



sustainability unit one



ask

How does oil impact my everyday life?

acquire

- Chart paper and markers OR laptops for students to collaborate using Google docs
- Student & teacher handouts
- Powerpoint presentation
- Newspaper articles

explore

- KWL chart
- Interactive PowerPoint presentation
- Collaborative brainstorm

analyze

- Article analysis
- Cost-benefit analysis
- Subsidy comparison

act

- Reflective paragraph
- Public service announcement
- Position paper

U1L2 | Oil Addiction

This is an introductory lesson on the topic of energy sustainability with a focus on oil. Students will engage in a range of independent and group activities to critically analyze the impacts of oil addiction.

subjects: Geography, Business, Economics, English, Civics

timing: **Activity 1**

KWL chart | **10–15 minutes**

Activity 2

Oil and my everyday life | **30–40 minutes**

Note: follow up with Activity 5 or 6

Activity 3

Cost-benefit analysis | **40–45 minutes**

Note: follow up with Activity 7

Activity 4

Subsidy comparison | **30–40 minutes**

Activity 5

Reflective paragraph | **75 minutes**

Activity 6

Public service announcement | **150 minutes**

Activity 7

Position Paper | **150 minutes**

learning goals

- To begin reflecting and contemplating the large role that oil, a non-renewable resource, plays in maintaining our current standards of living.
- To understand the crucial role oil plays in daily life.
- To understand that oil production and consumption are complex issues with many stakeholders; some winners and some losers.
- To understand how two of the world's biggest oil producing countries use subsidies to influence domestic demand for oil.
- To understand that simple changes in our daily lives can lessen our dependence on oil and have a positive environmental impact.
- To investigate and discover alternative choices people can make in their daily lives to reduce their oil footprint.
- To understand the problematic and far-reaching impacts of oil production and consumption on people, profit and planet.
- To effectively support an informed viewpoint on an issue.

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success criteria

- Complete KWL chart.
- Complete 'Oil and my everyday life' organizer and share answers with the class.
- Complete cost vs benefit organizer and justify concluding opinion as to whether Costs > Benefits or Costs < Benefits.
- Complete subsidy comparison.
- Complete paragraph planner and reflective paragraph.
- Complete public service announcement.
- Complete position paper.

ask

Inquiry Questions

- What do I need to know about oil addiction?
- Could we live without oil in our everyday lives?
- What are the costs to society, environment and economy of our addiction to oil?
- How do governments influence consumer behaviour through subsidies?
- How can you personally reduce your oil consumption?
- How can we convince people to reduce their oil foot print?
- Do the costs of oil consumption outweigh the benefits?

acquire

'Oil Addiction' PowerPoint presentation

Activity 1

KWL chart

Activity 2

'Oil and my everyday life' student worksheet

'Oil and my everyday life' teacher answer key (appended to lesson plan)

Activity 3

Cost-benefit analysis organizer

- Huffington Post article 'The True Cost of our Oil Addiction'

Activity 4

Subsidy comparison worksheet

- Guardian article 'Venezuela nears end of the road for gasoline subsidy'
- Guardian article 'Norway has fallen in love with electric cars—but the affair is coming to an end'

Activity 5

Reflective paragraph planner

Activity 6

Public service announcement worksheet

Activity 7

Position Paper worksheet

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explore

Activity 1 | KWL chart

In this activity students will begin thinking about the issue of oil addiction. They will reflect on their current level of knowledge and generate questions to guide their learning. After participating in the lesson activities students will summarize what they learned.

This is a ‘minds on’ activity for the topic of oil. Students will independently complete the ‘What I know’ and ‘What I want to know’ columns of their KWL chart. After participating in the subsequent lesson activities, students will come back to this chart and summarize their learning in the ‘What I learned’ column.

Teacher presents interactive *Oil Addiction* PowerPoint

Activity 2 | ‘Oil and my everyday life’ collaborative organizer

In this activity students will work in a small group (3–4 students) to complete the ‘Oil and my everyday life’ organizer. For each activity they must determine if petroleum is needed (circle ‘yes’ or ‘no’) and justify their choice. Some activities will be easy for students to decide on, while others may require deeper contemplation.

Students share answers with the class and teacher provides any necessary clarification.

Note: follow up with Activity 5 or 6

analyze

Activity 3 | Oil: Costs vs Benefits Analysis

In this activity students will work collaboratively to identify costs and benefits associated with production and consumption of oil. They will gain insight into the challenges presented by multifaceted global issues.

Students independently read Huffington Post article ‘The True Cost of our Oil Addiction.’

- Form groups of 3–4 students.
- Each group works collaboratively to identify costs and benefits associated with production and consumption.
- Each group uses chart paper and markers (or laptops and Google docs) to complete a Cost vs. Benefit analysis.

Costs of Oil	Benefits of Oil
<ul style="list-style-type: none"> • • • 	<ul style="list-style-type: none"> • • •

- Each group informally shares findings with the class
- Each group justifies their concluding opinion as to whether Costs > Benefits or Costs < Benefits

Note: follow up with Activity 7

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Activity 4 | Subsidy Comparison

In this activity students will learn about government subsidies by investigating two cases. They will discern that although Venezuela and Norway are both top oil producing countries, they have taken considerably different approaches regarding domestic demand for oil.

- In pairs, each student reads a different article ('Venezuela nears end of the road for gasoline subsidy,' or 'Norway has fallen in love with electric cars—but the affair is coming to an end').
- Both articles illustrate how government's use subsidies to influence consumer demand.
- If students do not have prior knowledge of subsidies, teacher should provide explanation.
- Students reflect on the fact that although Venezuela and Norway are both top oil producing countries, they have taken considerably different approaches regarding domestic demand for oil.
- Students take turns summarizing their articles to each other, explaining:
 - Which industry is being subsidized and why?
 - Successes and/or failures of the subsidy.
 - Make recommendations to their respective country's government to improve the situation.
- Students can record answers using pen and paper or Google docs.
- Conclusions can be shared informally with the class, or in written form with the teacher.

act

Activity 5 | Reflective Paragraph

In this activity students will individually write a reflective paragraph on how they can reduce their oil consumption.

- Students individually write a reflective paragraph on how they can personally reduce their oil consumption. Each student selects three activities from the Oil and my everyday life worksheet and suggests ways to reduce their oil footprint. For example, walking or biking to school instead of driving, eating local instead of imported food, using a refillable water bottle instead of plastic etc.

Activity 6 | Public Service Announcement

In this activity students will work with a partner to design a public service announcement which encourages people to reduce their oil footprint. They will gain experience as an activist by advocating for change in their school community.

- Students work in pairs to design a public service announcement (PSA) encouraging others to adopt less oil dependent habits (i.e. reduce/reuse/recycle, shop locally, support wind/solar energy projects etc.).

Activity 7 | Position paper

In this activity students will decide if the costs of oil consumption outweigh the benefits, or if the benefits outweigh the costs. Upon deciding, they will write a position paper justifying their view.

- Students write a position paper justifying their cost vs benefit conclusion.

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U1L2A2 | Oil and my everyday life collaborative organizer | **TEACHER ANSWER KEY**

overview

In this activity you will work in a small group (3–4 students) to complete the below organizer. For each activity you must determine if petroleum is needed (circle ‘yes’ or ‘no’) and justify your choice. Some activities will be easy for you to decide on, while others may require deeper contemplation.

learning goal

- To understand the crucial role oil plays in daily life.

success criteria

- Complete organizer and share answers with the class.

Inquiry Questions

- Could we live without oil in our everyday lives?

Do the below activities require oil? Write “Y” for yes or “N” for no and explain your choice.

*Petroleum products are produced from the processing of crude oil.

Activity	Requires Petroleum Y/N	Explain
Driving	Y	Gasoline is the most commonly used product by Americans for their day to day transportation needs. 45% of all oil used in the U.S. goes to gasoline, which means Americans consume in excess of 180 million gallons of gasoline a day.
Drinking coffee, eating bananas (using imports)	Y	Bunker fuel, which is also known as heavy oil, is used to power ships. It typically contains a high number of pollutants and contaminants. Use is increasing with the shipping associated with global commerce.
Washing Dishes/Laundry	Y	All soapless detergents used to wash clothes and dishes are derived from the petrochemical glycerin.
Drinking bottled water	Y	All plastic is made from petrochemicals. Every product made from or containing plastic is a product that exists only through the distillation of petroleum.
Heating my house/apartment	Y	Heating oil is a petroleum product used to fuel furnaces or boilers. In the U.S., most heating oil is consumed in the northeast.

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U1L2A2 | Oil and my everyday life collaborative organizer | **TEACHER ANSWER KEY**

Activity	Requires Petroleum Y/N	Explain
Walking/running	Y	Synthetic rubber, derived from petrochemicals, is used for car tires and rubber soles on shoes. Crude oil is the principal raw material.
Garbage/ recycling collection	Y	Diesel fuel is made from refining crude oil. It is generally used in medium- and heavy-duty vehicles requiring a great deal of power, like garbage trucks, road equipment, buses, and trains.
Eating fruits/ vegetables	Y	All major commercial fertilizers are ammonia based, made from natural gas, and most commercial pesticides come from oil.
Getting dressed	Y	All synthetic fibres (i.e. polyester, nylon, and acrylic) are derived from petrochemicals. They are used for curtains, carpets, rope and even our everyday clothing.
Painting	Y	Plastic and oil-based paints, as well as paint additives, are manufactured from petrochemicals.
Eating canned soup	Y	The shelf life of canned foods can be increased by food additives, derived from petrochemicals.
Putting on make-up	Y	Make-up that contains oils, perfumes, waxes and colour, are derived from petrochemicals.
Taking medicine	Y	Acetylsalicylic acid (ASA), the active ingredient in many pain reliever medicines, is manufactured from petrochemicals.
Burning a candle	Y	Wax is a raw petroleum product.

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