Englewood Public School District
Science
Kindergarten
Fourth Marking Period

Unit 4: Earth's Resources

Overview: In this unit of study, students will learn about Earth's natural resources and how humans impact our planet. Students will explore the relationships between Earth's various systems and how we can help sustain our planet by making responsible choices. The crosscutting concept of cause and effect is called out as the organizing concept for this disciplinary core idea. Students are expected to demonstrate grade-appropriate proficiency in *planning and carrying out investigations* and *analyzing and interpreting data*. Students are also expected to use these practices to demonstrate understanding of the core ideas.

Time Frame: 15 – 20 days

Enduring Understandings:
Students will be able to communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.
Students will be able to identify natural resources and why they are important to all living things.

Essential Questions:
How do humans use natural resources for everything they do?
How can things that people do to live comfortably affect the world around them?
What strategies are helpful in thinking about problems?
Why is it important to reduce, reuse, and recycle?

Standards	Topics and Objectives	Activities	Resources	Assessments

K-ESS2-2 Earth's Systems
Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.
 	
K-ESS3-3
Earth and Human Activity
Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.
 	
K-2-ETS1-1.
Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
	Topics
	
	Engineering and technology forces and motion
	
	Twenty-First Century Themes and Skills include:
	• Information Literacy & Media Literacy
	• The Four C's
	• Career and life skills
	
	Objectives
	
	Students will:
	• Learn about Earth's resources:
	  ○ Water
	  ○ Air
	  ○ Soil
	  ○ Rock
	
	• Understand and explain what recycling, reusing, and reducing means
	• Understand how Theodore Roosevelt helped protect natural resources
		Unit 6: Earth's Resources
		As an introduction to the unit, students will watch a short video about natural resources. Students will then have a class discussion about 'What natural resources they found in the video?' (8.1.2.B.1, 8.1.2.E.1)
		
		Unit 6 Project:
		How Can You Reuse a Milk Carton: Students will work in pairs to come up with different ways to use a milk carton. They will draw and label the materials needed and tell or write the steps they will do to reuse the milk carton. Students will record their data, analyze their results and make a claim, review the data and provide evidence for their design. Lastly, they will present their design to the class.
			***You must be logged into the "Ed: Your Friend in Learning" platform to access the HMH links. ***
			
			Text:
			HMH Science Dimensions: Grade K
			
			Unit 6 Earth's Resources
			https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157_/book_pages_unit6/#cards--kke2_0106_ese_op_earthresources/
			
			Unit 6 Project Worksheet
			How Can You Reuse a Milk Carton:
			https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157_/student_resources/unitprojectworksheet/K_UPWKST_U6.pdf
			
			Materials:
			• construction paper
				Formative Assessments:
				Students will maintain a science journal that includes vocabulary words, brainstorming ideas, and problems and solutions.
				
				Benchmark Assessment:
				Exact Path
				
				Summative Assessment:
				Unit 6 Project:
				How Can You Reuse a Milk Carton
				
				Hands-on activity: Clay Bricks
				
				Alternative Assessment:
				Students will respond to oral questioning and retell the events that took place in the videos.
				
				Students will tell how they created the reused a milk carton and then justify the

K-2-ETS1-2. **Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.** **K-2-ETS1-3.** **Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.**	• Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new	(RI.K.1) (W.K.7) (SL.K.3) (CRP2, CRP4, CRP6, CRP7, CRP8) (8.2.2.C.1) Following a teacher directed lesson on Unit 6 vocabulary, students will review digital vocabulary cards and create a science journal containing unit vocabulary words. (8.1.2.B.1) Students will watch a short video about natural resources and all the things people use that come from nature. Class will generate a list of natural resources (8.1.2.B.1, 8.1.2.E.1) Students will watch a few short videos about air. Then they will work in pairs to record the number of breathes taken in 30 seconds(, partners will take turns counting the number of breathes taken, compare who took more breathes and recording their responses in their science journal (8.1.2.B.1**)** (K.MD.A.1,	• Masking tape • markers • cardboard • scissors • stickers • Boxes of varying sizes • Envelopes • Clear tape • Elastic bands • Science journal ***HMH Science Dimensions: Grade K-*** *Student Digital text* https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157_/book_pages_unit6/#cards--kke2_0106_ese_uv_earthresources/ Science Journal ***HMH Science Dimensions: Grade K-*** *Student Digital text* https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157_/book_pages_unit6/#cards--k2e1_0110_ese_en_whatnaturalresources_1/ ***HMH Science Dimensions: Grade K-*** *Student Digital text*	approach they chose to use. Students will verbally compare each group's project design and draw pictures while labeling the phases. Students will present their designs to the class. Students will make observations (firsthand or from media) to collect data that can be used to make comparisons. Rubric will be used to access journal.

		K.MD.A.2) (W.K.7) (SL.K.3) Students will watch videos showing the way people use water. Students will then cut out pictures from magazines or print out pictures online showing people using air and water. (8.1.2.B.1) (CRP8) Students will use their science journals to draw a picture of an animal using water. Students are encouraged to use details and provide evidence. Students will share their drawings with the class. (CRP4, CRP2, CRP6) Following a teacher led lesson about Rocks, students will explore different types of rock using their digital textbooks. (8.1.2.B.1) Students will draw a picture of something made from rock. Students will share their drawings with a	https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157_/book_pages_unit6/#cards--k2e1_0110_ese_ee1_whatnaturalresources/ ***HMH Science Dimensions: Grade K-*** *Student Digital text* https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157_/book_pages_unit6/#cards--k2e1_0110_ese_ee2_whatnaturalresources/ ***HMH Science Dimensions: Grade K-*** *Student Digital text* Science Journal ***HMH Science Dimensions: Grade K-*** *Student Digital text* https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157_/book_pages_unit6/#cards--k2e1_0110_ese_ee3_whatnaturalresources/	

		partner. (8.2.2.C.1,) (CRP4, CRP6) Following a teacher led lesson about soil, students will explore different types of soil using their digital textbooks. (8.1.2.B.1) **Hands-on activity: Clay Bricks** Students will create bricks from clay and an ice cube tray. Students will design something using the hardened clay bricks they made. They will then make a claim and support it with evidence related to what they made from clay. (CRP6, CRP8) Students will draw a picture of something made from rock. Students will share their drawings with a partner. (8.2.2.C.1,) (CRP4, CRP6) Students will watch two videos to learn about	***HMH Science Dimensions: Grade K-*** *Student Digital text* https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157_/book_pages_unit6/#cards--k2e1_0110_ese_ee4_whatnaturalresources/ **Hands-on activity:** Clay Bricks Worksheet https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157_/student_resources/handsonactivity/K_HOA_U6_L1.pdf ***HMH Science Dimensions: Grade K-*** *Student Digital text* Theodore Roosevelt https://www.hmhco.com/content/science/sciencedimensions/na/grk/eSE_9780544709157_/book_pages_unit6/#cards--k2e1_0110_ese_tif_whatnaturalresources_1/ **Additional Texts:** Readworks.org: Earth Science	

		president Theodore Roosevelt and how he helped protect our natural resources. (9.2.4.A.1, 9.2.4.A.2)	and Natural Resources Texts: *Horseshoe Bend* *Save Your Paper, Help Earth* *Arches of Stone* *Rivers and Lakes* *Callie's Rock Collection* *Blue on Earth* *Wow, Water!* *Oil Spills* https://www.readworks.org/technology-engineering-passages#!s0:373,361/q:/g:16/t:0/s:361/k:/cid:/f:0/pt:A/features:/staff_picks:/sel:/	

Accommodations and Modifications:

Students with special needs: Support staff will be available to aid students related to IEP specifications. 504 accommodations will also be attended to by all instructional leaders.
Physical expectations and modifications, alternative assessments, and scaffolding strategies will be used to support this learning.
The use of Universal Design for Learning (UDL) will be considered for all students as teaching strategies are considered.

ELL/ESL students: Students will be supported according to the recommendations for "can do's" as outlined by WIDA – https://www.wida.us/standards/CAN_DOs/
This particular unit has limited language barriers due to the physical nature of the curriculum.

Students at risk of school failure: Formative and summative data will be used to monitor student success at first signs of failure student work will be reviewed
to determine support.
This may include parent consultation, basic skills review and differentiation strategies. With considerations to UDL, time may be a factor in overcoming developmental considerations.

More time and will be made available with a certified instructor to aid students in reaching the standards.

Gifted and Talented Students: Students excelling in mastery of standards will be challenged with complex, high level challenges related to the complexity in planning and carrying out
Investigations and analyzing and interpreting data.

English Language Learners	Special Education	At-Risk	Gifted and Talented
● Speak and display terminology ● Teacher modeling ● Peer modeling ● Provide ELL students with multiple literacy strategies. ● Word walls ● Use peer readers ● Give page numbers to help the students find answers ● Provide a computer for written work ● Provide two sets of textbooks, one for home and one for school ● Provide visual aides ● Provide additional time to complete a task ● Use graphic organizers	● Utilize modifications & accommodations delineated in the student's IEP ● Work with paraprofessional ● Use multi-sensory teaching approaches. ● Work with a partner ● Provide concrete examples ● Restructure lesson using UDL principals (http://www.cast.org/our-work/about-udl.html#.VXmoXcfD_UA). ● Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling).	● Using visual demonstrations, illustrations, and models ● Give directions/instructions verbally and in simple written format. Oral prompts can be given. ● Peer Support ● Increase one on one time ● Teachers may modify instructions by modeling what the student is expected to do ● Instructions may be printed out in large print and hung up for the student to see during the time of the lesson. ● Review behavior expectations and make adjustments for personal space or other behaviors as needed. ● Structure lessons around questions that are authentic, relate to students' interests, social/family background	● Curriculum compacting ● Inquiry-based instruction ● Independent study ● Higher order thinking skills ● Adjusting the pace of lessons ● Interest based content ● Real world scenarios ● Student Driven Instruction ● Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways to demonstrate their understandings. ● Use project-based science learning to connect science with observable phenomena. ● Structure the learning around explaining or solving a social or community-based issue. ● Collaborate with after-school programs or clubs to extend learning opportunities.

		and knowledge of their community. • Provide opportunities for students to connect with people of similar backgrounds (e.g. conversations via digital tool such as SKYPE, experts from the community helping with a project, journal articles, and biographies).	

Interdisciplinary Connections:

ELA - NJSLS/ELA:
NJSLSA.R1. Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
RI.K.1 With prompting and support, ask and answer questions about key details in a text. (K- PS2-2)
RI.K.4. With prompting and support, ask and answer questions about unknown words in a text.
W.K.7 Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-PS2-1)
SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood. (K-PS2-2)

Mathematics:
MP.2 Reason abstractly and quantitively. (K- PS2-1)
MP.4 Model with mathematics. (K-2-ESS2-1)
MP.5 Use appropriate tools strategically. (K-2-ETS1-2)
K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K- PS2-1)
K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/”less of” the attribute, and describe the difference. (K-PS2- 1)

Social Studies:
6.1.4.B.9 Relate advances in science and technology to environmental concerns, and to actions taken to address them.

Career Ready Practices:
CRP2. Apply appropriate academic and technical skills.
CRP7. Employ valid and reliable research strategies.
CRP6: Demonstrate creativity and innovation**.**
CRP4: Communicate clearly and effectively and with reason.
CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.

Integration of Technology Standards NJSLS 8:
8.1.2.E.1: Use digital tools and online resources to explore a problem or issue.
8.1.2.B.1: Illustrate and communicate original ideas and stories using multiple digital tools and resources.
8.2.2.C.1 Brainstorm ideas on how to solve a problem or build a product.

Integration of 21st Century Standards NJSLS 9:
9.2.4.A.1: Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.
9.2.4.A.3: Investigate both traditional and nontraditional careers and related information to personal likes and dislikes.

Key Vocabulary:
Natural Resource, reduce, reuse, recycle