

Introducing the Activity

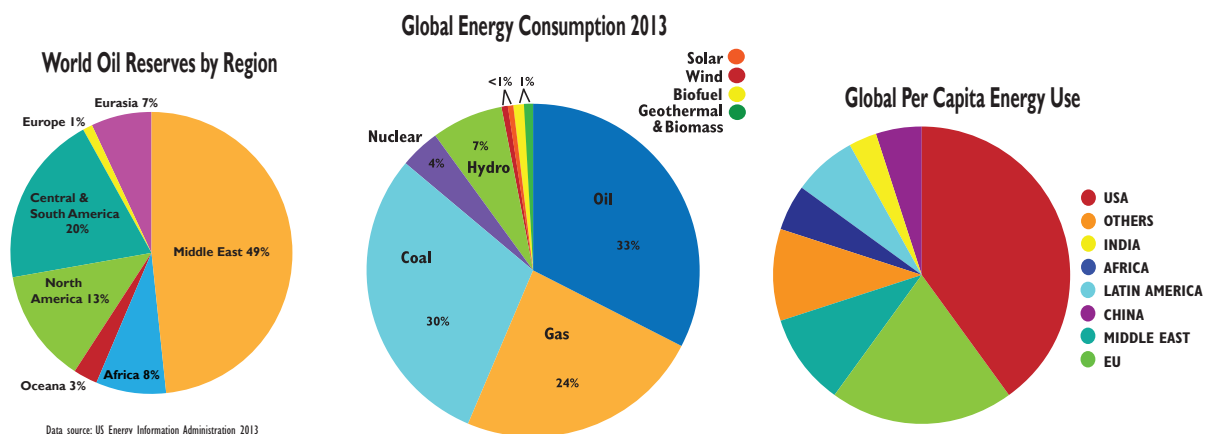
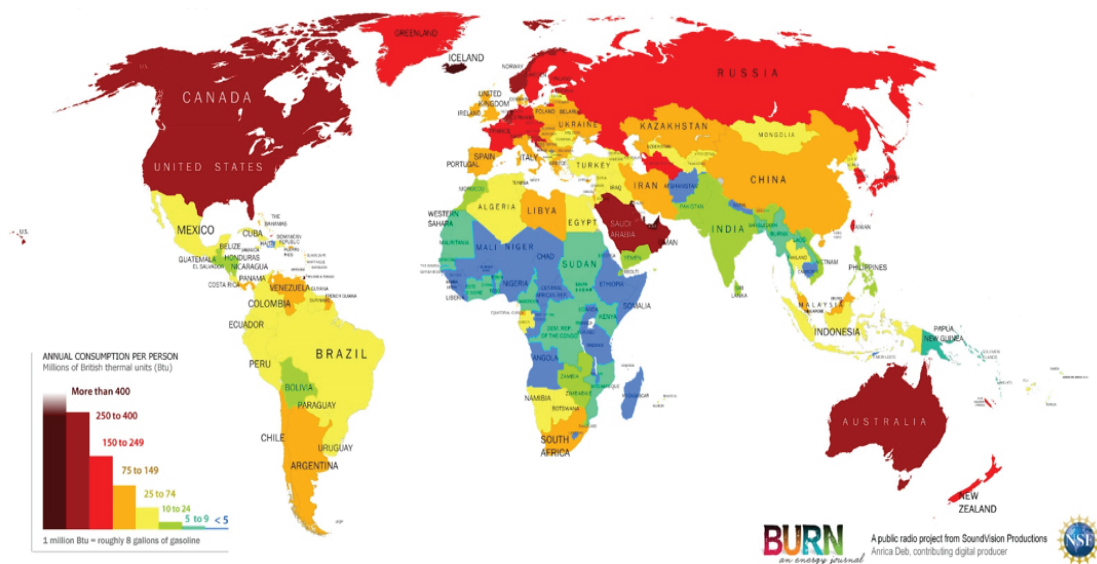
In this activity, students 1) analyze and interpret data on the uneven formation and distribution of fossil fuels, 2) analyze data on the uneven consumption of fossil fuels, 3) communicate information (data interpretation) via a group poster presentation, and 4) explain the potential impacts of their findings on society and on Earth's systems.

As discussed in Activity 1.1, revisit how coal and other fossil fuels are formed and what they are used for: energy. Review the concept of these as non-renewable resources, and that access to these resources requires disrupting habitats. Yet, we rely on fossil fuels in many ways in our everyday lives. You will use the posters to guide students in an analysis of the different types of energy sources—the largest of which is fossil fuels. This will be compared to representations of oil reserves by region and energy consumption by region. Students will likely need support in learning to read and interpret these graphic representations. Provide them with all graphics as a handout to be used in pairs.

Guiding the Activity

As a class, for the “Global per Capita Energy Use” graph, have students assign a percentage to each country's energy use. They will need this information in the graphing exercise.

Energy Consumption by Person, by Country 2010



- **Why do we use fossil fuels?** (Fossil fuels are used as an energy source, including heat, electricity, and fuel.)
- **Why are fossil fuels considered non-renewable?** (They are a limited resource that takes more than a million years to be replaced in the environment.)
- **What effect(s) does using fossil fuels have on the environment?** (Mining for fossil fuels damages the land and ecosystems. Burning fossil fuels causes air pollution.)
- **What type of energy resource are solar and wind energy?** (They are renewable because they don't run out.)
- **Many people are committed to developing renewable energy resources in the future. Do you think this is a good idea? Explain your ideas.** (Renewable energy sources are safer for the environment, and they are sources that we won't run out of.)

Read with students the “What Will We Do?” section of Activity Sheet 1.2. Have students form groups, and distribute the graph paper, calculator, poster board, and markers. Have students brainstorm with their team why comparing these posters is useful for understanding fossil fuel availability and consumption. Then have them create their own graph comparing the different statistics.

Students should choose or be assigned a comparison, as described in the Teacher Preparation section (under Set-Up).

Students may need support in creating their own graphic representations. Circulate around the classroom and provide assistance as needed during the graphing exercise.

Once the graphs are complete, have groups share and discuss the implications of what they found. Students could develop potential solutions for energy usage from their graph and create a poster board to present to the class.

