OBJECTIVE:
Use accepted procedures to conduct an orderly and efficient debate in the form of a mock Senate sub-committee hearing to present a logical, realistic and convincing discussion regarding a current energy issue.

Grade: 9 – 12

Intended Learning Outcome:
- Use the language of science to communicate
- Use reference sources to obtain information (library, internet, interviews)
- Understand science concepts and principles, explain science concepts in their own words and demonstrate scientific principles
- Develop critical thinking skills
- Developing logical arguments


Materials: Paper
Pencil or Pen
Library and/or Internet access

Teaching Time: Minimum of two class periods, best for three class periods

Number of Players: Entire class

Teacher Information: High level cognitive teaching activities, such as debates, are fun for students, and lead to a higher level of learning. Students invest in their own education when they research, analyze and prepare to argue a specific point of view on a current issue. This activity will allow your students to go through this process.

Congressional hearings are the principle formal method by which committees collect and analyze information in the early stages of legislative policymaking. Legislative, oversight, investigative, or a combination of these hearings all share common elements of preparation and conduct. Hearings usually include oral testimony from witnesses before a small group of members of Congress and questioning of the witnesses by the same committee. Then the issue is put to a vote by the committee.
AUTHOR BIO:

Curtis Craig teaches biology for Utah Electronic High School. He received his zoology & botany degree from Brigham Young University (BYU) and earned his Master’s of Education in particle astrophysics from Westminster College and the University of California/Berkeley. He is a co-founder of Hands On Universe. He is the recipient of numerous teaching awards including the United States Department of Energy’s Top Ten Science Educators, the BYU Physical Science & Mathematics Teacher of the Year; the Tandy Technology Teacher of the Year; and the Presidential Awardee for Excellence in Math and Science Teaching. He is also past President of the Utah Science Teachers Association, and was awarded the Technology and Engineering Teacher of the Year award by the Utah Association of Career and Technical Education in 2008.
First Class: Topic and Research

1) Have the students select a local energy issue for debate. Present a topic in a “For” or “Against” format (e.g. Should a nuclear plant be permitted near your town?; Should a new oil refinery be built near your town?; Should we double the size of the coal-fueled power plant?; Should we offer tax credits for producing bio-fuels?). Consider a local energy topic (e.g. Should your principal put a wind turbine on school property to generate electricity for the school?; How would you connect to a grid?; Costs?; Who and how to measure wind?; Etc).

For more ideas and information regarding energy literacy and current issues visit www.energy.gov.

2) Once a topic is selected, have students create a short opinion poll for their class. Poll the students about their opinions on the energy issue before they start their research and again after the mock hearing is finished (questions should be the same for both before and after). Keep the results confidential until both polls are taken. The poll can be either written or verbal and limit the poll to no more than 3-5 questions.

3) Randomly assign the following roles to various students.
   a. Senator 1 (Chair) – This person conducts the committee meeting, may conduct poll and announce results.
   b. Witness 1 (Pro industry) – Each witness is to provide information and opinion on one side of the argument in context of their specialty or role.
   c. Witness 2 (Pro environmental)
   d. Witness 3 (Con industry)
   e. Witness 4 (Con environmental)
   f. Witness 5 (Economist or local governmental official)
   g. Witness 6 (Local resident)
   h. Senate Committee members (teacher to decide how many, should be an odd number) – Each Senator should have a basic understanding of the issue and be prepared to ask questions of the witnesses.
   i. Reporter (newspaper)
   j. Reporter (TV)

The students will remain in these roles for the duration of the hearing, but will be allowed to share their personal opinions and feelings afterward.
Provide class time for students to research the topic and their role and build arguments. (Students who are assigned to be Senators should still do some basic research on the topic.) The amount of class time allocated to research depends on the topic and the grade level. Encourage students to interview people in the community or industry to get a more realistic perspective. Time allotted is at your discretion.

**Second Class:** Conduct hearing

Hearing Agenda:

- **Chairperson** - Opening remarks (2-5 minutes) Short introduction on the purpose of the hearing.
- **Senator** - Opening remarks (1-2 minutes each) What they are trying to learn from the hearing.
- **Witnesses** (5 minutes each) Give their argument, based on their research.
- **Senators** - Cross examine (ask questions) witnesses. This happens at the end of each witness’ testimony, before the next witness speaks.

Students must be persuasive in nature and they may use any media (handouts, video, charts, diagrams, etc.) they choose in making their arguments. Students must cite sources and data from their research.

At the conclusion of the hearing, allow the committee to vote on the issue. The Senators must then explain why they voted the way they did.

**Third Class** (if time permits, if not make this the last part of day 2)

Discuss and summarize process.

Have the T.V. and/or news reporters give a 30 sec newscast of the hearing or read their news report. Discuss the results of the two polls and any impact the hearing process had on the poll. (Don’t overlook discussing the social, political and emotional nuances of the debate.)