

Buried Treasure Lesson 2C: Recycling Paper

Lesson Overview:

Students begin the lesson by reviewing a diagram showing the cycle of how consumers use products: the products are sent to recycling facilities where they are sorted, sent back to manufacturers for reprocessing, and then sold back again to consumers. Next, students complete a hands-on investigation to discover how old paper is reprocessed to make new paper. The investigation is followed up by a short reading selection on how recycling paper impacts trees.

Objectives:

Students will describe the recycling process of consumers and producers.

Students will make recycled paper.

Students will state the benefits of paper recycling.

Essential Questions:

Why is it helpful to recycle paper?

Materials:

- Mixed papers from the school recycling bin
- Water
- Blender
- Metal screens (enough for groups of 5 or 6)
- Plastic containers slightly larger than metal screen (optional)
- Newspaper to cover tables
- Soap and water for cleanup
- Plastic ruler or straight edge
- Reading selection - Paper: Reduce, Reuse, Recycle
- Paper Recycling Persuasive Writing Prompt
- Student Page: Paper Chase
- Recycling Paper Quiz
- Waste Management Recycling PDF

Time Frame: Approximately 2 sessions

Instructional Activities (may include formative assessment within the lesson):

1. Draw a circle on the board. Ask students to help you complete the diagram showing the Recycling Process. (See Lesson 2B)

2. Tell students that today they will explore how manufacturers turn old paper into new paper.

3. Protect tables by covering them with newspaper.

Use the following steps to make recycled paper:

- A. Allow students to tear up paper from the recycling bin into little bits
- B. Put the paper in a blender.
- C. Add just enough water to soak the paper thoroughly.
- D. Place the lid on the blender and blend on medium speed. Add water as needed.
- E. Be sure each screen is positioned over newspaper or a large plastic container to catch any excess water. Pour the pulpy mixture over each group's screen. Students should work together to smooth out the mixture over the screen. Using the edge of a plastic ruler or straight edge to smooth out the mixture may reduce the mess.
- F. Allow the pulpy mixture to dry thoroughly overnight.

4. Allow students to read and discuss the reading selection titled Paper: Reduce, Reuse, Recycle.

For additional information refer to the Waste Management Recycling PDF available at www.thinkgreen.com/classroom

5. As an extension, students should explore the ThinkGreen.com website section on Newspapers, Wilderness Restoration and Roadside Planting at

<http://www.thinkgreen.com/recycle-what-detail?sec=paper-and-cardboard&prod=newspapers>

to discover how recycled paper is used for hydromulching and hydroseeding. After recording what they learn about these processes in a journal, discuss student findings as a class. As an additional extension, allow the class to estimate and determine the amount of paper the grade level or school uses in one day. Multiply this number by five to determine the amount of paper used in a five-day school week. Brainstorm ways to reduce the amount.

Lesson Assessment:

- Students complete Paper Recycling Writing Task: Imagine you are a tree. What would be your persuasive message about recycling? Explain at least three reasons for your thinking. Assess if the student has complete understanding (three reasons), partial understanding (one or two reasons), or no understanding (no reasons) of the concepts in this lesson.
- Students complete Recycling Paper Quiz.

Reflection:

Ask students to respond to the essential question, Why is it helpful to recycle paper?

(Possible responses: The paper can be made into new products such as cereal boxes, insulation, etc. Recycled paper is useful in such processes as hydromulching and hydroseeding. Recycling paper saves trees that provide homes for animals and cleans the air of carbon dioxide.)

Standards Correlation:

This lesson may be used to address the National Science Education Standards listed below.

NSES 4FSPSP3.3: The supply of many resources is limited