**Teaching Argumentation through Controversial Environmental Issues:**

**Model Template**

Use this template to create your own set of activities related to teaching argumentation. For an example lesson, please download *Teaching Argumentation through Controversial Environmental Issues: A Curriculum Model* posted on the NAAEE website at: <https://naaee.org/our-work/programs/environmental-issues-forums/eif-classroom>

**Share your lesson with others!**

We encourage you to share your teaching ideas with others by posting your argumentation lesson on the NAAEE website.

You will need to login (free and easy to do) to eePRO: https://naaee.org/user/login

Once you are logged in, follow the directions to post your resource at: <https://naaee.org/eepro/resources>. When you get to **Step 4: Tag Your Post**, be sure to select Argumentation under the Topics listing. That way, others interested in argumentation will be able to find your resource easily.

Grade level(s):

Subject area(s):

Course or Program title:

Tell us a little about your students:

Title or focus of the unit:

What problem are you focusing on in this unit (e.g., climate change)?

What solution(s) are you focusing on in this unit (e.g., geo-engineering)

**Activity 1: Classifying Categories of Arguments (individual activity)**

In this first activity, students will work individually to review three illustrative statements. These statements should articulate arguments or counterarguments related to the problem you have selected.

After reading the three statements, students will classify the statements according to the following categories of argumentation:

* Scientific – argument is based on the scientific merit of the solution
* Societal – argument is based on the acceptability of the solution to society and to social stability
* Ethical – argument is based on the ethics of the solution, from the perspective of the values of the person or group making the argument

**Preparation:**

1. Review the problem and solution(s) focused on in your unit.
2. Select one solution or set of solutions that you would like the students to explore in more depth.
3. Review the three types of arguments/counterarguments (Scientific, Societal, Ethical).
4. Write one illustrative argument/counterargument for each type and copy the statements to the Activity 1 – Student Worksheet.

For example, if your problem focused on climate change, and the solution under study focused on geo-engineering, you might consider arguments such as:

* Jeanette argued that there is not enough evidence to trust that geo-engineering solutions will be safe
* Frederico agreed but said the risks are worth it considering the severity of the problem of climate change.
* Marsha was completely opposed because she said it is not our place to play God with the natural environment.

Begin the activity by distributing the Activity 1 – Student Worksheet to class participants. Review the instructions with the class and lead a short discussion of the three categories of argumentation presented (e.g., Scientific, Societal, and Ethical).

**Activity 1 – Student Worksheet**

Three people were discussing [insert name of proposed solution] and how it might be used to help address [insert name of problem].

1. Read each statement and think about what each person is saying about [insert name of proposed solution].

[Insert the three arguments/counterarguments here.]

* + Insert argument #1 -
	+ Insert argument #2 -
* Insert argument #3 –
1. Understand these three categories of argumentation:
* Scientific – argument is based on the scientific merit of the solution
* Societal – argument is based on the acceptability of the solution to society and social stability
* Ethical – argument is based on the ethics of the solution, from the perspective of the values of the person or group making the argument
1. Answer the following questions:
* What kind of an argument is each person making? Is it Scientific, Societal, or Ethical?
* What are they saying that supports your classification?

**Activity 2: Generating New Arguments (individual activity)**

In this second activity, students write their own arguments and counterarguments designed to illustrate each of the three categories of arguments: Scientific, Societal, and Ethical.

**Activity 2 – Student Worksheet:**

1. Write three new arguments or counterarguments related to [insert name of proposed solution].
2. One of your statements should be based on Scientific argumentation, one on Societal argumentation, and one on Ethical argumentation.
3. At least one of the three arguments should be based on what *you* truly believe.
4. Once you have written your three arguments: a) identify which of the three is consistent with your beliefs and b) determine if this argument is in support of [insert name of proposed solution], against [insert name of proposed solution], or somewhere in between.

**Activity 3: Practicing Deliberative Discourse (group activity)**

In this activity, students will build their understanding of argumentation by using the statements that they and their classmates generated in Activity 2. You should divide the class into small groups. There should be at least one small group for each of the three types of arguments (Scientific, Societal, and Ethical).

Each group will practice deliberative discourse – they will use their statements to discuss [insert name of proposed solution] as a contributing solution to [insert name of your problem]. As they deliberate, they should see if there exists any common ground that binds all the members. The common ground need not be as ambitious as reaching consensus on a solution or strategy. At minimum, however, the common ground should be acceptance that everybody holds certain standards or common concerns. For example, Group 1 (Scientific) may only find common ground in their belief that more studies need to be conducted. Or, Group 2 (Societal) may find common ground in the idea that [insert name of proposed solution] could be an acceptable solution if it is preceded by a widespread public education campaign. Or, Group 3 (Ethical) may find common ground in the idea that societies should roll out [insert name of proposed solution] incrementally according to how severe [insert name of your problem] impacts are for people in different locations, thus driving the policy from a humanistic perspective.

In the end, expect that the individual group members will either be for or against [insert name of proposed solution], or indecisive. Indecision is fine as long as they listen to each other and try to find some common ground, whatever that may be. To improve their listening skills, they might practice paraphrasing each other, posing clarifying questions to other group members, or offering feedback after all participants express their arguments.

To begin the activity, ask the students to review their Activity 2 worksheets and circle one statement that reflects their own beliefs. They should confirm which category of argumentation the statement reflects (Scientific, Societal, or Ethical). These categories will be used as you assign students to their small groups.

Divide the students into groups based on the three types of argumentation. Assign students to:

**Group 1:** if the statement they circled (i.e., agreed with) was on the science of the issue

**Group 2:** if the statement they circled (i.e., agreed with) was on the issue’s societal dimensions

**Group 3:** if the statement they circled (i.e., agreed with) was on the ethics of the issue

Once students are settled in their groups, distribute a copy of Activity 3 – Student Worksheet to each student. Review the directions. Make sure that students are clear on their assignments.

**Activity 3 – Student Worksheet**

1. As a group, discuss your arguments and counterarguments related to [insert name of proposed solution]. Each member of the group should…
* Use the statements you developed in the previous activity, present your position about [insert name of proposed solution] and your supporting argument, even if your position is simply that you are not comfortable taking a position yet
* Listen to your groupmates’ reasoning. Take turns paraphrasing one of the arguments you heard them say so that it is clear that you listened carefully.
* Ask your groupmates questions about their positions and reasoning. These questions should be carefully worded to respectfully challenge individual positions or reasoning.
1. Once all the group members has had a chance to present their positions and reasoning, and each group member has been able to practice paraphrasing and questioning strategies, turn your attention to finding common ground. On a large sheet of paper or the white board, list what you all agree and disagree about. Write a statement or series of statements that express your common ground.
2. As a group, consider what you’d like to learn more about. Pose a series of questions that will help you follow up with research or appropriate actions related to [insert name of proposed solution]. At least one question should be grounded in each of the three argument categories:
* Scientific
* Societal
* Ethical
1. Describe how each question could be followed up through research or actions.
2. As a group, brainstorm ideas for how that research or action could eventually be evaluated for effectiveness.

**Extension activity.**

If you think that some of your students may question whether the focal “problem” you selected is truly a problem in the first place, start (or end) the lesson by asking the students these questions:

1. Do you believe that [insert name of your problem] is truly occurring?
2. Do you believe that people are contributing to [insert name of your problem]?
3. Do you think that people can be part of the solution?

Examples of “problems” that may not be universally considered problems are: immigration, abortion, and taxes. Examples of problems that are more likely to be consensually accepted as such are: crime, disease, and pollution.

To learn more about this extension activity, download *Teaching Argumentation through Controversial Environmental Issues: A Curriculum Model* posted on the NAAEE website at: <https://naaee.org/our-work/programs/environmental-issues-forums/eif-classroom>