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Resource ID#: 151262

Primary Type: Lesson Plan

# From Trash to Treasure - An Engineering Design Challenge

This lesson gives students hands-on experience with sorting mixtures based on their properties. The students will relate these science standards to a real-world problem of eliminating trash in landfills. They will have to purchase the tools they use to create their assembly line to sort the garbage within the budget provided.

**From Trash to Treasure Introduction:** An introduction to the project and the lesson provided.

**Engineering Design Process:** Example of engineering design process for students to follow.

**From Trash to Treasure Lesson Plan:** This lesson allows students a hands on experience with sorting mixtures based on their properties.

**Pre and Post Test:** This document provides the pre and post test as well as an answer key for both.

**Examples of Student Work:** Examples of a student graphic organizers and budget sheet—for the teacher's reference only

**From Trash to Treasure Budget:** This form is provided for students to create their budget for the assembly line they design.

## General Information

**Subject(s):** Science, Mathematics

**Grade Level(s):** 5

**Intended Audience:** [Educators](#)

**Suggested Technology:** Document Camera, Computer for Presenter, Internet Connection, Overhead Projector, Speakers/Headphones, Microsoft Office

**Instructional Time:** 8 Hour(s)

**Keywords:** Separating Mixtures, Matter, Properties of Matter

**Instructional Component Type(s):** [Lesson Plan](#), [Problem-Solving Task](#), [Assessment](#)

**Instructional Design Framework(s):** [Structured Inquiry \(Level 2\)](#)

**Resource Collection:** Lake/Sumter MSP K-5

## Additional Information/Instructions

**By Author/Submitter**

This lesson is designed to be completed over about an 8 day period, including assessment time.

## Source and Access Information

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**District/Organization of Contributor(s):** Lake, Lake

## Aligned Standards

Name	Description
<a href="#">SC.5.P.8.2:</a>	Investigate and identify materials that will dissolve in water and those that will not and identify the conditions that will speed up or slow down the dissolving process.
<a href="#">SC.5.P.8.3:</a>	Demonstrate and explain that mixtures of solids can be separated based on observable properties of their parts such as particle size, shape, color, and magnetic attraction.
	<b>Clarifications:</b> Annually assessed on Grade 5 Science FCAT 2.0. Also assesses SC.5.P.8.2.
<a href="#">MAFS.5.NBT.2.7:</a>	Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.