



LESSON 1: What is Litter?

OVERVIEW

Students explore their homes and school grounds in order to define and then distinguish between trash and litter. Students then create maps of their school grounds, neighborhood, park, etc., to prepare for a litter walk. Students will sort and then create graphs to answer questions about litter in their communities.

Learning Targets

- Students will define what trash and litter are, and be able to distinguish between the two.
- Students will use observation, aerial photography and/or mental mapping to create a map of their school/neighborhood in order to pinpoint the location of litter during a litter walk.
- Students will categorize, sort and graph their data from the litter walk in order to identify the most common types of litter at their school/neighborhood.

GLEs

See attachment

Materials Needed

- Recycled plastic bags
- Gloves
- Poster paper
- Crayons/markers

Background Information

What Is Litter?

Throughout the day, we use many different items to meet our needs. When these items are no longer useful, we dispose of them. Disposing might mean throwing a candy wrapper away in the trash can, recycling a soda bottle, composting an orange peel, donating used clothing, etc. Trash, recycling, composting, reusing – these are all different waste streams for the things you don't use anymore.

The examples given above are examples of proper disposal. So what happens when we improperly dispose of something?

There are two scenarios. One is that you could improperly dispose of something by placing it in the wrong waste stream. An example of this would be putting a banana peel in the recycle bin. An even worse example would be throwing away used motor oil (a hazardous waste) into the trash. The second scenario is that you improperly dispose of something in a public space – anywhere that is not your private property.

Both of the above scenarios have their own negative (and legal) consequences, but the last example describes litter (the verb).

Litter – Can It Be Accidental?

In short, yes. Whether you intentionally dispose, permit the disposal of, or create a condition that is likely to result in the disposal of litter – you have littered. [30: 2531] An example of “creating a condition that is likely to result in the disposal of litter” would include improperly securing loads in the back of truck beds, disposing of trash on your private property in a manner in which it is likely to escape, or overfilling a public trash receptacle.

Licensed commercial vehicle operators that are transporting waste as part of commercial or local government contracts may be provided an exemption from the above definition as long as their loads are covered at all times beyond loading and unloading. [30: 2531]

What Items Are Considered Litter?

Just about everything. In Louisiana, state statute refers to litter as “including but not limited to disposable packages, containers, sand, gravel, rubbish, cans, bottles, refuse, garbage, trash, cigarettes, cigarette butts, cigars, cigarillos, cigar or cigarillo tips, debris, dead animals, furniture or appliances, automotive parts including but not limited to tires and engines, trailers, boats and boating accessories, tools and equipment, and building materials, roofing nails, or other discarded materials of any kind and description.” [30:2504]

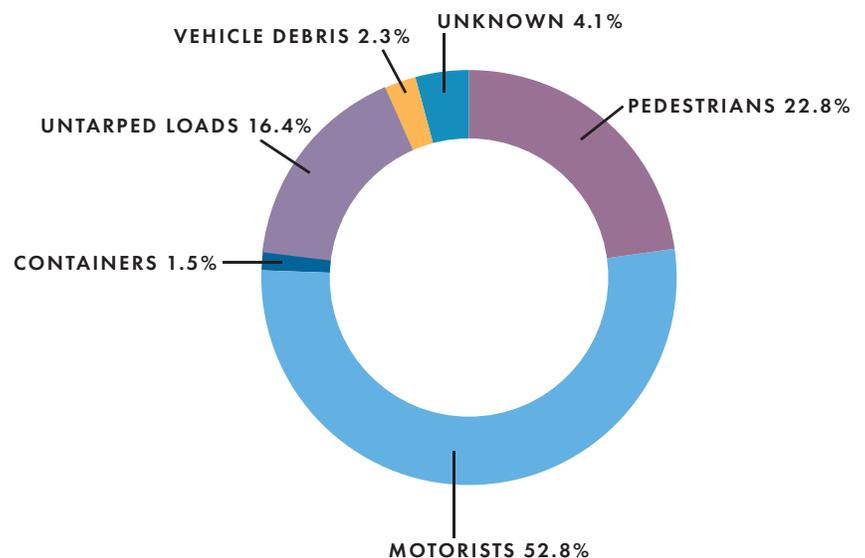
There are some legal exceptions to this rule. In Louisiana, this includes political pamphlets, handbills, religious tracts and newspapers, and other similar printed materials that are being used or distributed (even if unsolicited) in accordance with their intended use. The distribution of these items are protected by the U.S. Constitution and/or the Constitution of Louisiana.

Louisiana also excludes agricultural products that are being transported from the harvest or collection site to a processing or market site if reasonable measures are taken to prevent the agricultural product from leaving the transporting vehicle. Lastly, Louisiana excludes recyclable cardboard being transported in compressed bundles to processing facilities.

Where Does Litter Come From?

The largest land-based litter studies to date are Keep America Beautiful’s (KAB) 2009 National Visible Litter Survey and Litter Cost Study and Littering Behavior in America 2009.

On roadways, the largest source of litter are from individuals – motorists and pedestrians. These individuals account for 76% of all litter.



What Causes Litter?

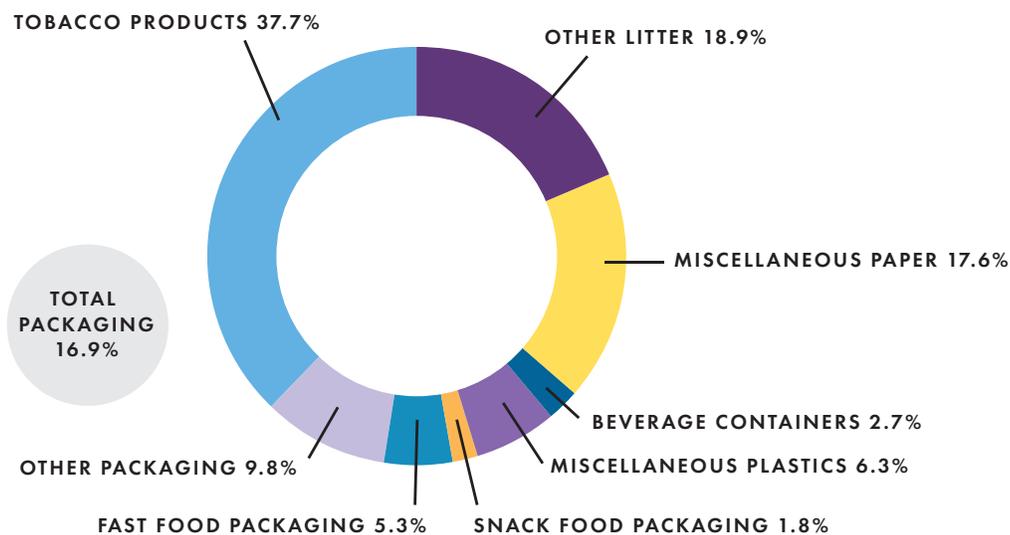
A variety of contexts ranging from site conditions to personal attitudes can contribute to litter. Existing litter and the presence of and distance between trash receptacles are examples of factors that can increase litter on a site. However, the site factors only explain about 15% of the likelihood that litter will occur. The rest (85%) is explained by personal attitudes toward littering. Additionally, while litter can be accidental, the vast majority (81%) was observed as occurring with notable intent.

What Are Commonly Littered Items?

The 2009 KAB studies examined litter found on roadways, and found that the most common item were tobacco products, like cigarette butts. Cigarette butts and confection wrappers were also the most commonly found items on non-roadway sites.

However, the vast majority of litter that is collected in marine environments, such as NOAA's Marine Debris Tracker Program, is plastic.

Furthermore, the 2009 KAB study shows that while overall litter rates have decreased since 1969, plastic litter has increased by 165.4%.



Sources

- Louisiana State Statutes
- KAB Littering Behavior In America - https://www.kab.org/sites/default/files/EndLittering_ForAffiliates-Teachers-Businesses_LitteringBehaviorinAmerica_2009Report_Final.pdf
- KAB 2009 National Visible Litter Survey and Litter Cost Study - https://www.kab.org/sites/default/files/EndLittering_ForAffiliates-Teachers-Businesses_2009_NationalVisibleLitterSurveyandCostStudy_Final.pdf

ACTIVITY (Suggested for Grades K to 4)

Part I – Engage

1. The day before this lesson is taught, ask your students to go through several garbage cans at their homes (send a note home with younger students to request adult assistance). Students should record the items that were found in their garbage cans.
2. Students return to class the next day ready to share what items they found. Record their observations on the board.
3. Ask your students why their parents were throwing all of these items out. This discussion will later be used to define trash, so a good consensus answer might be: They were throwing them out because they didn't want them anymore.
4. Now ask your students what they might call this list of items on the board. Answers may be trash or garbage.
5. Students now have a working definition of trash. Write this on the board. Ex. "Trash: things we throw away because we don't want them anymore."
6. Ask students what they would call these items if they were scattered all over their playground. From this students create a definition of litter to be written on the board. Ex. "Litter: trash that is not in the right place."
7. Americans create an average of four pounds of trash a day. If everyone in the class produces four pounds per day, how much does the whole class together produce per day? What about in your whole grade? Is that a lot of trash?
 - a. Have the kids hold a bag containing four pounds of apples. Let them take turns holding it and discussing how heavy four pounds actually feels.
 - b. What would happen if every student had a four-pound bag of apples, and let just one apple become litter? Would that be a lot of litter? Use this discussion about litter as a segue into the next part of the lesson.

Part II – Get Active

1. Now that students have defined litter, explain to the students that they will be participating in a study to find out where litter is most commonly found. Explain that they will do this by taking a litter walk around the campus (or in a location within close proximity to the school) and record their observations.
2. Students will now create a map of the area where they will do their litter walk. They may do this from mental memory, or using an aerial photograph from an Internet source such as Google Earth or MapQuest. Map details and features can be modified for grade level appropriateness, and provide an opportunity to instruct students on metric vs. English systems of measurement.
3. Have students create a hypothesis of where they believe they will find the most litter. Students may also develop an explanation for why they believe that location will have the most litter.
4. Also, have students hypothesize what are the most common types of litter they expect to find, and provide an explanation why. How much do they expect to find?
5. Before beginning the litter walk, explain proper safety procedures to students. It is often undesirable for younger students to handle broken glass or other sharp objects.
6. Using the plastic bags and gloves, have the students pick up any litter they find during the walk. Students should make a mark on their map each time they locate a piece of litter.

Part III

1. Back in the classroom, students begin to analyze their trash.
2. Using a bar scale or other device, determine the mass of the trash. Does this match the hypothesis created in Part II?
3. Sort the trash into four categories. The class can decide what the four categories will be (for example: soft drink cans, plastic, paper, other).
4. Have the students make a bar or picture graph of the amounts of trash in each category on their poster paper. Analyze these graphs to determine the most common type of litter found. Does the data match their hypothesis? Why or why not?
5. Have students analyze their maps. Did students find litter in the places they expected? Why or why not?

Part IV – Digging Deeper

1. Students will analyze the litter they collected one more time.
2. First, identify the most commonly littered item. (For example, students may find that, while plastic was the most common category, plastic straw wrappers were the most commonly found item.) Where did this trash come from? What would be some strategies to reduce the amount of trash? (For example, if straw wrappers were the most commonly found item, students may suggest the school purchase straws without wrappers.)
3. Second, have the students analyze the litter for reusable or recyclable items. Have students separate these items into a second pile from the non-reusable or recyclable items. Have students compare the size of the two piles and discuss why these items may have been littered when they could have been reused or recycled.
4. Third, discuss with kids how seeing trash on the ground at school or their neighborhood makes them feel. Who is responsible for dealing with this litter? (They are!) This is the beginning of the call to action.

CALL TO ACTION

Identify and implement changes that can be made to keep people from littering on your school grounds. Some examples may include increasing the number of trash cans on campus, focusing on higher traffic areas or having the cafeteria purchase straws without individual wrappers.

OTHER RESOURCES:

- **Digital Litter Mapper** <http://www.letsdoitworld.org/mapthewaste>
- **Tiny World Videos, Cleaning London's Streets** <http://thekidshouldseethis.com/post/80162019534>
- **Animals Save the Planet Video, Leopards Hate Litter** https://www.youtube.com/watch?v=VvFsMe8_NIM
- **Sesame Street - Don't Throw That Trash On The Ground** <https://www.youtube.com/watch?v=a9BUgRtH6vY>
- **Jill Hickey. Pattie Pitter She Hates Litter! The Canada Council for the Arts , 2001.**
- **"The Wartville Wizard"** (TeacherTube link: <http://www.teachertube.com/video/the-wartville-wizard-49860>)

Discuss the book with the class. Ask them why the Wizard was so angry? What did he do about it?

- **Disney Trash Can Study to Reduce Litter**

<http://www.buzzfeed.com/awesomer/things-you-probably-didnt-know-about-disney-parks#.tu3WBaqNq>

- **Keep Louisiana Beautiful Website** <http://keeplouisianabeautiful.org/>

- **Keep America Beautiful Website** <https://www.kab.org/>