THE STORY OF LITTER

Lesson Plan

Students will be able to:

- Define what litter is
- Describe litter's path to local waterways and the ocean
- Describe the environmental implications of litter on the local ecosystem
- Make predictions about litter on their school grounds
- Safely collect litter on their campus
- Analyze their findings
- Take action

Materials

Litter Pickup Materials:

- Drawstring trash bags
- Disposable gloves
- Disinfecting wipes
- Digital scale
- Student handouts (one per group)
- Clipboards
- Pencils

Optional Extension Activity Materials:

- Newspaper
- Poster-making supplies
- Graph paper
- Loose-leaf paper

TEKS

A list of select TEKS can be found at the end of this document. Please examine the TEKS for your grade level or subject area, as this is not an exhaustive list.

Procedure

1. Frontload any vocabulary terms that may be new to your students. Please see the vocabulary list provided and supplement as needed.
2. Present *The Story of Litter* slideshow to your class. This slideshow covers what litter is, where it comes from, where you might find it, how it gets into the river, why it is harmful, and how everyone can help.
   a. If you want to personally present the information to your class, you can download a copy of the PowerPoint provided for your grade level range. After downloading, feel free to adjust the content as needed for your grade level. You will find information in the notes section for each slide.
   b. If you would like your students to watch a pre-recorded presentation, you can play *The Story of Litter* video that is appropriate for your grade level.

3. Ask students to make predictions regarding where they might find litter on their campus. Consider creating a campus map and labeling predicted hot spots (please see the extension activity "Mapping Your Campus – Part 1").
4. Go over the ground rules for collecting litter. The Texas Department of Transportation has a great list of safety tips. At a minimum, please instruct your students to:
    a. Wear gloves and closed-toe shoes.
    b. Do not touch anything sharp.
    c. If you are unsure of what something is, leave it alone and tell an adult.
    d. Be mindful of your surroundings.
5. Split your class into small groups and allow students to choose a role. Depending on the number of students you have per group, consider combining jobs or assigning multiple students to the same role. You may wish to have your students trade jobs at a specific time interval to give everyone an opportunity to explore a different role.
    a. Materials Manager: This student is in charge of ensuring their group has everything they need before, during, and after the litter pickup.
    b. Data Director: During the litter pickup, this student is in charge of documenting their group's litter items on the student data sheet.
    c. Baron of the Bag: This student has the important job of holding the trash bag and ensuring that each of their group members disposes of their litter items properly.
    d. Ingenious Identifier: This student is in charge of classifying the litter items that are picked up and communicating that information to the Data Director during the litter pickup.
    e. Rubbish Remover: This student is in charge of picking up litter, consulting with the Ingenious Identifier to properly classify it, and disposing of it in the bag.
6. Pass out materials to each group. Each group should have at least one trash bag, one clipboard, one pencil, one student data sheet, and 2 gloves per student.
7. It's time for your litter pickup! Lead student groups outside to collect litter from a pre-determined area on your school grounds, documenting as they go.
8. Return to the classroom and weigh each trash bag using the digital scale. Let us know how much litter you removed by filling out this short form!
9. Tally up the number of litter items documented by each group to determine your class totals. What patterns do you notice in the data? Does anything surprise you?
10. Revisit your predictions. Were you correct? Did anything surprise you?
11. Explore students' thoughts and feelings around their results. How can we spread the word to end this problem?

12. If time allows, choose one or more of the extension activities to deepen students' comprehension. Please see the list of extension activity ideas in a separate document.
13. Be sure to congratulate your students! They showed incredible responsibility and initiative. Encourage them to discuss their findings at home
14. Last but not least, dispose of the trash they collected properly.

TEKS

While the list below is not comprehensive, we hope it provides you with some insights on how to align this experience with your learning objectives.

Kindergarten

- **Science 6:** identify and record observable physical properties of objects, including shape, color, texture, and material, and generate ways to classify objects.
- **Social Studies 15:** The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

First Grade

- **Science 6A:** classify objects by observable physical properties, including, shape, color, and texture, and attributes such as larger and smaller and heavier and lighter.
- **Social Studies 18**: The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

Second Grade

- **Science 11B:** describe how human impact can be limited by making choices to conserve and properly dispose of materials such as reducing use of, reusing, or recycling paper, plastic, and metal.
- **Social Studies 5C:** identify ways people can conserve and replenish Earth's resources.

Third Grade

- **Science 11B:** explain why the conservation of natural resources is important.
- **Science 11C:** identify ways to conserve natural resources through reducing, reusing, or recycling.
- **Social Studies 3C:** describe the effects of human processes such as building new homes, conservation, and pollution in shaping the landscape.

Fourth Grade

- **Science 11B:** explain the critical role of energy resources to modern life and how conservation, disposal, and recycling of natural resources impact the environment.
- **Social Studies 8C:** compare the positive and negative consequences of human modification of the environment in Texas, past and present.

Fifth Grade

- **Science 11:** The student is expected to design and explain solutions such as conservation, recycling, or proper disposal to minimize environmental impact of the use of natural resources.
- **Science 12C:** describe a healthy ecosystem and how human activities can be beneficial or harmful to an ecosystem.
- **Social Studies 8B:** analyze the positive and negative consequences of human modification of the environment in the United States.

Sixth Grade

- **Science 11A:** research and describe why resource management is important in reducing global energy poverty, malnutrition, and air and water pollution.
- **Social Studies 18C:** make predictions about future social, political, economic, cultural, and environmental impacts that may result from future scientific discoveries and technological innovations.

Seventh Grade

- **Science 11A:** analyze the beneficial and harmful influences of human activity on groundwater and surface water in a watershed.
- **Social Studies 9A:** identify ways in which Texans have adapted to and modified the environment and explain the positive and negative consequences of the modifications.

Eighth Grade

- **Science 5B:** identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems.
- **Social Studies 11B:** describe the positive and negative consequences of human modification of the physical environment of the United States.

High School Aquatic Science

- **14B:** predict effects of chemical, organic, physical, and thermal changes due to humans on the living and nonliving components of an aquatic ecosystem.
- **14D:** analyze and discuss how human activities such as fishing, transportation, dams, and recreation influence aquatic environments.

High School Biology

- **13D:** explain how environmental change, including change due to human activity, affects biodiversity and analyze how changes in biodiversity impact ecosystem stability.

High School Environmental Systems

- **6F:** evaluate the impact of waste management methods such as reduction, reuse, recycling, upcycling, and composting on resource availability in the local environment.
- **10A:** identify sources of emissions in air, soil, and water, including point and nonpoint sources.
- **11A:** evaluate the negative effects of human activities on the environment, including overhunting, overfishing, ecotourism, all-terrain vehicles, and personal watercraft.
- **11B:** evaluate the positive effects of human activities on the environment, including habitat restoration projects, species preservation efforts, nature conservancy groups, game and wildlife management, and ecotourism.

Take a group photo with the litter you and your students collected and share it on social media to inspire others to do the same! Be sure to tag us (@sanantonioriver) and use the hashtag #ourriverway