Let’s Learn About PLASTIC

Quick View

What Everyday Items Do We Make with Plastic?
Plastic is a man-made material that can be molded to make thousands of everyday items. Bottles, toys and even packing materials are all made of plastic. Plastic can be used in so many ways that we would have a difficult time living without it.

Materials
Plastic items with different textures, balls, dog chew toys, straws, markers, pot scrubbers, plastic bags of various thicknesses, plastic blocks, plastic cups, plastic buttons, paper clips, plastic beads, plastic pails or tubs of varying sizes.
A more detailed list can be found on Page 2.

Standards
NCECDTL, ELOF: Goal IT-ALT 3, 4, 5, 6, 7, 8, 9; Goal P-ATL 6, 7, 8, 9, 10, 11, 12, 13; Goal P-LC 1, 2, 3, 4, 5, 6, 7; Goal P-LIT 4, 5; Goal IT-C 1, 2, 3, 5, 6, 7, 9, 10, 12, Goal P-MATH 7, 8, 10; Goal P-SCI 1, 2, 4, 5, 6; Goal IT-PMP 1, 2, 3, 4, 5, 6, 7, 8; Goal P-PMP 2, 3; MI Standards: SS 1, 3.

Model i Innovation Learning Framework
Throughout this lesson, there will be opportunities to bring in Model i’s Habits of an Innovator and Actions of Innovation.

More information on Model i can be found at: thf.org/education/teaching-innovation/modeli

Lesson Overview

<table>
<thead>
<tr>
<th>STEAM</th>
<th>ELA/LIT</th>
<th>SS/HST</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explore</strong></td>
<td><strong>Discover</strong></td>
<td><strong>Create</strong></td>
</tr>
<tr>
<td>Explain plastic is a man-made material used to make all kinds of objects.</td>
<td>Discover as many plastic items as tots can find in classroom.</td>
<td>Build walls or towers with various plastic materials.</td>
</tr>
<tr>
<td>Explore the ways plastic is formed and its many uses by looking at and getting the feel of plastic items.</td>
<td>Mix a variety of different items made from plastic together, tots sort.</td>
<td>Use various sizes of plastic pails and tubs as classroom drums, tots arrange.</td>
</tr>
<tr>
<td>Test durability and strength of various plastic bag thicknesses.</td>
<td>Stay Curious, Collaborate</td>
<td>Be Empathetic</td>
</tr>
<tr>
<td>Stay Curious, Uncover</td>
<td><strong>Inspiring Stories</strong></td>
<td><strong>Artifact of the Day</strong></td>
</tr>
<tr>
<td>Read stories to inspire your students, including Michael Recycle Meets Litterbug Doug by Ellie Bethel and Miss Fox’s Class Goes Green by Eileen Spinelli</td>
<td>Show students pictures of the Mold-A-Rama machines and Wienermobile to show some of the ways plastic has been used in the past.</td>
<td>Invite a guest who works with plastics.</td>
</tr>
<tr>
<td><strong>Review &amp; Extend</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask students specific and open-ended questions.</td>
<td>Family Connection worksheet to send home.</td>
<td>Coloring sheet to send home or work on in class.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Let’s Learn About PLASTIC

Explore

Activity: Touch Exploration
- Various plastics
- Plastic bags of varying thickness
- Weights or heavy objects
- Teachers can provide as many examples of metals as possible for touch exploration

Create

Project 1: Building Towers
- Plastic cups (20 oz or larger)
- Marker

Create

Project 2: Sorting
- Large container
- Cups, bowls, muffin tins
- Various colors of beads, plastic silverware, any plastic items in multiple colors
- Construction paper in colors to match items to sort.

Create

Project 3: Drums
- Various sizes of plastic pails and tubs
Let’s Learn About PLASTIC

Lesson Guide

Explore
Stay Curious, Uncover
Activity: Touch Exploration .... Page 4

Artifact of the Day
Stay Curious, Uncover
Mold-A-Rama ....................... Page 5
Links & Photos ................... Pages 6-8

Discover
Stay Curious, Collaborate
Activity: On the Path of Plastic:
Scavenger Hunt ................... Page 9

Create
Design, Learn from Failure
What Can You Make with Plastic?
Project 1: Building Towers ........ Page 10
Project 2: Sorting .................. Page 11
Project 3: Drums ................... Page 12

Inspiring Stories
Be Empathetic
Read Stories to Inspire
Your Students ....................... Page 13

Review & Extend
Stay Curious, Collaborate
Ask Students Specific and
Open-Ended Questions ........ Page 14
Family Connection ................. Page 15
Coloring Sheet ..................... Page 16
What Is Plastic?
Teachers explain plastic is a man-made material used to make all kinds of objects. From our toothbrushes to car parts, plastic is all around us.

How Is It Made and Used?
Plastic is melted at high temperature, so it can be shaped as needed. Tots can explore the ways plastic is formed and its many uses by looking at and getting the feel of plastic items that are smooth, rough, dull, shiny, hard and soft.

Activity

Touch Exploration
- Give students objects made of different types of plastics.
- Students can also see and feel how plastic bags vary in thickness and durability by testing how much each can hold.

Teachers can provide as many examples of plastics as possible for touch exploration.

Model i Innovation Learning Framework

Stay Curious, Uncover
- Ask questions like what, why, how.
- What problems does this material help us solve?
Let’s Learn About PLASTIC

Artifact of the Day

What Is a Mold-A-Rama Machine?

Teachers can explain plastics are molded by heating small plastic pellets and injecting or blowing the melted plastic into molds.

Teachers can show images of the Mold-A-Rama machine, which injects hot plastic into a 2-piece mold. The machine was introduced at the 1962 Seattle World’s Fair.

The Henry Ford has machines that can mold a locomotive, President Kennedy’s limousine, a bust of Lincoln and Henry Ford. There is also a Mold-A-Rama to make the 1952 Oscar Meyer Wienermobile.

Additional Presentation

Teachers can also invite special guests who work with plastics, such as for automobiles or in crafts or from a recycling center. It may be possible to have a 3D printer brought in to demonstrate to students.

Model i Innovation Learning Framework

Stay Curious, Uncover

- Ask questions like what, why, how.
- What problems does this material help us solve?

Links and photos for this section are on Pages 6-8.
Let’s Learn About
PLASTIC
Artifact of the Day — Photos

Mold-A-Rama Machine
Let’s Learn About

PLASTIC

Artifact of the Day — Photos

Example of Mold-A-Rama Plastic Injection Molding
Let’s Learn About PLASTIC

Artifact of the Day — Links

Wienermobile, 1952

thf.org/collections-and-research/digital-collections/artifact/13269
Activity
On the Path of Plastic: Scavenger Hunt
There are many innovations in the classroom made with plastic. Students can explore to discover as many plastic items as they can.

Plastic Objects Around the Classroom:
- Storage bins
- Plastic bags
- Wastebasket
- Cups
- Silverware
- Plates
- Computer case
- Table
- Chairs
- Toys
- Bottles
- Markers
- Pens

Model i Innovation Learning Framework
Stay Curious, Collaborate
- Ask questions like what, why, how.
- Talk about helping, working together.
Let’s Learn About
PLASTIC

Create — What Can You Make with Plastic?

Project 1: Plastic Cup Walls

There are many kinds of plastic. Some are soft and flexible, while others are hard and strong. Tots can build walls or towers with various plastic materials, such as Solo cups, blocks, LEGO/Duplo or straws to test their strength and durability. This activity can also be used to practice letter or number recognition.

Materials

- Plastic cups, 20 oz or large cups
- Marker

Instructions

1. Allow students to discover how to build a wall with plastic cups.
2. Options: Use marker to write letters, sight words or numbers on the cups, and use to practice letter, word or number recognition.

Model i Innovation Learning Framework

**Design, Learn from Failure**

- Talk about “trying again,” what’s another way to...
- Make, build and create.

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Create — What Can You Make with Plastic?
Let’s Learn About PLASTIC

Create — What Can You Make with Plastic?

Project 2: Sorting

Materials

- Large container for mixing items to be sorted.
- Cups, bowls, muffin tins or other separate containers for sorting.
- Various colors of beads, plastic silverware, any plastic items in multiple colors.
- Construction paper in colors to match items to sort.

Instructions

1. Mix a variety of different items made from plastic together in a tub and have tots sort the various items into plastic cups: buttons, straws, paper clips, LEGO pieces, etc.

2. This activity could also be used to practice sorting beads according to color or size, plastic silverware, etc.

Model i Innovation Learning Framework

Design, Learn from Failure

- Talk about “trying again,” what’s another way to...
- Make, build and create.
Let’s Learn About PLASTIC

Create — What Can You Make with Plastic?

Project 3: Drums

Materials

• Various sizes of plastic pails and tubs

Instructions

1. Use plastic pails and tubs as classroom drums.

2. Tots can arrange the pails and tubs according to sound, lowest to highest for example, by drumming on the them.

Model i Innovation Learning Framework

Design, Learn from Failure

• Talk about “trying again,” what’s another way to...

• Make, build and create.
Let’s Learn About PLASTIC

Inspiring Stories

Read Stories to Inspire Your Students

**Michael Recycle Meets Litterbug Doug**
by Ellie Bethel

**Miss Fox’s Class Goes Green**
by Eileen Spinelli

Model i Innovation Learning Framework

Be Empathetic

- How did the characters in the stories feel?
- How might it make others feel?
Let’s Learn About PLASTIC

Review & Extend

Ask Students Specific and Open-Ended Questions

- What was your favorite activity today?
- What other things do you think might be made with plastic?
- Tell me about what you built.
- What happened in the story today?

Family Connection
Send the worksheet on Page 15 home with students to be completed at the end of the lesson.

Coloring Sheet
Have students color the picture on Page 16 as a part of the lesson or send it home to be colored.

Model i Innovation Learning Framework

Stay Curious, Collaborate

- Ask questions like what, why, how.
- Talk about helping, working together.
Let’s Learn About PLASTIC

Review & Extend — Family Connection

Take the Learning Home

We are learning about plastics because they are used in many items we use every day. Have your innovative student help collect recyclables and get them ready for pickup.

Please take your student on an "I Spy" adventure through your home and neighborhood to see what plastic items you can find. (Maybe take a recycle bag on your trip.) What are some of these things?

Have them draw what they find.

These are some of the stories related to our learning. You might enjoy reading them with your student.

The Adventures of a Plastic Bottle: A Story About Recycling
by Alison Inches

Toys Go Out
by Emily Jenkins

What Does It Mean to Be Green?
by Rana DiOrio
Let’s Learn About
PLASTIC
Coloring Sheet

1952 Wienermobile