



# WASTE INVADERS

## Classroom Guide

# PREVIEW

### Welcome to *Waste Invaders*!

The *Waste Invaders* comics—part of the Think Earth Environmental Education Curriculum—will give upper elementary students a basic understanding of where our trash and wastewater come from, where they go, and how to reduce the amount of solid waste and wastewater we produce.



#### **Waste Invaders Part 1** covers how humans:

- use natural resources
- create a lot of waste
- handle their waste with disposal systems

#### **Waste Invaders Part 2** addresses:

- the problems of creating so much waste
- some possible solutions

This guide can help you and your students use the *Waste Invaders* comics effectively in the classroom. The guide contains:

- |   |             |
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# What Students Will Learn with Waste Invaders

## Concepts

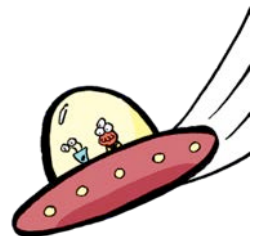
*Waste Invaders* presents the following concepts:

- The Earth is a beautiful place that provides natural resources that people use to live and to make a lot of products.
- People create a lot of waste, including solid waste, wastewater, and air emissions.
- Systems have been created to handle people's waste: sanitary landfills, waste-to-energy plants, wastewater treatment plants.
- So...what's the problem?
  - Creating so much waste wastes natural resources.
  - Waste does not just go "away."
  - Waste can pollute the environment.
  - Dealing with waste costs money.
- What are some solutions?
  - Reduce, reuse, recycle.
  - Balance our needs with the needs of the environment. That is, think about the Earth and the environment because what's good for the environment is good for **people**.

## Behaviors

*Waste Invaders* will motivate students to help reduce waste and reduce pollution from waste by practicing the following behaviors:

- Conserve resources, using only what is really needed (e.g., paper, plastic, water).
- Choose reusable rather than disposable products when possible.
- Buy products with the least amount of packaging.
- Recycle paper, metal, glass, and plastic.
- Buy products that are made from recycled materials and that are recyclable.
- Reuse items, find other uses for them, or give them away, when possible, rather than throw them away.
- Repair items instead of throwing them away and buying new ones.
- Use less water.
- Keep the environment clean and litter-free; be sure all non-hazardous trash ends up in a trashcan.





## How to Use *Waste Invaders* in the Classroom

This guide provides a wide range of resources and activities. Read and discuss the *Waste Invaders* comics with your students as outlined below. Then, use as many of the follow-up activities as you choose to fit your students and the time you have available.

1. If desired, pre-teach the academic vocabulary found on page 5.
2. Activate students' prior knowledge and prepare them for reading each comic using the pre-reading questions found in the discussion guides on pages 6 and 8. You can use these questions to stimulate group discussion about natural resources and waste, or have students answer them in writing and then discuss their answers as a class or in small groups.
3. If students are unfamiliar with comics, print or project *How to Read Comics* (page 4) and review it together.
4. Read through each *Waste Invaders* comic with students in small groups or with your whole class. You can print or project the comics or have students view them on computers or tablets.
  - On each page, give students some time to look at the pictures silently, and then read the text aloud together. If desired, you can have students read dialogue aloud in a reader's theater format—students often enjoy using different voices and making sound effects.
  - At the end of each page, ask students to explain what happened in the pictures and articulate their understanding of the concepts.
5. After reading each comic together, you may opt to have students read it again on their own or with a partner. Ask them to look for details they may have missed in the group reading.
6. Use the questions in the discussion guides to reinforce students' understanding of the concepts presented in the comics and to get them thinking about what they have learned and how they can apply it to their own lives. Encourage students to go back to the comics to find answers if they need to.
7. Conduct *Follow-up Learning Activities* to extend student learning. These activities will reinforce the concepts and lead students toward applying them to their own lives.



## Waste Invaders Follow-Up Learning Activities *(continued)*

### Weigh Advantages and Disadvantages

Have students complete graphic organizers to analyze the advantages and disadvantages of behaviors that affect the environment. Explain to students that weighing the advantages and disadvantages to themselves and to the environment will help them make smart choices. Help students see that the decision of what to do sometimes depends on whether people are more concerned about now or about the future. Point out that sometimes the decisions aren't easy. There are two example charts below. Reproducible, blank charts can be found on page 14.

Question: *Should I use disposable plates, glasses, and cups made from paper and plastic on a picnic instead of using washable ones?*

	Advantages	Disadvantages
Me	<ul style="list-style-type: none"> <li>• easier to carry</li> <li>• no cleanup</li> <li>• less to bring home</li> </ul>	<ul style="list-style-type: none"> <li>• must buy disposables</li> </ul>
The Environment	<ul style="list-style-type: none"> <li>• less water used to wash dishes</li> </ul>	<ul style="list-style-type: none"> <li>• more trash</li> <li>• more natural resources used</li> <li>• chance of litter</li> </ul>

Question: *Should I take a quick, 5-minute shower instead of a longer shower or bath?*

	Advantages	Disadvantages
Me	<ul style="list-style-type: none"> <li>• saves time</li> <li>• saves money we pay for water and energy</li> <li>• feel good about saving water</li> </ul>	<ul style="list-style-type: none"> <li>• not as enjoyable</li> <li>• must hurry</li> </ul>
The Environment	<ul style="list-style-type: none"> <li>• saves water</li> <li>• saves energy</li> </ul>	

### Create Displays, Posters, or Blog Posts

Have students create displays or posters showing suggestions for environmentally friendly behaviors. Put them up around the school to encourage positive environmental behaviors. Or, have students create blog posts or social media posts for the school's website or media accounts.



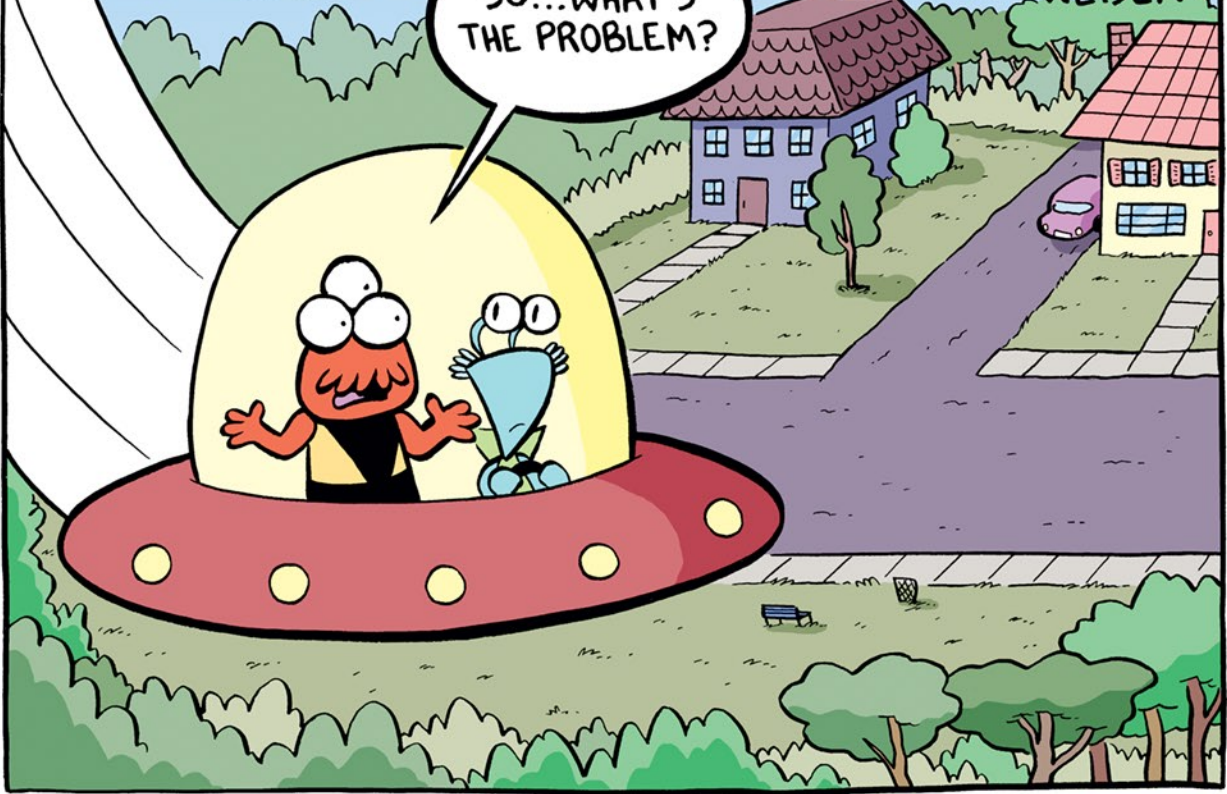


OK, EEKO, HUMANS  
THROW OUT THEIR TRASH,  
WHICH TRUCKS TAKE AWAY,  
AND THEIR WASTEWATER  
DISAPPEARS INTO  
DRAINS.

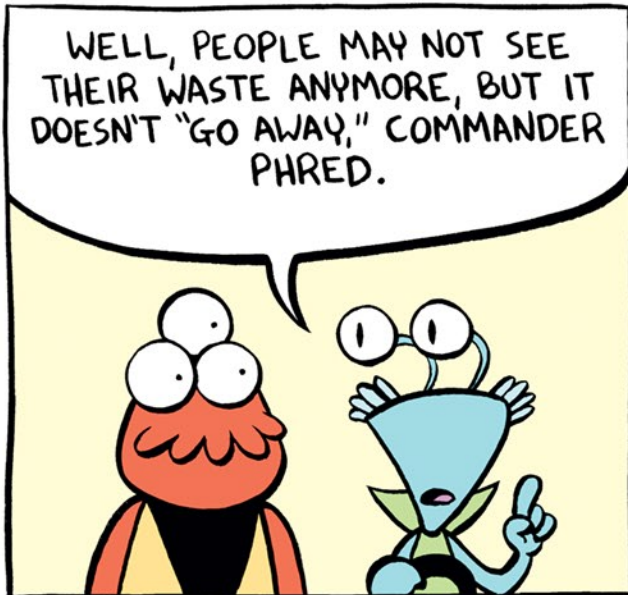
# WASTE INVADERS

Part 2 by JOEY  
WEISER

SO...WHAT'S  
THE PROBLEM?



WELL, PEOPLE MAY NOT SEE  
THEIR WASTE ANYMORE, BUT IT  
DONES'T "GO AWAY," COMMANDER  
PHRED.



THERE IS NO "AWAY"!





A LOT OF WATER BECOMES WASTE AS WELL.

IN MANY PLACES ON THE PLANET, EACH PERSON USES ABOUT 100 GALLONS OF WATER EVERY DAY, AND A LOT OF IT GOES DOWN DRAINS AS WASTEWATER!

FLUSHING TOILETS...

...TAKING SHOWERS...

...WASHING HANDS...

...BRUSHING TEETH...

...WASHING CARS...

...WASHING DISHES...

...WASHING CLOTHES...