



CLASSROOM ACTIVITY

Petroleum Hunt

OBJECTIVE

Students will be able to:

- **Conduct** research to find common petroleum products found in schools.
- **Construct** an infographic to summarize and communicate the information gathered from researching common petroleum products used in schools.

OVERVIEW

This activity introduces oil as not just a source of energy but also something that can be processed to give us useful substances known as petrochemicals. They are used in an amazing range of products such as makeup, musical instruments, computer equipment, and school furniture! Students will work in small groups to research and find petrochemical products that could be found in their assigned area of the school (art room, athletic fields, music department, computer/tech classrooms, science labs, etc.). Small groups will share their research with the class to develop a master list of products used in their school. Students will use this master list to create an infographic of 25 petroleum-based products they never knew existed at their school.

NATIONAL STANDARDS

Next Generation Science Standards

- MS-PS1-3 Structures & Properties of Matter
Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.

ITEA/ITEEA Standards for Technological Literacy

- Standard 3. Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study.
E. A product, system, or environment developed for one setting may be applied to another setting.
- Standard 6. Students will develop an understanding of the role of society in the development and use of technology.
G. Meeting societal expectations is the driving force behind the acceptance and use of products and systems.

Common Core State Standards

- CCSS.ELA-Literacy.RST.6-8.2
Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

BACKGROUND

Petrochemicals are derived from hydrocarbons such as propane, ethane, butane and other components separated from crude oil. They are the building blocks that are essential to making products that make modern life possible. Petrochemicals are used in plastics, medicines, cosmetics, space suits, electronics, paints, and solar panels. They are an important part of today's economy and society, and the demand for synthetic materials continually grows. Petrochemicals make progress possible through innovations like extending lives with cutting-edge medical technologies, creating efficient ways to provide fresh water to those who don't have it, and creating parachutes that allow NASA to land safely on Mars.

KEY VOCABULARY

- Petrochemicals
- Distillation
- Hydrocarbons
- Stakeholders

MATERIALS

- Internet access
- Chart paper
- Free infographic creation websites
 - <https://piktochart.com>
 - <https://www.canva.com/create/infographics>

TEACHER PREPARATION

- Images of petrochemical products for collage:
 - Latex gloves
 - Toothbrush
 - Medicine
 - Running shoes
 - Bicycle
 - Lipstick
 - Fertilizer
 - Television

PROCEDURE

1. To introduce the lesson, display a collage of products on the board. Explain that these products are used in medicine, agriculture, electronics, clothing, and cosmetics. Have students work with a partner to predict what all the products have in common. Invite students to share their predictions with the class. Explain to the students that all these products were made from petrochemicals derived from petroleum.
2. Explain to students that they are going to assume the role of a Public Relations Specialist to increase recognition of how people use petroleum refined products in their daily lives. These professionals are the voice of organizations and companies. It's their job to plan, develop, and implement communication in a way that the public will understand. Use the following link (select "Public Outreach/Communications") to show a brief video that highlights the public outreach and communication professionals involved in the oil and gas industry: <https://stemcareerscoalition.org/employees/career-profiles>
3. Divide students into groups of three. Assign each group an area in the school (art room, athletic fields, music department, cafeteria, computer/tech classrooms, science labs, etc.). Each group will be challenged to research and find various petroleum products found in their assigned area. Groups will make a list of 5 of the most interesting items they found from their research.
4. Invite each group to share their assigned area and list with the class. Create a master list on chart paper of petroleum-based products found in the school for students to view and reflect upon.
5. Share with students that public outreach and communications professionals educate people about a pressing topic, alert the public about a recent discovery, or promote awareness of their organization. How each message is communicated depends on the intended audience and the information that needs to be shared. For this reason, the responsibilities of this career are varied and may include developing strategic communication plans, organizing events, creating press releases and handling media requests, managing social media accounts and advertising, communicating with the public during times of crisis, and more.
6. Challenge students to use the master list of 25 petroleum-refined products to create a digital infographic that informs the stakeholders of the school (students, teachers, administrators, parents) how important these products are in education. Display the infographics on a bulletin board in the hallway, and have teachers and students vote on their favorites. These infographics could be printed and displayed around the school to educate and inform all stakeholders.
7. Provide students with the link to various free infographic creation websites, such as Piktochart (<https://piktochart.com>) or Canva (<https://www.canva.com/create/infographics>)

EXTENSION

As an extension of this activity, have students research the distillation and refinery process and create a plan that will help students at local elementary schools learn about this topic.