



Lesson 5

MANAGING WASTE THROUGH PERSONAL CHOICES

Lesson Focus

In this lesson, students will be given various scenarios and asked to identify the problem and produce two solutions.

Lesson Objective

The student will be able to clearly communicate at least one workable positive solution for each scenario in which there are multiple avenues of personal behavior.

Grade Level 4	Duration 50 Minutes	Subject Area Science	Vocabulary reduce, recycle, refuse, reuse
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Louisiana Student Standards for Science

LSSS (2017) | 5-ESS3-1

Generate and compare multiple solutions about ways individual communities can use science to protect the Earth's resources and environments.

Materials List

Per Student

- 1 copy of **Activity Sheet #1**
- 1 copy of **Activity Sheet #2**

Activity Sheets

- Scenarios
- Check for Success

Advance Preparation

- Run off copies of the desired scenarios for each of the five groups (**Activity Sheet #1**).
- Make copies of **Activity Sheet #2**.

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Background Information

Things and items that are no longer useful or wanted, and that have been thrown away are considered trash. When unwanted waste is not disposed of properly, whether intentionally or unintentionally, it becomes litter. Littering is often the result of careless behavior.

A 2023 study of litter in Louisiana found that there are approximately 143,800,000 pieces of litter on Louisiana's roadways. Interstate highways are the most littered roadways, with an average of 10,178 pieces of litter per mile. The highest percentage of aggregate litter (visible + micro litter) by packaging material is plastic (43.1%), followed by tobacco-related products (24.5%) and metal (10%). The most common aggregate litter items are cigarette butts (21%), plastic beverage containers and cup pieces (13.8%) and plastic fast-food pieces (7.2%) (Carson, 2023c).

Most Louisiana citizens (92%) believe that litter is a problem (Carson, 2023b). The top reasons people litter are convenience and laziness. Furthermore, 88% of Louisiana citizens agreed that litter harms humans and animals, affects environmental quality, contributes to flooding, reduces property values, negatively impacts tourism and decreases business revenues (Carson, 2023a).

There are many important ways we can take care of the environment – especially when it comes to keeping our spaces litter-free. An important way to keep the environment clean is to make every effort to reduce the amount of waste we produce. Reducing the amount of waste we consume reduces the potential that it will become litter as well as reduces the amount of waste that goes into the landfill. By making environmentally responsible personal choices and adopting positive behaviors, everyone can become a good steward of the environment.

The most effective way to be an environmental steward is to adopt the waste reduction and management best practices of Refuse, Reduce, Reuse and Recycle.

- **Refuse** – This practice focuses on minimizing wasteful consumption by not accepting items that aren't essential. Refusing a plastic drinking straw, condiment packets that you won't use or a plastic shopping bag when you only have one or two items are just a few examples of how you can reduce waste.
- **Reduce** – This practice focuses on minimizing wasteful consumption by purchasing and using less. Examples of reducing strategies include using just one napkin instead of two or three with your lunch, using both sides of a piece of paper at school, bring a reusable water bottle instead of a single-use plastic bottle and using reusable containers for your snacks and lunch instead of plastic zip bags. This concept encourages reducing what we buy and trying to focus on purchasing essential materials with as little waste at the end as possible.
- **Reuse** – This practice focuses on considering what we can reuse after the original use of an item is complete. Instead of putting something in the trash headed to the landfill, consider how it can be used for another useful purpose. Examples of reusing strategies include using an empty jar as a pencil holder, making a bird feeder from a milk jug or donating unwanted clothes to charity.

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- **Recycle** – This practice focuses on the process of collecting and processing materials that would otherwise be thrown away as trash and remanufacturing them into new products. Recycling reduces the amount of waste sent to landfills and incinerators, conserves natural resources such as timber, water and minerals, and prevents pollution and reduces greenhouse gas emissions. Used paper can be recycled to make new paper plates or toilet paper, aluminum cans can become new aluminum cans, plastic bottles can be recycled to make carpet or clothing, and glass can be recycled to make other glass items.

By choosing behaviors aligned with the 4 R's, we'll reduce waste and redirect materials bound for our landfills into other purposeful uses. Our personal choices and positive behaviors can make a big difference in keeping our environment clean and healthy.

References

- Carson, C. (2023a). Louisiana Litter Research: Executive Summary. Keep Louisiana Beautiful. Available at <https://keeplouisianabeautiful.org/litter-study>
- Carson, C. (2023b). Louisiana Litter Research: Public Attitude Study. Keep Louisiana Beautiful. Available at <https://keeplouisianabeautiful.org/litter-study>
- Carson, C. (2023c). Louisiana Litter Research: Roadway Litter Study. Keep Louisiana Beautiful. Available at <https://keeplouisianabeautiful.org/litter-study>
- TRVST. (2023). The importance of 4Rs – Refuse, reduce, reuse, recycle. TRVST. <https://www.trvst.world/sustainable-living/importance-of-4rs-refuse-reduce-reuse-recycle>

Procedure

Engage – 5 Minutes

1. Watch Yogotar's - Educational Video. **A lesson on littering to inspire environmental stewardship for children – SmartKids** (1:54) <https://www.youtube.com/watch?v=4pbXLw6NDBM>
 - **What was the main point of this video?** *It matters where we put our trash.*
 - **What are some of the problems that occur when we litter?** *It's messy and smelly. Animals can be harmed by litter. Litter can end up in the water and lakes.*
 - **What do you do if you don't see a trash can?** *Hold your trash until you find one.*

Explore – 15 Minutes

1. **Activity Sheet #1** has 12 scenarios from which you can choose to give your students. Divide students into five groups. Distribute a Scenario page from **Activity Sheet #1** to each member of the group. Each member of the group should have the same scenarios.
2. Have the groups read through the scenarios, identify the problem and write out the problem.
3. Next, have students brainstorm two solutions for each scenario. At the end of 15 minutes, they should be prepared to present their scenarios to the rest of the class.

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Explain – 25 Minutes

1. Have students take turns reading the scenarios, the problem they identified in each scenario, and the two solutions that they came up with for each scenario. Discuss their solutions with the class.
2. Questions you might use to guide the discussions:
 - **Do you think this scenario is something that might happen in real life? Why?**
 - **Which of the two solutions is the best one and why?**
 - **Can you think of other solutions that might be tried to deal with the scenario?**
 - **Will the solution be easy to do?**
 - **Will the solution have a cost?**
 - **Will the solution permanently solve the problem?**
 - **Why is it important for us to prevent our trash from becoming litter?**

Expand – 10 Minutes (Optional)

Have students come up with a scenario of their own. Then share the scenarios with the class. Identify the problem and two possible solutions.

Take Action

1. Close the lesson by asking the students what they learned about finding solutions to common trash situations.
 - **What can students do to reduce the amount of trash and litter in their surroundings?**
2. Have students create a pledge to follow the 4 R practices.
3. Have students create posters to support the 4 R practices at their school.

Evaluate

1. The scenario activity sheets can be graded.
2. A short, three-question quiz - **Activity Sheet #2**.

Online Resources

Louisiana Sugarcane. **Don't Litter Louisiana.**

https://www.youtube.com/watch?v=QX9nmVkl_M (0:30).

A public service announcement about the problems of littering.

PBS LearningMedia. **Kids Go Green: Waste less.**

<https://lpb.pbslearningmedia.org/resource/ee18-sci-greentm/kids-go-green-waste-less> (3:46).

This video shows how students at a school in Brooklyn, NY, worked to reduce the amount of waste in their school and to better help students recycle waste.

PBS Terra. **How FIVE BILLION Pounds of Las Vegas Garbage Powers a City.**

<https://www.youtube.com/watch?v=aHzltu6Tvl8> (9:14).

This video shows how Las Vegas manages with five billion pounds of waste a year. This video explores how the city deals with solid waste, recyclables, and food waste.

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Vista Lens. **Clean Pelican.**

<https://youtu.be/AlTYTggfjEg> (1:38).

The creation of Clean Pelicans, a group of citizens committed to picking up litter in Baton Rouge, LA.

Children's Books

IglooBooks. (2020). **The Life of a Little Cardboard Box: Discover an Amazing Story About Reusing and Recycling.** Igloo Books. ISBN-13: 978-1839032448

This book follows what happens to a cardboard box. Ages Preschool -5 years.

Read aloud at <https://www.youtube.com/watch?v=xWA3cL1STQE> (2:23)

IglooBooks. (2020). **The Life of a Little Plastic Bottle.**

Igloo Books. ISBN-13: 978-1839032455

This book introduces the concepts of reusing and recycling. Ages 4 - 8 years.

Read aloud at <https://www.youtube.com/watch?v=fclaNkzrRQU> (4:06)

Inches, A. (2009). **The Adventures of an Aluminum Can: A Story About Recycling.**

Little Simon, Simon & Schuster Publishing. ISBN-13: 978-1416972211

This tells the story of an aluminum can from the manufacturing line to the store shelf to returning to the recycling plant. Read aloud at <https://www.youtube.com/watch?v=WZbMVFmvNyE> (7:55)

Javernick, E. (2012). **What If Everybody Did That?**

Two Lions Publishing. ISBN: 0761456864

This book shows the consequences of thoughtless behavior in a child-friendly way. Ages 3 - 7 years.

Read aloud at <https://www.youtube.com/watch?v=lxKZHdJ4d24> (6:14)