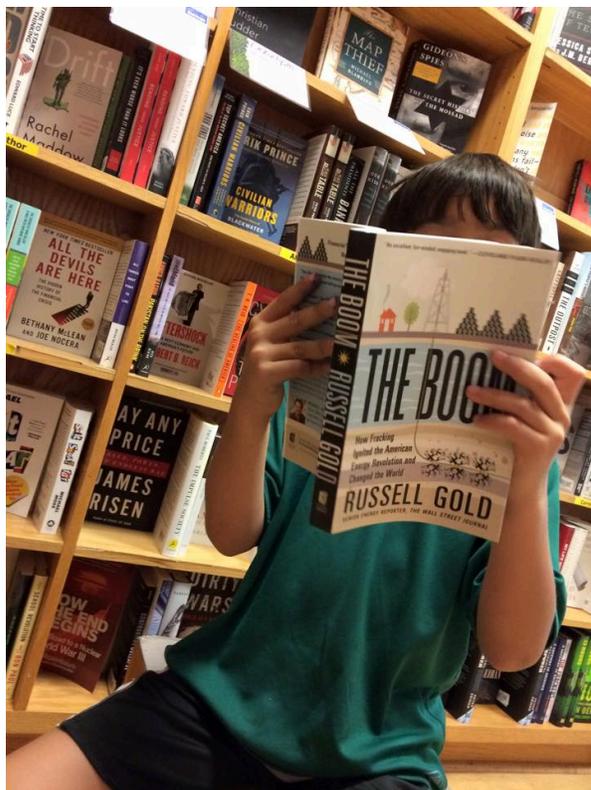


Classroom Guide



The Boom
(Simon & Schuster, 2014)

“The U.S. energy landscape is changing.”

That’s how the federal government begins its first-ever [Quadrennial Energy Review](#). That changing landscape is what *The Boom* is all about.

This guide is intended to help you come up with a curriculum to teach these huge changes

and the impact they are having on climate change, energy consumption and our communities.

I plan to update this document regularly, adding new questions, sources of data and links. Please [email me](#) and tell me what works and what doesn’t work.

Sources of Data

The U.S. Department of Energy operates the Energy Information Administration (EIA). Its website (www.eia.gov) is a great source of free information about domestic and international energy usage and production.

The EIA also operates a page for kids (www.eia.gov/kids/) which has some really good material and some mediocre material.

If you're willing to fork over thousands of dollars to Bloomberg or another service, you can get incredibly detailed information about energy prices. If not, the EIA gives you some good basic information. There are some basic prices used in energy trading. There is the spot price (WTI, or West Texas Intermediate, is the most basic measure of how much crude oil costs in the U.S.; Henry Hub is the spot price for natural gas). There is also the [futures price](#). This tells you how much an energy trader will pay for a set amount of energy in the future. Usually, the futures price is for the "prompt month" – or the next month. So, if it's November 15th, the futures price is for December. There are also [gasoline and diesel prices](#). You might also check out AAA's [Daily Fuel Gauge Report](#) and [Gasbuddy.com](#).

Here are some other helpful links:

[How much oil does my state produce?](#)

[How much oil does the U.S. import?](#)

[How much natural gas does the U.S. produce?](#)

[What countries produce the most oil?](#)

[Where can I find climate and greenhouse gas emission data?](#)

Classroom questions

The author, Russell Gold, describes the unfettered market as the “ugly beauty” of the U.S. energy system. What do you think he meant by choosing the phrase. What is ugly about it? What is beautiful? Do they balance – or is the unfettered market more ugly than beautiful? Or more beautiful than ugly? In what ways?

One of the most controversial aspects on fracking is the issue of local control. Should a city be allowed to ban fracking entirely, as Denton, Texas, voted to do in 2014? Should a state be allowed to overrule cities and set statewide rules to govern where drilling pads should be located and how far from homes and schools they may be? How close should fracking be allowed to a house? To a school?

Who should make rules about fracking: cities or states (or even the federal government)? What is lost when fracking is banned? What is gained?

In the final chapter of *The Boom*, Gold writes about the town of Bartonville, Texas. He said the city had taken many steps to protect its residents, including hiring a part-time inspector, requiring noise-dampening walls and mandating air and water sampling before drilling begins. What other regulations can you think of that lessen the impact of drilling on a community? Is it possible to design rules that make rigs good neighbors? Why or why not?

About Bartonville, Gold writes that continuously updated its rules, tightening them up when loopholes appeared. “This approach was possible because the town had neither shied away from drilling nor embraced it blindly. The city didn’t want to keep out drilling...but felt it had an obligation to keep an eye on energy exploration and

insist the highest standards were met. Fracking means the promise and peril of energy production are coming back to the United States, and Bartonville was ready to play its part.” Would you want oil and gas drilling and fracking in your community? What if you were paid handsomely by an oil and gas company? What if it meant jobs and as well as fewer barrels of imported oil?

The U.S. approach to fossil fuel development is to set guidelines, allow drilling and then address problems as they arise. Think of this as the drill first and fix problems later approach. Europe, and many other places in the world, take a different approach. They require proof that a new technology will not cause public harm before companies can engage in it. Think of this as a think first and drill second approach. Does Russell Gold take a position on which approach is better? What are the advantages of the U.S approach? What are the advantages of the European approach? Why do you think fracking was developed and took off in the U.S.?

The “precautionary principle” means that a new product or process should be thoroughly tested and understood before it is allowed in wide use. Broadly speaking, this is the European approach to fracking. Exxon Mobil’s CEO and Chairman, Rex Tillerson, favors the U.S. approach. “If you want to live by the precautionary principle, then crawl up in a ball and live in a cave,” he said. “What do you think of this approach? What other approaches are there? What are the upsides and downsides of the precautionary principle?”

In December 2014, New York State decided to ban fracking. [Here’s a link to New York’s report.](#) The state’s health commissioner said the science around fracking was “limited, only just beginning to emerge, and largely suggests only hypotheses about potential public health impacts that need further evaluation.” Until more is known, the state’s governor decided not to allow fracking. Read the report and think about the information in it. Given the data, what

do you think of his decision? What decision would you have made if you were the governor?

In the aftermath of the decision, the governor was criticized for not allowing fracking. One criticism was that New York State was increasingly reliant on natural gas for electric power and home heating. In other words, the state was enjoying many benefits of fracking. How valid is this criticism? Can you think of other critiques?

Students at universities across the country are calling for divestment from fossil fuels. This means the university would sell all of its stocks and bonds belonging to companies that produce fossil fuels, such as a mining or oil company. Harvard University President Drew Faust said she didn't think divestment made sense, saying: "[The endowment is a resource, not an instrument to impel social or political change.](#)" Stanford University took a different approach and decided to no longer make [direct investments in coal companies](#). What are the pluses and minuses of colleges (or other groups, such as churches) using their financial clout to pressure fossil fuel producers?

The drilling of the Matt 2H well on "the farm" went fairly well. There is no indication of water contamination and the land remains a beautiful place to visit. Do you think Gold's opinion of fracking – or the book – would be different if there had been problems drilling the Matt 2H? What if there had been a well blowout, or a major spill?

To what extent should personal anecdotes and experience versus data or economic concerns influence your thinking about broad social issues?

George Mitchell, the father of fracking, said he didn't invest in renewable energy because "it didn't look very promising" at the time. Do you think he make the right decision? If you were in his

shoes, would you have invested in renewable energy even if you thought it was a money loser?

The book invites the reader to think about energy today – and tomorrow. What do you think the energy mix will look like in ten years, or twenty? What should it look like? Should the market or governments determine the energy mix?

What role did government and government-funded research play in the development of fracking? Would private industry have pursued such out of the box research without help from the government? Does the U.S. government or private industry deserve the lion's share of the credit and why? What lessons can you draw about the collaboration of government and industry for overcoming difficult challenges?

Bill Gates said in a November 2015 interview (after the book was published) that [we need an “energy miracle.”](#) What type of miracle is he talking about? How does fracking and natural gas fit into this miracle? If you could control investment in energy, what would you increase spending on?