

# School Recycling Club SHIP

(Supporting Home Instruction Program)



## Lesson Plan 8

Grade Level: 9-12

Lesson: III.B.4.—How Can We Reduce Waste? Recycling—  
The Cart Before the Horse?

Source: *3 R's of the Common Core*

Activity/Craft: How Recycling Has Changed In All 50 States (<https://www.wastedive.com/news/what-chinese-import-policies-mean-for-all-50-states/510751/>)

Video Link: Why You're Recycling Wrong (<https://www.youtube.com/watch?v=R7N5a476DKQ>)

Video Link 2: The War On Plastic Isn't Working (<https://www.youtube.com/watch?v=Vhwc9VofML4>)



Northeast Resource  
Recovery Association

School  
Recycling CLUB



# Lesson Matrix Grades 9-12

## 3R's of the Common Core

Lesson	Leading Question	Objective	Common Core Alignments	Skills
9-12 <b>Sources of Waste</b> I.A.1	How do we determine the amount of waste we produce?	Research the sources of waste in society Trace the production of waste in industry	<b>Grade 9-10</b> CC.RI.9-10.7 CC.W.9-10.7 CC.HSS.ID.1	Analyzing Collecting and interpreting data Designing Researching
9-12 <b>Packaging Preferences</b> I.A.2	How have beverage containers changed over the years?	Evaluate the environmental impact of different packaging types	<b>Grade 9-10</b> CC.W.9-10.4 CC.WHST.9-10.7 CC.HSS.ID.1	Evaluating Gathering information Graphing data Researching
9-12 <b>Nonrenewable Resources</b> I.B.1	How long will our natural resources last?	Compare estimated life expectancies of some nonrenewable natural resources Understand the role recycling and careful use play in meeting the demand for extending availability of these resources	<b>Grade 9-10</b> CC.L.9-10.6 CC.RST.9-10.7 CC.SL.9-10.2 CC.W.9-10.4	Applying ideas to solve problems Explaining Interpreting data Predicting outcomes
9-12 <b>Shopper Survey</b> I.C.1	What things influence our purchasing choices? Why is there so much waste?	Assess typical purchasing criteria Determine the influence of packaging on consumer choices Determine if consumers consider waste disposal and recycling when making purchases	<b>Grade 9-10</b> CC.SL.9-10.3 CC.W.9-10.4 CC.HSS.IC.3	Analyzing Gathering information Hypothesizing Interviewing
9-12 <b>Garbage</b> I.C.2	Name something that New York City produces more of than any other city in the world.	Read Katie Kelly's essay "Garbage" to examine author's use of analysis and persuasion Examine continuing problems of trash volume and disposal	<b>Grade 11-12</b> CC.SL.11-12.3 CC.W.11-12.1 CC.W.11-12.4 CC.HSS.IC.3	Analyzing Evaluating Interpreting information Researching
9-12 <b>The Dump Ground</b> I.C.3	What do people mean when they use the expression, "One man's trash, another man's treasure"?	Interpret the themes of "The Dump Ground" and "Garbage" Derive history and culture of a people from the essays	<b>Grade 9-10</b> CC.RI.9-10.6 CC.RI.9-10.10 CC.SL.9-10.1c CC.W.9-10.4 CC.HSS.ID.1	Analyzing Comparing Evaluating Interpreting
9-12 <b>GNP(P):Great New Purchasing Power</b> I.C.4	Does a higher income cost more?	Detect general relationships between GNP/capita and energy consumption per capita Examine the specific factors encouraging high energy use Understand relationship between recycling and conserving energy	<b>Grade 9-10</b> CC.L.9-10.6 CC.W.9-10.4 CC.HSS.ID.6	Evaluating Graphing data Interpreting data Recognizing patterns

Lesson	Leading Question	Objective	Common Core Alignments	Skills
<b>9-12 New Landfills II.A.1</b>	If we need a new landfill, how will we go about siting and designing one?	Become familiar with local government, land-use planning, and complexities of solid waste planning process	<b>Grade 9-10</b> CC.RI.9-10.7 CC.SL.9-10.2 CC.WHST.9-10.8 CC.HSG-MG.3  <b>Grade 11-12</b> CC.RI.11-12.7 CC.SL.11-12.2 CC.WHST.11-12.8 CC.HSG-MG.3	Comparing solutions Designing Gathering information and data Problem solving
<b>9-12 Methane II.A.2</b>	Can we recover energy from solid waste?	Understand the energy-producing potential of some solid wastes Understand some systems of generating methane from waste	<b>Grade 9-10</b> CC.RST.9-10.3 CC.SL.9-10.1 CC.WHST.9-10.7  <b>Grade 11-12</b> CC.RST.11-12.3 CC.SL.11-12.1 CC.WHST.11-12.8	Carrying out investigation Interpreting data Observing Researching
<b>9-12 Spreading Sludge II.A.3</b>	Is it safe to put sludge on land all year round?	Determine the benefits and drawbacks of land application of sewage sludge	<b>Grade 9-10</b> CC.SL.9-10.1c CC.SL.9-10.4 CC.W.9-10.6 CC.W.9-10.7  <b>Grade 11-12</b> CC.SL.11-12.1c CC.SL.11-12.4 CC.W.11-12.6 CC.W.11-12.7	Evaluating Formulating questions Gathering information Hypothesizing Interviewing
<b>9-12 Toxic Waste in the Lab II.A.4</b>	Are there alternatives to disposal of toxic wastes in the solid waste stream?	Upgrade the school's lab cabinet	<b>Grade 9-10</b> CC.RST.9-10.3 CC.SL.9-10.4 CC.W.9-10.7  <b>Grade 11-12</b> CC.RST.11-12.3 CC.SL.11-12.4 CC.W.11-12.7	Carrying out investigation Evaluating Explaining Researching
<b>9-12 Community Solid Waste II.B.1</b>	How do we manage our solid waste?	Evaluate both the current solid waste disposal practices and future plans in their community	<b>Grade 9-10</b> CC.SL.9-10.2 CC.SL.9-10.4 CC.W.9-10.4  <b>Grade 11-12</b> CC.SL.11-12.2 CC.SL.11-12.4 CC.W.11-12.4	Communicating information Designing Gathering information and data Synthesizing
<b>9-12 Twenty Foot Swath III.A.1</b>	Have personal or global problems such as poverty or environmental pollution ever become so overwhelming that you were immobilized or driven to some action that actually aggravated the problem?	Discern the author's purpose in writing the essay Develop a plan for decreasing pollution in environment by setting realistic personal goals	<b>Grade 9-10</b> CC.RI.9-10.3 CC.SL.9-10.1c CC.W.9-10.4  <b>Grade 11-12</b> CC.RI.11-12.6 CC.SL.11-12.1d CC.W.11-12.4	Analyzing Applying ideas to solve problems Engaging in collaborative conversation Evaluating

## Lesson Matrix Grade 9-12

### 3R's of the Common Core

Lesson	Leading Question	Objective	Common Core Alignments	Skills
9-12 Recycling Paper Pollution III.B.1	Does recycling solve all our solid waste problems?	Investigate methods of recycling paper and the technical problems encountered in the recycling industry	<b>Grade 9-10</b> CC.RST.9-10.3 CC.SL.9-10.1c CC.W.9-10.7 CC.HSS.ID.1	Carrying out investigation Communicating solutions Interpreting Researching
9-12 Collecting and Sorting III.B.2	What kind of recycling program would be best for our town or our school?	Understand some of the design considerations of establishing a recycling facility Use the information to design a hypothetical recycling center for their town or school	<b>Grade 9-10</b> CC.RI.9-10.7 CC.SL.9-10.2 CC.W.9-10.4 CC.HSG-MG.3	Applying mathematical concepts Designing Gathering information Problem solving
9-12 Speaking for Recycling III.B.3	What do we need to know about recycling?	Become more familiar with recycling and solid waste management issues Develop their public presentation skills	<b>Grade 9-10</b> CC.RI.9-10.8 CC.SL.9-10.4 CC.W.9-10.2	Communicating information Researching Sharing research and writing Synthesizing
9-12 The Cart Before the Horse? III.B.4	Why isn't everybody recycling?	Consider ways to reduce waste in the United States	<b>Grade 9-10</b> CC.RI.9-10.7 CC.SL.9-10.1 CC.W.9-10.4	Analyzing Engaging in collaborative conversations Gathering information Using evidence
9-12 Microorganisms III.C.1	Can you identify microorganisms responsible for the composting process?	<ul style="list-style-type: none"> <li>Relate the importance of healthy microorganism activity to composting</li> </ul>	<b>Grade 9-10</b> CC.RST.9-10.3 CC.SL.9-10.1 CC.WHST.9-10.4	<ul style="list-style-type: none"> <li>Carrying out investigations</li> <li>Collecting and interpreting data</li> <li>Observing</li> <li>Predicting</li> </ul>
9-12 Effective Fertilizers III.C.2	What are fertilizers made of?	Rate the effectiveness of various organic and inorganic fertilizers	<b>Grade 9-10</b> CC.L.9-10.6 CC.SL.9-10.1 CC.WHST.9-10.4	Carrying out investigation Hypothesizing Interpreting data Observing

## How Can We Recycle Our Resources?

### Concept

We need to redesign laws and revise habits in order for recycling to work.

### Objective

Students will consider ways to reduce waste in the United States.

### Method

Students will listen to quotes, read the articles and discuss ways to reduce waste and increase recycling.

### Materials

Educators choice

### Subjects

Social Studies, Economics, Language Arts

### Skills

Analyzing, engaging in collaborative conversations, gathering information, using evidence

### Time

One class period

### Vocabulary

Policy, secondary recycled materials, redesign, tax advantages, economic competition.

### Resources

Local recycling groups; your state's department of natural resources; your state's waste management department or agency

### 3R's of the Common Core

#### Parallel Activities

4-6, Where to Recycle

7-8, Graphing Recyclable Information

Public Planning and Policy Redesign and Reuse

Recycling

Resources

Solid Waste and Recycling

Waste Management Agencies by State

*"An inventory of the world's discards would reveal metals more valuable than the richest ores, paper representing millions of hectares of forests and plastics incorporating highly refined petrochemicals. That these products rich in raw materials and concentrated energy are frequently considered worthless is indicative of a distorted economic waste in the United States."*

—Cynthia Pollock

*"We do not buy scrap out of altruism or patriotism. Neither do we buy it just because it saves energy or is good for the environment. It's nice if those benefits follow along but we don't have much patience with those who not only advocate, but would legislate, putting the cart before the horse."*

— J.J. Ferrigan.

*"A city the size of San Francisco disposes of more aluminum than is produced by a small bauxite mine, more copper than a medium copper mine and more paper than a good sized timber stand. San Francisco is a mine."*

—David Morris, Worldwatch Paper #76

### Leading Question

Why isn't everybody recycling?

### Procedure

1. Discuss the background quotes. If recycling saves energy and resources, saves landfill space, reduces pollution, why doesn't it seem to be economically feasible? Does business pay the full costs of producing, transporting and disposing of its products? What are these costs and if not business, who does pay them?
2. Students research the National Recycling Coalition, <http://nrrecycles.org/> and answer questions on worksheet.

### Evaluation

Worksheet.

## Common Core Alignments

### GRADE 9-10

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#### CC.RI.9-10.7

Reading Informational Text:  
Integration of Knowledge & Ideas

#### CC.SL.9-10.1

Speaking & Listening:  
Comprehension & Collaboration

#### CC.W.9-10.4

Writing:  
Production & Distribution of Writing

### GRADE 11-12

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#### CC.RI.11-12.7

Reading Informational Text:  
Integration of Knowledge & Ideas

#### CC.SL.11-12.1

Speaking & Listening:  
Comprehension & Collaboration

#### CC.W.11-12.1

Writing:  
Text Types & Purposes

## Classroom Activities

- A. Develop a flow chart tracing all the costs of an object from extraction of a raw resource to disposal. Include environmental costs and subsidized costs. What would happen if the manufacturer were forced to pay the hidden costs? Why isn't this the case?
- B. Choose one recyclable. Check several different markets and haulers to see what prices, if any, are being offered for the material. What prices are they being paid for the materials by the end-user?
- C. Write an essay defending or refuting any of the three given quotes.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## A National Recycling Policy?

1. What reasons does the NRC give for pursuing recycling as a necessity?
2. Why do secondary recycled materials have difficulty competing with virgin materials?
3. What policies does NRC suggest to help secondary recycled materials compete?
4. What could a national recycling database be used for?
5. What does the NRC mean by Design for Recyclability?
6. What principles does the NRC suggest that a national recycling education policy should emphasize?
7. What specific recommendations does it make for its national policy for recycling education?
8. Do you agree with these recommendations? What other measures do you think would help recycling?