

Stop the Drop: Awareness for Anti-Litter

Litter.

It can be seen on sidewalks, on the median, in parking lots and more. It's no secret that litter isn't fun. It's not attractive and can cause property values to drop. Litter causes about 25,000 car accidents a year. And litter attracts wildlife to urban areas causing everything from bear attacks to an increased amount of deer along roadways.

Litter is any item discarded improperly in public spaces. It can be intentional or a total accident. Regardless of how it happened, littering is a problem. Did you know it costs the United States \$11.5 billion every year to clean up litter? The state of Illinois spends about \$6 million a year to target the trash around highways alone.

In this lesson, students will be learning about litter and litter awareness focusing on their local community and the greater southern Illinois region. Students will be conducting a trash pick-up around their school and then using their findings to draw conclusions using evidence from their pick-up to create different ways to spread anti-litter awareness in their community.

Illinois Standards and Goals

Next Generation Science Standards

- **5-ESS3-1:** Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.
 - **Science and Engineering Practice:** Obtaining, Evaluating, and Communicating Information; Constructing Explanations and Designing Solutions; Analyzing and Interpreting Data; Carrying Out Investigations
 - **Disciplinary Core Ideas:** ESS3.C: Human Impacts on Earth Systems
 - **Crosscutting Concepts:** Systems and Systems Models
- **3-5-ETS1-2.** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
 - **Science and Engineering Practices:** Constructing Explanations and Designing Solutions
 - **Disciplinary Core Ideas:** ETS1.B: Developing Possible Solutions
 - **Crosscutting Concepts:** Influence of Science, Engineering, and Technology on Society and the Natural World

Illinois Social Studies Standards

- **SS.CV.4.5.** Explain how policies are developed to address public problems.

Objective:

- Students will track litter variation located on their school's property during a school litter clean-up day combining the data so that it can be used in an anti-litter campaign for their community.
- Students will use the information generated from the first objective to create an anti-litter campaign to be used in their communities and on school property.

Materials and Resources:

- Schools litter tally sheet
- Example litter tally sheet
- Litter Survey
- Example graph
- PowerPoint
- Clip boards or notebook or folder for a hard writing surface
- Writing utensils
- Enough trash bags or plastic shopping bags for each student
- Gloves
- First Aid Kit

Talk Moves

The curriculum writers suggest reviewing 9 Talk Moves to help aid in facilitating discussion between students as well as to elicit answers from individual students. The link can be found [here](#).

Safety Concerns:

- Students should be made aware of all safety precautions that should be taken when picking up trash on school grounds. This can include, but is not limited to:
 - Pick up trash with gloves on.
 - Maintaining a safe distance from roadways and traffic filled areas.
 - Using trash pickers to pick up sharp objects such as glass.
 - Washing hands after returning to class.

**Note: Instructors should maintain facility, school, and district policies regarding safety a priority when planning classroom lesson plans.*

Vocabulary

- **Litter:** trash, such as paper, cans, and bottles, that is left lying in an open or public place.
- **Awareness:** knowledge or perception of a solution or fact.
- **Solution:** a means of solving a problem or dealing with a difficult situation.
- **Campaign:** an organized course of action to achieve a goal.
- **Tally:** calculate the total number of.
- **Generate:** cause (something, especially an emotion or situation) to arise or come about.

Career Awareness

In this lesson, there is the opportunity to introduce students to new careers that they may have been previously unaware of including, but not limited to:

- Environmental Engineer
- Environmental Lawyer
- Environmental Scientist

- Environmental Educator
- City, County, and/or State Solid Waste Management and Divisions
- Hazardous Waste Management
- Recycling Coordinators
- City Planners
- EPA Regulators
- Non-profit coordinators

Accommodations:

- Vocabulary cards will be included in the resource section of this text this will help assist students that need visual or textual language. These cards will also be available in .pdf form for easy access on devices for the classroom or printing for the educator.
- The educator can make concessions for the students that have accommodations for presenting in front of others, as they will be in groups this student can give their group peer feedback.
- Recordings of the exit slip and other materials will be made available on the Clean SoIL website for ease of access for those students with accommodations for hearing or read aloud.
- Further accommodations and modifications will be made available on the Clean SoIL website or within the printed resource section for the curriculum.

Engagement (20 minutes)

- To engage the students and capture their attention, we will watch a short video about an awareness campaign done in Chicago.
 - [Climate crisis – stop littering! - YouTube](#)
- To determine the students' prior knowledge, the instructor will ask some questions following the video such as:
 - What is litter?
 - Have you seen litter in our community? If so, where? When? What was it?
 - How can we help our community stop litter?
 - What are your observations?
 - What do you wonder?
 - What is the problem?
 - Based on your observations, where is the child in the video?
 - What do we know about the litter on our school grounds?
 - What might the focus question be?
 - How can we reduce the amount of litter on our school campus?
 - How can we conduct an investigation to answer our focus question and solve the problem of littering on our campus?
 - What is the impact of litter on our campus?
 - How does littering impact the wider community and our environment?
- After discussion, the instructor will inform the class they are going to pick up litter on school grounds and then later work in groups to come up with solutions to littering like the one in the video.
- Before going to pick up trash, the instructor will:
 - Ask the class what items they think they need to accomplish the task.

- Make a list on the board of students' contributions.
- This is designed to get students to think about safety and risk management.
- The instructor will then fill in the gaps.

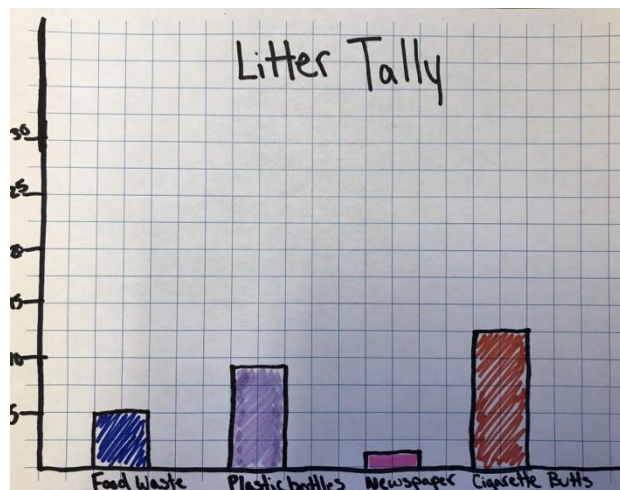
Exploration (40 minutes)

Part 1 (25 minutes)

- The instructor will start the lesson reviewing the pre-established safety precautions.
- The instructor will assign students to work in groups.
 - Each group should have a trash bag, a pair of gloves for each student, tally sheets, clipboards or notebooks to use as a hard writing surface and writing utensils.
- The instructor will prompt students to record all their findings as they pick up trash on their trash tally sheet. This should include:
 - Type of trash
 - Number of items
 - Location found
 - How they feel about finding this trash on school grounds
 - Any other observations students feel are important to record
- The instructor will provide a sample tally sheet for students to model off.
- Students will have about 15-20 minutes outside to pick litter up.
- At the teacher's discretion, students can either throw all the trash in the school dumpster or select a few items to bring inside and further discussion.

Part 2 (15 minutes)

- Once inside, students will work in groups using a bar graph to graph their findings from their tally sheet.



- Once they have graphed their findings, students will brainstorm plausible causes for the litter. Based on these potential causes' groups will produce one hypothetical solution.
 - Example solution: Based on the number of cigarettes butts we found; we believe that the school grounds should establish ash trays in these two locations.
- The teacher will give the students a survey worksheet to help guide their findings and thoughts.

Explain:

- Once students have had time to complete their worksheet, the teacher will transition and instruct students to use their evidence from the tally sheets, graphs and survey worksheets to share:
 - Their data
 - Their interpretation of their data
 - Their proposed solution
 - Example: We think we found a lot of cigarette butts on the ground because there are no ash trays for people to dispose of their cigarettes.
- Questions that the instructor can use to guide students include, but are not limited to:
 - What did you find the most of?
 - Where did you find this?
 - Was it in one area or scattered about?
 - What did you find the least of?
 - Where do you think this litter came from?
 - Based on where we think this litter is coming from, how might this influence our solution?
 - Does it change the solution? If so, how?
 - What do you think we could do to reduce the amount of these items on the ground?
- Students will use the litter survey worksheet to guide their thinking. They do not have to write in complete sentences. The survey is just a tool to guide student thinking and organize thoughts.
- Students will work with the same groups from the trash pick-up to complete the worksheet and produce a solution.
- They will write their solution on the back of the worksheet, as well as an explanation why.
- Answers to solutions could be as simple as:
 - Create posters for around the school and community
 - Conduct yearly trash pick-ups
 - Place more trash cans outside of school entrances
 - Create a video advertisement about keeping our school clean
- Students should also mention the types of trash they pick up around their school.
- Facilitator questions include, but are not limited to:
 - Was that common in other groups?
 - What did the other groups find?
 - Why do you think we are finding those specific items around the school?
- The instructor will facilitate a class discussion over the potential solutions everyone has produced to the anti-litter problem.
- The teacher will write all solutions on the board for all students to see.
- To help facilitate classroom discussion, the teacher can ask:
 - What are some obstacles that we might encounter trying to implement each solution?
 - What are the benefits of doing “Solution A” compared to “Solution B?”
 - How much time would this take?
 - What materials are needed for each solution?

- The instructor can challenge students to look at the solutions and predict obstacles they may encounter trying to enact each.
- The teacher will collect the tally sheet and survey once finished with the discussion.

Elaborate:

- The teacher will show students examples of regional awareness campaigns aimed towards litter.
 - The instructor can use the PowerPoint developed by Clean SoIL for this portion of the lesson.
 - The focus of this part of the lesson is to show students examples of an issue in southern Illinois and how a community member rose to the challenge to come up with a solution.
 - The PowerPoint has notes about Do Your Part Recycling located in Benton, Illinois. The program was started by Andy Lamont after Benton discontinued their recycling program in 2018.
 - Do Your Part Recycling also offers field trip opportunities. Please see the Clean SoIL Additional Resources page for more information.
- After the PowerPoint the instructor will ask questions including, but not limited to:
 - What are the different ways individuals and the community are reducing the amount of waste that litters our community?
 - How are solutions enacted that enable communities to reduce the amount of litter that is generated?
- The teacher will focus on talking to students about the different components of successful planning including but not limited to:
 - Goal setting
 - What materials are needed?
 - How much time is required to implement?
 - Is funding required?
- Some misconceptions students may have about litter include:
 - It is someone's job to pick up litter when it really is usually volunteers or government run programs that clean it up.
 - Students may also think that litter doesn't really harm anyone. This is where the teacher can share that litter can cause car accidents, hurt animals because they think it's food and more.

Evaluate:

- At the end of this, the teacher will facilitate a discussion on which solution the class should pursue together.
- Questions to help facilitate the discussion include, but are not limited to:
 - Which of these solutions do you think we should do as a class? Why?
 - What are some of the obstacles or challenges we might face while trying to carry out this solution?
 - Do those challenges make you think we should choose a different solution? Why or why not?
 - How can we plan to overcome these challenges?
 - What are some pros and cons of this plan?

- The class will decide on a solution and implement it. If it is something that can be physically displayed, it will be displayed in the hallway at the school for all to see. If it is something electronic, the instructor will share it with parents/guardians and/or the community.
- The summative assessment will be the survey worksheet. Students will need to complete each question, as well as write their solution on the back of the worksheet, as well as an explanation why. Students will not be graded upon their grammar, but if they are able to demonstrate if they have achieved the lesson objective.

References

NGSS Lead States. 2013. *Next Generation Science Standards: For States, By States*. Washington, DC: The National Academies Press.

Stop the Drop Primary School Litter Resource Pack. (n.d.). Retrieved September 30, 2021, from https://www.herefordshire.gov.uk/downloads/file/13401/stop_the_drop_primary_school_litter_resource_pack.pdf.