

# RECYCLING LESSON PLAN

SUBJECT

**SCIENCE – LIFE SCIENCE**  
30-45 Minutes

GRADES

**SECOND - FIFTH**



**RECYCLE RIGHT** *Lancaster* ✓



# BACKGROUND *for Teachers:*



## WHO IS LCSWMA?

[LCSWMA \(Lancaster County Solid Waste Management Authority\)](#) is a municipal authority in charge of managing municipal solid waste (MSW)—or what most people think of as household trash—and recyclable materials for Lancaster County homes and businesses, as well as MSW for the City of Harrisburg and the surrounding Dauphin County communities.

LCSWMA owns and operates four facilities:

- [Transfer Station Complex](#) (1299 Harrisburg Pike, Lancaster)
- [Lancaster Waste-to-Energy Facility](#) (1911 River Road, Bainbridge)
- [Frey Farm Landfill](#) (3049 River Road, Conestoga)
- [Susquehanna Resource Management Complex](#) (1670 South 19<sup>th</sup> Street, Harrisburg)

Between all four facilities, LCSWMA manages more than 1 million tons of waste each year. Additionally, LCSWMA is recognized nationally for its leadership in the solid waste industry and its innovative [Integrated System](#), which includes a county-wide recycling program.

Our mission is to manage waste as a resource to protect and benefit our community. Our goal for the Recycle Right Lancaster initiative is to keep curbside recycling sustainable in Lancaster County by supporting local municipalities and providing ongoing education to the community.

## WHAT IS RECYCLING? It's a continuous cycle that requires three key steps:

1. **HOUSEHOLDS:** Consumers buy/use products, after which they separate these items into recyclables or trash.
2. **RECYCLING PROCESSORS:** Recyclables are sorted at materials recovery facilities (MRF) and sold to manufacturers.
3. **MANUFACTURERS:** Buyers turn recycled commodities into new products, driven by consumer demand.

## CONTAMINATION CRISIS

Recycling has become an important part of our society. As it's grown in popularity over the years, contamination rates also increased. Contamination occurs when materials are placed in the recycling bin that don't belong. This came to a head in 2018 when China, the world's primary market for purchasing recycled commodities, banned imported recyclables due to high contamination rates. This change caused a major disruption in the recycling process around the world and prompted LCSWMA to overhaul our program in Lancaster County. For more information, visit [recyclerightlancaster.org](http://recyclerightlancaster.org).



# BACKGROUND *for Teachers:*



## RECYCLING PROGRAM OVERHAUL

To keep curbside recycling sustainable, LCSWMA developed a solution to **reduce contamination in the curbside bin AT HOME**. This included simplifying the recycling process for people and focusing on four types of materials that are easily separated at the MRF and have a strong market for buyers who want this material to make new products:

1. Corrugated cardboard (like shipping and packing boxes)
2. Plastic bottles and jugs with necks
3. Metal food and beverage cans
4. Glass bottles and jars

**We call these materials the “BIG 4”. Only these materials should go into the recycling bin.** Ignore the chasing arrows (“recycling”) symbol, as it’s only a communication tool and doesn’t mean a product is recyclable.

For more information on how to recycle each of the Big 4, click on the instructional videos below or visit [recyclerightlancaster.org](http://recyclerightlancaster.org) to access the videos online:

- [How to Recycle Cardboard at Home](#)
- [How to Recycle Plastic at Home](#)
- [How to Recycle Metal at Home](#)
- [How to Recycle Glass at Home](#)

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## CONNECT WITH US ON SOCIAL MEDIA

We’d love to see your recycling education in action!

Tag LCSWMA in your photos on these social media channels:

- Twitter: [@LCSWMA](#)
- Instagram: [@LCSWMAPA](#)
- Facebook: [Lancaster County Solid Waste Management Authority](#)

## OBJECTIVES & Materials:

### STUDENTS WILL UNDERSTAND THE FOLLOWING:

1. How recycling helps the environment and protects natural resources.
2. How recycling only the “Big 4” materials will help keep curbside recycling sustainable for future generations.
3. How to identify items that can be recycled from those that cannot.
4. How to identify recyclables by shape, not by number or symbols.
5. How to Recycle Right at home and educate their family members.

**Collect the number of materials (recyclables items and trash) equivalent to the number of students to ensure each student gets a turn sorting. In addition, you will need:**

- Trash Can – see label in Recycling Relay Game Section
- Recycling Bin – see label in Recycling Relay Game Section
- Bucket or box

#### Recyclable Items:

**(No lids on any materials)**

- Soda cans
- Plastic water bottles
- Cardboard box (shipping box)
- Soup cans
- Detergent bottles
- 1-liter soda bottles
- Cat/dog food cans
- Glass beverage bottles
- Glass food jars

#### Trash:

- Napkin
- Diaper
- Pretend food
- Food wrapper (chip bag)
- Cereal box
- Plastic toy
- Plastic grocery bag
- Toilet paper roll
- Magazine
- Yogurt container
- Newspaper
- Carton

## EDUCATIONAL STANDARDS:

1. 4.5.K.D Humans and the Environment - Identify waste and practice ways to reduce, reuse and recycle.
2. 4.5.2.D Describe how people can help the environment by reducing, reusing, recycling and composting.
3. 3.4.5.B2 Describe how waste may be appropriately recycled or disposed of to prevent unnecessary harm to the environment.
4. 4.5.4.D Describe a waste stream. Identify those items that can be recycled and those that cannot.
5. 4.5.5.D Explain how different items are recycled and reused.



## LESSON INTRODUCTION:



1. Ask students to raise their hands if they help with recycling at home.
2. Ask students what they know about recycling.
3. Ask students “Why do we recycle?”
4. Ask students to list some common items they think can be recycled.  
Record their answers on a board or chart.



# Content/LESSON:

6

- **(What)** Explain to students that recycling has changed in Lancaster County.
- **(Who/Where)** Explain that these changes impact what should go in your recycling bin at home, everywhere in Lancaster County.
- **(Why)** Explain that in order to keep recycling sustainable, we must only recycle the “**Big 4**” to prevent trash from getting into the recycling bin and state:
  - Contamination, or trash, causes problems when separating the recyclables. Trash should not be in the recycling bin.
- **(What)** Introduce the “**Big 4**” items that can be recycled in Lancaster County.
  - Play YouTube video: <https://youtu.be/2rjd3CtgBCM>
- Explain how these items get turned into new products once they are recycled.
  - Recycling Process: Household items>Sorting Machines> Factories to produce new items
- Emphasize that it’s also important to use reusable products such as a reusable water bottle, a reusable straw, and a reusable grocery bag. This helps reduce the amount of waste we produce to begin with.
- Have students complete “What Goes in the Bin” Sorting Worksheet (page 2 in Student Handout Section) prior to playing the Recycling Relay Game. Answer key on (page 3 in Student Handout Section).
- Play Recycling Relay game (page 1 in Recycling Relay Section).



# STUDENT HANDOUTS





# VOCABULARY:

## **recycling**

*noun*

The process of reclaiming raw material or reusing them to create new products.

## **sustainable**

*adjective*

Act responsibly about the products we use or throw away in order to save natural resources and protect the environment.

## **reusable**

*adjective*

Able to be used again or more than once.

## **contamination**

*noun*

Any item in the bin that is not the “Big 4”. This includes trash and other products people “think” are recyclable.

## **corrugated cardboard**

*noun*

A box with a fluted sheet (ex: shipping box).

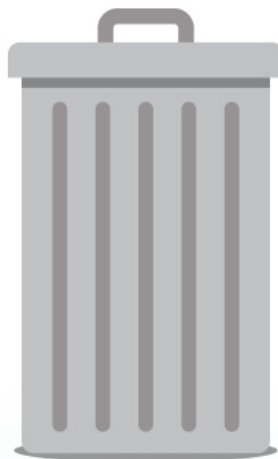
## **neck (on plastic materials)**

*noun*

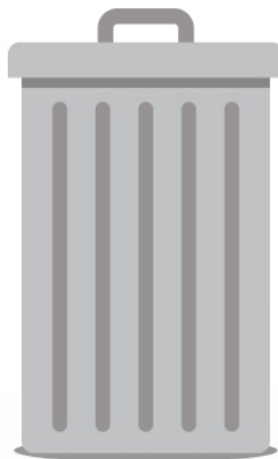
An opening that is smaller than the base of a plastic material (ex: soda bottle).

# 2

## WHAT GOES *in the* BIN?



# Answer KEY:



# RECYCLING RELAY

*a STUDENT Game*



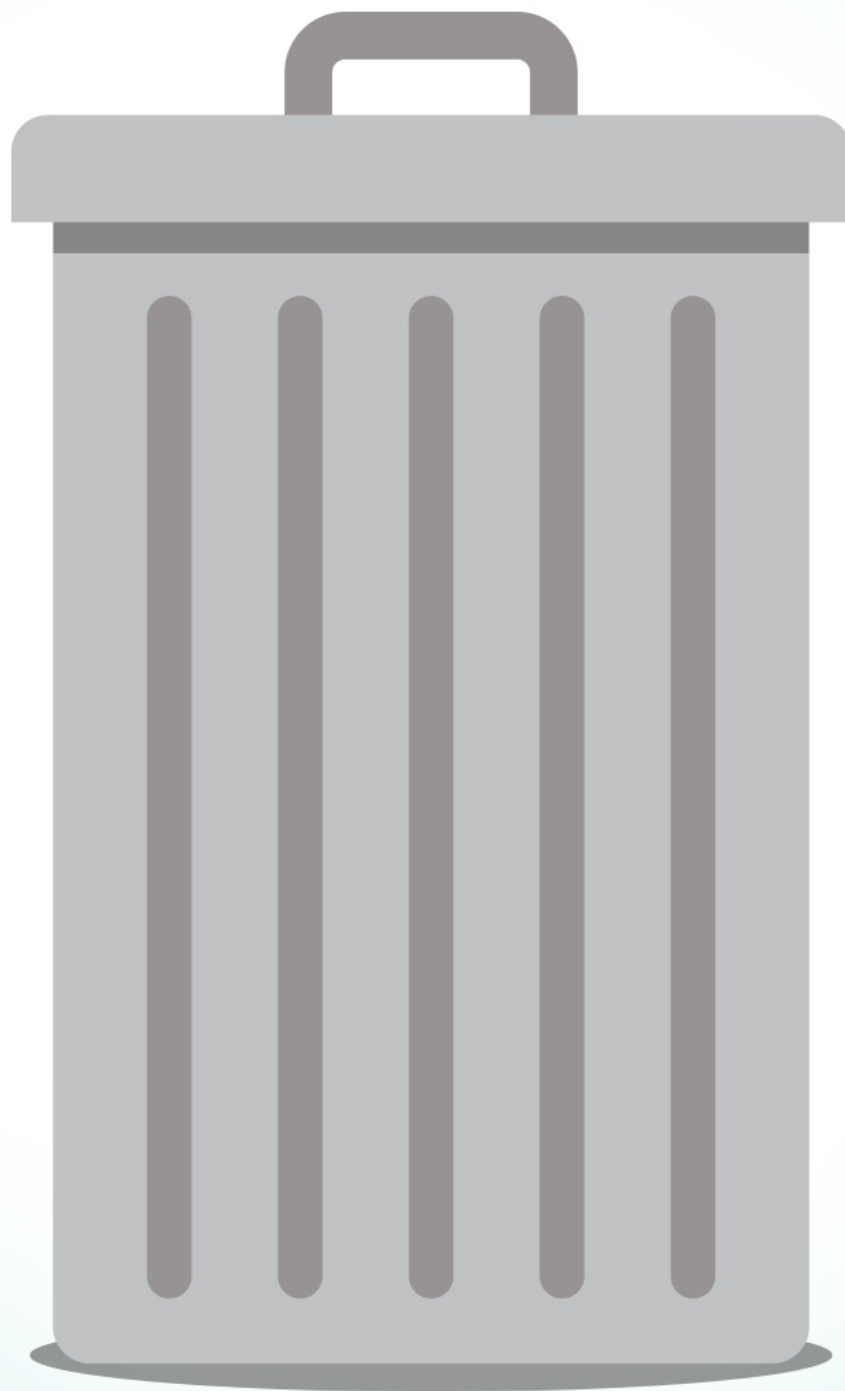
# Recycling Relay Game

1. Place recycling bin and trash can at end of hallway or room.
2. Place items into one bucket at other side of the hallway or room.
3. Have students count off by 2s and form two lines next to the bucket.
4. Explain to students they can choose one item from bucket, walk down to the trash and recycling bins, and place the item into the bin they think it belongs.
5. Continue game until all items in buckets are sorted.

## After Game:

6. Take trash and recycling bins back into classroom and review the results.
  - a. Ask the students if they think each item belongs where it was placed.







# TAKE HOME ACTIVITY & MATERIALS







# RECYCLING *Home Check-Up:*



Directions: Do a check-up of your recycling bin and trash at home. Sort through the items and record on worksheet what you find.

<b>Recycle</b>	<b>BIG 4</b>	<b>Trash</b>
<p><b>1. Corrugated Cardboard:</b></p>  <p><b>CORRUGATED CARDBOARD</b></p>	<p><b>2. Plastics:</b></p>  <p><b>PLASTIC BOTTLES &amp; JUGS WITH NECKS</b></p>	
<p><b>3. Metals:</b></p>  <p><b>METAL FOOD &amp; BEVERAGE CANS</b></p>	<p><b>4. Glass:</b></p>  <p><b>GLASS JARS &amp; BOTTLES</b></p>	

# TAKE HOME *Activity:*



**Directions:** Share what you've learned about the recycling changes with your family members, including what you found in the Recycling Home Check-Up. Take the pledge below and return to school.

- I will only recycle the "BIG 4".
- I have sorted my recycling bin at home.

Family members names:

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## BIG 4

CORRUGATED  
CARDBOARD



PLASTIC BOTTLES & JUGS  
WITH NECKS



METAL FOOD &  
BEVERAGE CANS



GLASS JARS & BOTTLES



## PARENT'S *Corner:*

Today, students learned about the recycling changes in Lancaster County and how to Recycle Right! They learned that in order to keep recycling sustainable, they must only place the “Big 4” in the bin and keep all other contaminants (trash) out of the bin. With the increased contamination in the bin, this has made the process of sorting more difficult at the recycling processing facility.

You can help reinforce this lesson at home by reminding your family of these rules when recycling. It is important to only recycle the “Big 4”.

A few questions to ask your child:

- Why is it important to recycle?
- What are the “Big 4” materials?
- Why do we only place the “Big 4” in the recycling bin?
- Can you find anything in our recycling bin now that does not belong?

### Resources:

- [www.Recyclerightlanaster.org](http://www.Recyclerightlanaster.org)
  - Info on recycling and more FAQ's
- [www.lcswma.org](http://www.lcswma.org)
  - Info on the Lancaster County Solid Waste Management Authority's Integrated System, or how we manage 1 million tons of waste per year in Lancaster County.



## FAQS:

**Q: Why did the guidelines change for curbside recycling?**

**A:** To address the contamination issue in Lancaster County, and ensure curbside recycling is sustainable, LCSWMA went “back to the basics” with four material types that have a strong domestic market—meaning, there is a demand for this material by manufacturers in the U.S. We call these materials the “Big 4” and include: 1) corrugated cardboard (like shipping and packing boxes), 2) metal food and beverage cans, 3) plastic bottles and jugs with a neck, and 4) glass bottles and jars.

**Q: Where can I take items that are recyclable but shouldn't go in my curbside bin?**

**A:** Some items, like newspaper, cereal boxes, and plastic bags, can be recycled but should not go in your curbside recycling bin. If you think something could be recycled, please visit [earth911.com](http://earth911.com) to verify if there is a drop-off location near you. If you aren't sure, please discard the item in your trash. Placing material in the recycling bin in hopes it will be recycled is “wishful recycling” and adds to the contamination crisis.

**Q: What happens to the items I put in the trash? Do they go to the landfill?**

**A:** Fortunately, in Lancaster County, material placed in the trash does not go to a landfill. LCSWMA owns two waste-to-energy (WTE) facilities where trash is combusted and turned into renewable energy. In fact, 1 in 5 Lancaster County homes are powered by trash!

