Activity: Town Meeting

FOR THE TEACHER

Summary
In this activity, students will independently learn about acid rain, gas scrubbers, half-life, chain reactions, and other topics around electricity production. They will conduct a debate as members of a factious community faced with the problem of coal power vs. nuclear power.

Resource Type         Grade Level
Activity               High school

Objectives
By the end of this lesson, students should
• have informed opinions about the pros and cons of nuclear energy and coal-powered energy.

Chemistry Topics
This lesson supports students’ understanding of
• Pros/cons of nuclear power
• Nuclear chemistry
• Combustion
• Acid rain

Time
Teacher Preparation: 15 minutes
Lesson: 3 days

Materials
• Research tools for their topic
• Costumes (optional)

Safety
No safety precautions need to be noted.

Teacher Notes
From the debate, students begin to understand the idea of stakeholders and the complexity of resolving environmental problems.

FOR THE STUDENT
Student Activity Sheet: Town Meeting

Lesson
Anderson, Virginia, is a medium-sized Appalachian town whose residents make their living from either coal mining or tourism. The town needs to either update their current coal-burning power plant or build a new nuclear plant. A town meeting
will be held soon and residents will debate whether or not to build a nuclear power plant to replace the existing coal-burning power plant. Each special interest group will be given two to three minutes to present their argument for or against the proposed plant. The remaining time will be spent on rebuttal and voting.

The special interest groups are as follows:

1. **Coal miners.** These workers want to keep their jobs and livelihood. They have no additional skills because they have worked all their lives as coal miners. There are no other jobs in the area for them.
2. **Tree-hugging environmentalists.** They have been opposed to coal mining in the area for a long time because of environmental reasons. They are concerned with loss of animal life and damage to the habitat. A lot of these tree huggers rent rooms to city people who come to the area to enjoy beautiful nature.
3. **The Audobon Society.** Members of this group are concerned about global warming and smog.
4. **American Fishing Society.** Members of this group are worried about the effect of acid rain on local streams and lakes. The local economy depends on tourism.
5. **Dr. Jones.** This local doctor has treated many cases of black lung, and he hasn’t found it pleasant. He’s also concerned about smog and human health.
6. **American Coal Society.** Representatives from this group know about gas scrubbers and how these devices help reduce pollution released by coal-burning facilities.
7. **Mothers Afraid of Radioactivity (MAR).** Members of this group are concerned about living next to a nuclear power plant. They worry about the day-to-day effects of radiation more than a nuclear meltdown.
8. **Mr. Smith.** He doesn’t think people should split atoms. It’s dangerous and might lead to a horrible nuclear accident. What about Japan? What about terrorists?
9. **The local Native American tribe.** A Native American reservation is next to the proposed nuclear waste dump site. The chief thinks it is unfair to take a risk for the horrible things that could happen to the waste, and therefore the reservation, if the dumping facility is not meticulously maintained.
10. **Nuclear Engineering Society.** Scientists from this group know how a nuclear power plant works and how unlikely it is that the plant will hurt anyone.

There needs to be a chair of the meeting. The chair will call on each group and tell them when their time is up. The chair will handle the rebuttals and take the final vote.