

## Crash Course

**Study carefully. If you learn these background facts about our oil situation, you'll be better equipped to help create solutions to the current oil crisis.**

### HARD QUESTIONS

1. Where does oil come from? What are the two main theories on how it got there? (Why is it called a "fossil fuel"?)

Oil (petroleum) comes out of the ground. The popular biogenic theory supposes that it is the remnant of marine life that sank to the bottom of ancient sea beds and has been transformed by heat and pressure in the earth into petroleum. The minority abiogenic theory supposes that its hydrocarbons are part of the earth itself. ("Fossil" refers to the biogenic theory.)

<http://en.wikipedia.org/wiki/Petroleum>

2. Is oil a renewable or a non-renewable resource?

It is non-renewable. Oil wells do replenish themselves, but at a very slow rate, and sooner or later will stop doing that when the underground reservoir is completely exhausted.

3. How long have humans been using oil for fuel?

Oil has been known since ancient times. The modern history of oil as a fuel for internal combustion began in 1846.

<http://en.wikipedia.org/wiki/Petroleum#History>

4. How many gallons of gasoline or diesel do your family use every month? Write down your estimate, then use your family's fuel bill to figure out the true amount (hint: you can divide the monthly bill by the price of a gallon of fuel to get the number of gallons). How close was your estimate? Does the number surprise you? Does your number differ much from those of your friends?

5. If fuel is rationed and your family could only have 20 gallons a month, how would this change your lifestyle?

6. Name as many as you can of the top dozen oil-exporting countries of the world.

1. Saudi Arabia
2. Russia
3. Norway
4. United Arab Emirates
5. Iran
6. Venezuela
7. Kuwait
8. Nigeria (est)
9. Mexico
10. Canada
11. Iraq
12. United Kingdom

<https://www.cia.gov/cia/publications/factbook/rankorder/2176rank.html>

## HARDER QUESTIONS

1. Oil is often associated with transportation. What else is it used for?

Fuel oil to heat homes, source chemicals to make plastic, asphalt and fertilizer, and more.

<http://en.wikipedia.org/wiki/Petroleum#Uses>

2. Does the food you eat depend on oil? If oil were more expensive, would your food be more expensive?

Yes. The low cost of food depends on large part on cheap oil to drive farm machinery, to produce and transport pesticides, and to process, package and transport food.

3. If there were an oil shortage, would there be a shortage of food? Why or why not?

Very possibly. Our current food industry depends on oil to produce food at current levels. If forced to cut back, people might have to grow their own food to make up the shortfall.

4. Go through your refrigerator and pantry, and look at the labels of packaged foods. Can you figure out where each food came from? Plot

the food sources on a map. What is the average number of miles the food has traveled to get to your home?

Studies of "food miles" in the U.S. often produce results in the 1,000- to 2,000-mile range, even for produce. [http://en.wikipedia.org/wiki/Local\\_food](http://en.wikipedia.org/wiki/Local_food)

5. The U.S. has suffered oil shocks before. When did they happen? What caused them? What were the effects, and how long did they last?

There were oil shocks in 1973, in 1979, in 1990 and in 2005. The causes are complicated, but relate to the Yom Kippur war and OPEC (1973), the Iranian Revolution (1979), the First Gulf War (1990) and Hurricane Katrina (2005).

Do you think the availability of cheap oil has influenced the American lifestyle? If so, how?

Possible positive answers include American Suburbia, highways, and the large American automobile.

## HARDEST QUESTIONS

1. How much oil does the citizens of the United States use every day? What percentage of this oil must be imported?

The U.S. consumes over 20 million barrels of oil a day – one-quarter of all the world's production. Today, over 60% of the oil we consume must be imported. <http://www.eia.doe.gov/neic/quickfacts/quickoil.html>

2. How critical is oil to the continued production of electrical power in the U.S.?

Oil produces a relatively small amount of power directly (in oil-fired power plants) but is vital for the continued operation of coal-fired plants, which produce most of the U.S. grid energy.

<http://www.eia.doe.gov/cneaf/electricity/epa/epates.html>

3. What is the Hubbert Curve?

M. King Hubbert used statistical modeling to arrive at a curve that is useful for understanding how humans exploit certain natural resources. The Hubbert Curve is most

often associated with oil resources.

<http://wolf.readinglitho.co.uk/mainpages/hubbert.html>

[http://en.wikipedia.org/wiki/Hubberts\\_peak](http://en.wikipedia.org/wiki/Hubberts_peak)

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4. How much of the U.S. annual output of energy is lost to energy inefficiency, that is, it does no useful work?

Over half.

<http://en.wikipedia.org/wiki/Image:USEnFlow02-quads.gif>

5. What is the relationship between oil use and climate change?

Complicated. When burned, oil adds CO<sub>2</sub> to the atmosphere, adding to climate change. Oil however can offset the use of fuels such as coal, which when burned adds even more CO<sub>2</sub> to the atmosphere.

[http://en.wikipedia.org/wiki/Fossil\\_fuel](http://en.wikipedia.org/wiki/Fossil_fuel)

<http://news.bbc.co.uk/2/hi/science/nature/6505127.stm>

6. Given the likelihood of oil shortages in the future, what might be good careers for young people making choices today?

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WORLD WITHOUT OIL is a collaborative alternate reality. It begins April 30, 2007, at [www.worldwithoutoil.org](http://www.worldwithoutoil.org). Play it – before you live it.