

Grade #: K-2

Course Name: **DC Recycles!!**

Title: ***Plastic Potential***

Overview and Goal of the Lesson:

By the end of this activity, participants will:

- Understand how some plastics can be recycled to make other items
- Recognize how our human actions impact the environment
- Become informed about ways to reduce, reuse and recycle

Essential Question(s):

- Can you as a young person make a difference?
- What can we do to help our world?
- Does what we do impact our world?

NGSS Emphasized and Addressed in this Lesson Sequence:

Performance Expectations	Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p>K-ESS3-3. Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.</p> <p>1-LS1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.</p>	<p>Analyzing and Interpreting Data</p> <p>Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations.</p> <ul style="list-style-type: none"> • Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. <p>*</p>	<p>ESS3.C: Human Impacts on Earth Systems</p> <ul style="list-style-type: none"> • Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. (secondary to K-ESS2-2), (K- ESS3-3) 	<p>Cause and Effect</p> <ul style="list-style-type: none"> • Events have causes that generate observable patterns. (K-ESS3-3) <p>Systems and System Models</p> <ul style="list-style-type: none"> • Systems in the natural and designed world have parts that work together. (K-ESS2-2),(K-ESS3-1)


<p>2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.</p>	<p>(K-LS1-1)</p> <p>Obtaining, Evaluating, and Communicating Information Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information. Read grade-appropriate texts and use media to obtain scientific information to determine patterns in the natural world. (1-LS1-2)</p> <p>Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question. (2-LS2-1) Make observations (firsthand or from media) to collect data which can be used to make comparisons. (2-LS4-1)</p>	<p>LS1.B: Growth and Development of Organisms Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. (1-LS1-2)</p> <p>LS4.D: Biodiversity and Humans There are many different kinds of living things in any area, and they exist in different places on land and in water. (2-LS4-1)</p>	<p>Patterns Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence. (1-LS1-2),(1-LS3-1)</p> <p>Cause and Effect Events have causes that generate observable patterns. (2-LS2-1)</p>
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Materials

Item	Quantity	Purpose
Copy paper	1-2 sheets	Print recycle symbol

Chart Paper	1-2 sheets	To create KWL chart
Markers	1-2	To create KWL chart
Smart Board/Computer w speakers	1	To project video
The Adventures of a Plastic Bottle by Alison Inches	1	Read to students
Comingled recyclables and non-recyclables	n/a	Students to sort

5E Lesson Sequence

Total Duration: 60 minutes				
5E Model Stage	Duration	Teacher and Student Actions		Notes
Engage	5 minutes	What Teacher Does	 <p>Create “poster” of this recycling symbol by copying and enlarging to full sheet of paper.</p> <p>Show students a pile of would be trash (in a classroom wastebasket) and ask the question whether all of it is trash.</p>	<p>Every DCPS classroom should have a black bin for trash and blue bin for recycling paper. You may speak to your school custodial staff if you do not have each. DCPS Recycles! also recycles bottles/cans but usually in centralized locations (depends on school). For more information you can refer to DCPS Recycles! Program at https://dgs.dc.gov/page/dgs-healthy-schools</p>

			Start pulling items out and asking if the item is trash.	
		What Students Do	Discuss and answer questions posed using prior knowledge.	
5E Model Stage	Duration	Teacher and Student Actions		Notes
Explore	15 minutes	What Teacher Does	<p>Displaying poster of recycling symbol and ask students “What do you know about this symbol?” “What does it mean?” “What are you supposed to do when you see it?” “What kinds of things can we recycle?”</p> <p>Create KWL chart using chart paper. Fill in first column with student answers.</p> <p>Give students a variety of materials and task them to determine whether the materials should be recycled. Further questioning and discussion can be centered around how to reduce or reuse items.</p> <p>Give students a variety of plastic items to identify if it has a recycle symbol and then <i>identify</i> the number given to the items ability to be recycled.</p>	<p>You may also want to play a virtual sorting game on a Smartboard using the DGS website (https://dgs.dc.gov/page/dgs-healthy-schools) Look for the “Teacher & Environmental Educator Resources” at the bottom of the page. There is a field trip list with contact information for scheduling as well as other good resources.</p> <p>Information about DCPS waste management procedures can be found at https://dgs.dc.gov/sites/default/files/dc/sites/dgs/publication/attachments/Waste%20Management%20Procedures%20V1.pdf</p> <p>Information about plastic can be found at http://learn.eartheasy.com/2012/05/plastics-by-the-numbers/</p>
		What Students Do	Sort items into recyclable and non-recyclable groups.	

			<p>Locate and identify the recycling symbol on plastic items.</p> <p>Share ways to reduce or reuse plastics</p>	
5E Model Stage	Duration	Teacher and Student Actions		Notes
Explain	20 minutes	What Teacher Does	<p>Reiterate correct information given by students and ask what they would like to know about recycling and recycling plastics specifically (filling in the second column of the KWL chart).</p> <p>Read <u>The Adventures of a Plastic Bottle</u> by Alison Inches (or another book that highlights recycling plastic). Ask questions as you read the story to determine student comprehension.</p> <p>Show to students https://www.youtube.com/watch?v=BaFpv03hq-4 </p>	<p>“Correct information” about ways to better manage wastes can also be found on the DCPS Recycles website. Using video and book, teachers can explain that the work that we do can have an important impact on the earth. The changes that we make will make a difference on the environment. Choosing to reduce or repurpose plastics can produce positive changes in our earth.</p>
		What Students Do	<p>State what they would like to learn about recycling.</p> <p>Listen to the story and answer teacher questions as the story is read.</p> <p>Watch video.</p>	<p>The <u>Adventures of a Plastic Bottle</u> can be purchased from Barnesandnoble.com (https://www.barnesandnoble.com/p/adventures-of-a-plastic-bottle-alison-inches/1100489368/2681254707426?st=PLA&sid=BNB_DRS_Marketplace+Shopping+greatbookprices_00000000&2sid=Google_&sourceId=PLGoP24104) or Amazon.com (https://www.amazon.com/Adventures-Plastic-Bottle-Recycling-Little/dp/1416967885) if needed.</p> <p>If you desire to read a similar themed story by a local author, you may choose <u>Watershed Adventures of a Bottle</u> by Jennifer Chambers.</p>

				<p>The book can be obtained at https://www.amazon.com/Watershed-Adventures-Bottle-Jennifer-Chambers/dp/1625103913</p> <p>Other videos that can be show for https://www.youtube.com/watch?v=gEk6JLJNg0U</p> <p>https://www.youtube.com/watch?v=BaFpv03hg-4</p> <p>https://www.youtube.com/watch?v=bn8R_Xqjil0</p> <p>https://www.youtube.com/watch?v=zACy6KsVm8k</p> <p>https://www.youtube.com/watch?v=zCfazf2gVu0</p> <p>https://www.youtube.com/watch?v=73sGgmZoMBQ</p> <p>https://www.youtube.com/watch?v=6xINyWPpB8</p>
5E Model Stage	Duration	Teacher and Student Actions		Notes
Elaborate	10 minutes	What Teacher Does	Review middle column to make sure that all of the student wonderings and would like to knows have been answered.	

			Use information from the video and story to reiterate answers to their questions.	
		What Students Do	Listen and discuss information from story and video.	
5E Model Stage	Duration	Teacher and Student Actions		Notes
Evaluate	5 minutes	What Teacher Does	Question students to identify what they have learned about recycling plastics (and recycling in general) from the lesson. Fill in the third column of the KWL chart.	Extension activity: -if recycling is not happening at school, start recycling! (contact DCPS Recycles! for help) -participate in the Reduce First challenge (https://dgs.dc.gov/node/1177100) -do a litter clean up -field trips -other action in community (tell DCPS Recycles! about it)
		What Students Do	State what they have learned about recycling, reducing and reusing plastics.	