

Interest Level: Grades 3–5

Reading Level: Grade 3

**LERNER**  **SOURCE™**

## Titles in this series:

*How Can We Reduce*

*Agricultural Pollution?*

*How Can We Reduce*

*Fossil Fuel Pollution?*

*How Can We Reduce Household Waste?*

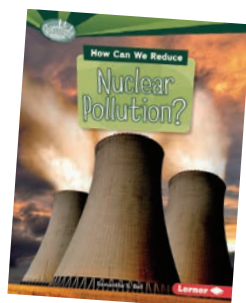
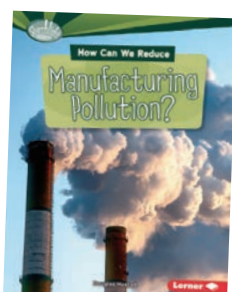
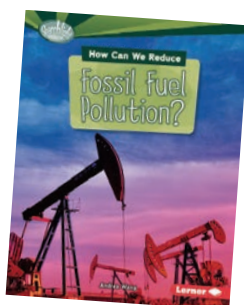
*How Can We Reduce*

*Manufacturing Pollution?*

*How Can We Reduce Nuclear Pollution?*

*How Can We Reduce*

*Transportation Pollution?*



## Standards

### Common Core State Standards

**RI.3.1** Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

**RI.3.2** Determine the main idea of a text; recount the key details and explain how they support the main idea.

**RI.3.4** Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.

**RI.3.7** Use information gained from illustrations (e.g., maps, photographs) in the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).

**RI.3.8** Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence).

**W.3.1** Write opinion pieces on topics or texts, supporting a point of view with reasons.

**W.3.4** With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose.

**SL.3.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.

### National Curriculum Standards for Social Studies

- People, Places, and Environments
- Science, Technology, and Society

## Multiple Intelligences Utilized

Visual-spatial, bodily-kinesthetic, interpersonal, intrapersonal, linguistic, logical-mathematical

# Lesson 1

## Graph Scavenger Hunt

### Purpose

Students will understand the use of graphs to convey information.

### Materials

- What Can We Do about Pollution? series
- Examples of bar graphs and pie graphs to display to the class
- Copies of Graph Scavenger Hunt activity sheet (p. 6)

### Prepare

- Create or gather examples of bar graphs and pie graphs to share with the class on the board ([www.meta-chart.com](http://www.meta-chart.com) allows you to create your own graphs with easy online tools).
- Make copies of Graph and Chart Scavenger Hunt activity sheet.

### Pre-test

- What are graphs?
- Where have you seen graphs before? What are graphs used for?

### Read

- Read What Can We Do about Pollution? series.

### Model

- Explain that students will be learning how to understand information in two different types of graphs. Make sure that students understand that graphs help readers visualize information in a text.
- Display multiple examples of bar graphs and pie graphs for students to analyze.
- Discuss the key features of each type of graph. Make sure that students understand that all graphs must have titles and labels. Explain that bar graphs must have labeled values, on both the vertical axis and the horizontal axis. Explain that pie graphs must have labeled values (often percentages) for each of the “slices” of the graph.

### Practice

- Distribute copies of books in the What Can We Do about Pollution? series at stations around the classroom.
- Pass out copies of the Graph Scavenger Hunt activity sheets and

go over the instructions with the class. Explain that students are going to be looking for examples of two bar graphs and two pie graphs in the What Can We Do about Pollution? books. They will list the book and page number for each graph they find, and they will provide short descriptions of something they learned from each graph.

- Circulate among the students to provide help, if needed. Encourage students to look closely at each graph’s features (for bar graphs: vertical and horizontal values; for pie graphs: percentage labels) to help them to understand what information it is conveying.

### Discuss

- Why are bar graphs and pie graphs useful? How do they help us understand what we read?

### Evaluate

- Evaluate students’ Graph Scavenger Hunt activity sheets for completion and accuracy.

## Lesson 2

### The 3 Rs in the Classroom

#### Purpose

Students will work together to determine ways to reduce, reuse, and recycle in their classroom.

#### Materials

- What Can We Do about Pollution? series
- Paper and pencils
- Chart paper or poster board

#### Pre-Read

- What do you know about pollution? Why is pollution something we should care about?
- How can our class help to reduce pollution?

#### Read

- Read What Can We Do about Pollution? series

#### Model

- Discuss with students that everyone has a responsibility to reduce pollution, and that one of the best ways that everyday people can contribute is by following the

3 Rs: reduce, reuse, and recycle.

- Ask the students to define the 3 Rs. Write their definitions on the board.
- Explain that the class will be working together to determine specific ways that they can reduce, reuse, and recycle as a group.

#### Practice

- Ask students to quietly brainstorm ways that the class can reduce, reuse, and recycle. They should record their thoughts on a piece of paper.
- After students have had time to independently brainstorm, they should find a partner (or two) with whom they can discuss and combine their lists.
- Once pairs have discussed their combined lists with one another, open up the discussion to include the whole class. Use chart paper to

list all student suggestions for how the class can reduce, reuse, and recycle.

- After all three Rs have been addressed, ask the group to choose one or two of the most practical suggestions from each list that the class can commit to work on as a group. Post these choices prominently in the classroom.

#### Discuss

- What can we as a class do to make sure we follow through with our commitment to reduce, reuse, and recycle?
- Can you think of any ways you can reduce, reuse, and recycle in your life outside of school?

#### Evaluate

- Assess students' participation in discussion.

## Lesson 3 Green Cleaning

### Purpose

Under supervision, students will mix and test various green cleaning products.

### Materials

- *How Can We Reduce Household Waste?*
- Small mixing bowls and spoons
- Measuring cups and spoons
- 1 to 3 funnels
- 2 small spray bottles
- 1 small jar
- 1 small plastic squeeze bottle
- Rags or washcloths
- Designated surfaces to test cleaning products on (windows, hand-mirrors, cabinets, whiteboard, bookcases, classroom sink, etc.)
- Ingredients for green cleaning products (Green Cleaning Product Recipes reproducible) (p. 7)

### Prepare

Note: This lesson works best if students can be split into small groups and supervised by additional adults in the classroom, either teacher's aides or parent volunteers. If this is not possible, rather than splitting students into groups to create green cleaning products with adult supervisors, ask for individual student volunteers to help mix the

ingredients for the whole class.

- If splitting students into four groups, do the following:
  - Assign adult supervision to four Green Cleaning Product stations.
  - Distribute appropriate ingredients and materials to each station.

### Pre-Read

- What are some cleaning products you know of?
- What do you know about them?

### Read

- Read *How Can We Reduce Household Waste?*

### Model

- What are some of the ways common household cleaners cause pollution? Encourage students to find evidence from the text to support their answers. Track student responses on the board.
- What can we do to reduce these harmful effects?

### Practice

- Explain that students will be working in groups to make their own green cleaning products for

the classroom.

- After students have split into their groups and settled into their stations, they can begin to follow their designated recipes to mix their cleaning products, under the supervision of their assigned adult.
- Once each cleaning product has been mixed, give students the chance to test their products on appropriate surfaces throughout the classroom.
- If time allows, let students rotate through stations to test other cleaning products as well.
- In their groups, students should assist their adult supervisors in cleaning up their stations.
- Label and store cleaning solutions in the classroom for future use.

### Discuss

- How did our green cleaning products work? Did any work better than others?
- What are some advantages of using products like the ones we made today?

### Evaluate

- Assess students' participation in the activity and discussion.

## Lesson 4

### Write a Letter

#### Purpose

Students will write a letter to local, state, or national leaders regarding pollution issues.

#### Materials

- What Can We Do about Pollution? series
- Chart paper or whiteboard
- Copies of Letter-Writing Graphic Organizer (p. 8)
- Paper and pencils, or computers with word-processing software
- Postage stamps (optional)

#### Prepare

- Research the contact information (e-mail addresses or mailing addresses) for government officials at the local, state, and/or national level. Determine which representatives would be the most appropriate for students to send letters to, and display these individuals' contact information in the classroom.

#### Pre-Read

- Why is it important for us to be aware of the effects of pollution?
- What are some ways we can help solve some of the problems caused by pollution?

#### Read

- Read the What Can We Do about Pollution? series.

#### Model

- Explain that students will be writing letters to their leaders asking them to support efforts to reduce pollution.
- Use chart paper or the whiteboard to make lists of the negative effects of the forms of pollution in the book series. Students should refer back to the books in the series to provide examples for these lists. Each list should contain at least three items.

#### Practice

- Using the lists generated by the class, ask students to choose which type of pollution they would like to write to a government official about.
- Pass out copies of the Letter-Writing Graphic Organizer to help students plan their letters. Use this organizer to remind students of the necessary components of a letter. All components (greeting, introduction, body, closing, and signature) should be present in students' letters.
- Students should then fill in their graphic organizers with at least three reasons they care about the effects of the form of pollution they have chosen. Students can

refer to the lists generated by the class, the books in the What Can We Do about Pollution? series, or their own experiences and background knowledge. Circulate throughout the classroom to provide help, if needed.

- Once students have completed their graphic organizers, they can transfer their thoughts into final format, either as handwritten or typed letters, or as e-mails. Using the contact information displayed for the class, students can address and send their letters or e-mails.

#### Discuss

- What did you think of the experience of writing a letter to a government leader?
- What are some other ways you can help to reduce pollution?

#### Evaluate

- Assess students' final letters for clarity and form.

Name \_\_\_\_\_

Date \_\_\_\_\_

## Graph Scavenger Hunt

Look through our books about pollution to find two bar graphs and two pie graphs to put into the table below. Make sure you list the book and page number where you found each graph! For each graph you find, give a short description of something you learned from the graph.

Bar Graph or Pie Graph?	Source Book	Page Number	Description



Name \_\_\_\_\_

Date \_\_\_\_\_

## Green Cleaning Product Recipes

### Glass Cleaner

**Ingredients:****1 cup** club soda**1 tablespoon** lemon juice**Directions:**

Mix ingredients in a bowl and pour through a funnel into a spray bottle. Spray onto surfaces and wipe down with a rag or washcloth.

### Scouring Paste

**Ingredients:****¼ cup** baking soda

Water, added gradually to make a paste

**Directions:**

Mix ingredients in a bowl and dab onto surfaces with a damp rag or washcloth. Store in a small jar.

### All-Purpose Cleaner

**Ingredients:****½ cup** white vinegar**½ cup** water**Directions:**

Mix ingredients in a bowl and pour through a funnel into a spray bottle. Spray onto surfaces and wipe down with a rag or washcloth.

### Furniture Polish

**Ingredients:****¾ cup** olive oil**¼ cup** white vinegar**1 teaspoon** lemon juice**Directions:**

Mix ingredients in a bowl and pour through a funnel into a plastic squeeze bottle. Apply to surfaces using a rag or washcloth.

## Letter-Writing Graphic Organizer

**Greeting** ( "Dear Senator/Representative/Governor . . . ; Mrs./Ms./Mr. . . . "):

**Introduction** (Why are you writing this letter? What do you want your reader to understand about your topic?):

**Reason 1:**

**Reason 2:**

**Reason 3:**

**Closing** (Thank your reader for his or her attention and let your reader know you are finished writing):

**Signature** ( "Sincerely, . . . " )