://njclimateeducation.org/resource/beaver-dams-and-wildfire-a-stop-motion-demonstration</a>
Art	1.5.5.Re7b	Students will analyze and discuss artwork. <a href="https://seawalls.org/mural/to-protect-and-defend/">https://seawalls.org/mural/to-protect-and-defend/</a>
Health	2.2.8.N.3 2.2.8.N.2	Students will learn about plant-based diets. <a href="#">Plant Rich Diets</a>
Reading Speaking and Listening	RI.8.1 SL.8.4	This resource outlines the steps students can take to implement a school-wide "Walk and Roll Day" to encourage students and faculty to get to school by biking, taking public transportation, walking, or carpooling.  It provides easy-to-follow steps to help encourage others to participate in reducing vehicle emissions and improving local air quality
Social Studies/civics	6.3.8.CivicsPI.3 6.3.8.CivicsPI.4	Students will learn more about Politics and Climate <a href="https://climatescience.org/advanced-global-climate-politics">https://climatescience.org/advanced-global-climate-politics</a>
Health Reading	2.2.8.N.3 2.2.8.N.2 RI.8.2 RI.8.1	Dania describes the health issues (such as asthma, cancer, and stunted lung development) caused by pollution from warehouses, factories, and diesel trucks that are disproportionately situated in her community in Southern California.  <a href="https://www.ourclimatevoices.org/2018/daniaderamon">https://www.ourclimatevoices.org/2018/daniaderamon</a>
Reading Social Studies	RI.8.7 6.3.8.CivicsPD.1	This activity guides students through a series of questions related to the Yale Climate Opinion Maps. Students will also get to put themselves in the place of the governor of Louisiana and make several climate policy decisions based on their constituents' climate opinions.  <a href="https://climatecommunication.yale.edu/for-educators/navigating-the-yale-climate-opinion-maps/">https://climatecommunication.yale.edu/for-educators/navigating-the-yale-climate-opinion-maps/</a>
Health	2.1.8.CHSS.7	This resource provides a real-world activity for students that will allow them to take immediate action to reduce their carbon footprints, reduce pollution, and reduce their school's energy bill.  Students organize, plan, and encourage participation in Lights Out Day - turning off as many lights as possible in their school for one school day.  <a href="#">Lights Out Day</a>
Health	1.5.5.Re7b 2.1.8.CHSS.7	This is a library of images showing the impacts of climate change on human health.

		<a href="https://climatevisuals.org/groupitem/29/">https://climatevisuals.org/groupitem/29/</a>
Visual and Performing Arts	1.5.8.Cn11b	In this lesson, students investigate the effectiveness of visual art in addressing climate change. <a href="https://njclimateeducation.org/lesson-plan/the-art-of-climate-change">https://njclimateeducation.org/lesson-plan/the-art-of-climate-change</a>
Social Studies	6.3.8.CivicsPD.1	Students dive deeper into the economy and climate <a href="https://climatescience.org/advanced-climate-economic">https://climatescience.org/advanced-climate-economic</a> <a href="#">S</a>