

Lesson 2-5: Organic Compounds Environmental Impact	
Curriculum Expectations	<ul style="list-style-type: none"> • A1.3 • A1.7 • A1.9 • A1.10 • A1.11 • A2.1 • B1.1 • B1.2
Learning Goals	<p>By the end of this lesson you will:</p> <ul style="list-style-type: none"> • assess the impact on human health, society and the environment of organic compounds used in everyday life (plastic bags) • propose a course of action to reduce the harmful effects of plastic bags on human health and the environment. • identify careers related to chemistry where one can make a positive impact on society and the environment.
Success Criteria	<p>I know I have achieved the goals for this lesson when I can describe the impact of plastic bag use on human health and the environment and can propose a method in which the impact of plastic bags can be reduced. I will also be able to describe careers in which knowledge of chemistry can be used to limit the negative impact of plastic bags.</p>
Teacher Prep	<ul style="list-style-type: none"> • Check that plastic vagabond video works. • Paper for placemat activity

Minds On

Goal: The goal of this activity is to refresh information about reactions involving organic compounds as well as to introduce the concept of negative environmental effects from the use/production of everyday items.

1. Class Discussion/Presentation

Instructions:

1. Put students into groups of 2-4
2. Each group must research a common everyday product that is made through a polymerization reaction.
3. Each group must identify and present the following information:
 - a. Description of the product and its uses.
 - b. polymerization reaction that produces the product.
 - c. identify any negative effects of this product on humanity and/or the environment such as pollution from the production of it (ie toxic by-products).
4. After all groups have presented, lead a class discussion on how the value of common, useful products must be balanced against the negative effects that may be associated with the production or use of the product.

Action

****Refer to the Differentiation Resources link for additional practice worksheets, and to enrich your classroom teaching using different tools throughout the lesson. ****

1. 2-5A: The Plastic Vagabond

- Watch the video together as a class.
- After the video have the students write down a personal response that describes their thoughts and feelings after watching the video.
- Prompts:
 - “How did you feel after watching the video”
 - “Did the video inspire you in any way?”
 - “What part of the video had the biggest impact on you?”

2. Plastic Vagabond Response Forum

- This is an opportunity for students to record their thoughts and opinions and share them with their peers.

- You may want to re-watch the video as a class to help reinforce their thoughts and feelings.
- Have students write answers to the following questions in the forum:
 - "Which of the following is the most reasonable option to address the problem of plastic pollution in the ocean"
 - a) Collecting plastic that has already entered the ocean.
 - b) Preventing plastic from flowing into the ocean in the future.
 - "Which of the following would have the greatest long term impact on the health of our oceans?"
 - a) Collecting plastic that has already entered the ocean.
 - b) Preventing plastic from flowing into the ocean in the future
- Encourage students to comment on other of their peers' posts, with the goal of generating a thoughtful discussion.
- When

3. 2-5B: Organic Compounds – Environmental Impact

- Use this activity to introduce the culminating task for this unit, which will be a research assignment. You should review proper research methods including plagiarism.
- Links to the research methods activities can be found in the assignment page

Consolidation

1. **Organic Chemistry Review Questions.** This activity is meant as a preparatory activity for the unit test. These questions are for practice. Students can complete them on their own, in groups or as a class.
 - The answers should be taken up together as a class.
2. **2-5B: Organic Compounds Environmental Impact Assignment.**
 - To be completed individually.
 - Go over the assignment instructions with the class emphasizing where marks are allocated, reminding students of proper submission protocols (file type, naming).

- Review of proper research and citation techniques is required. Students can use the links on the assignment page to review proper citation protocols.
- **Emphasize**, answers to the questions must be written as full sentences and must have depth (ie justification for each answer) to receive the full marks.

3. 2-C: Reducing the Effects of Plastic Bag Use – Personal Response. To receive marks on assignment 2-5B, students must post a personal response to the forum. This is meant to generate online discussion in a safe space, free from judgement. Encourage students to respond to other posts in the forum in an attempt to generate genuine discussion.

4. Unit 2 Learning Log – This must be completed before students can write the unit 2 test. Emphasize that this is an opportunity to offer feedback on the course.

5. Learning Skills Checklist – This must be completed by the student, in partnership with the campus teacher. This will be used for the report card.

****Refer to Differentiation Resources for additional practice worksheets, and to enrich your classroom teaching using different tools. ****