

Rules of Thumb for Teaching Controversial Issues:

- 1. Be nice (but there are limits).** Treating those who disagree as either idiots or evil people is unlikely to convince them that you're correct.
 - a. Know your audience.** "Nice" has different meanings with different audiences.
 - b. For the most part, people aren't lying.** They largely believe what they say.
 - c. Advocacy may deepen convictions more than understanding.** Evangelism turns on people who agree with you and turns off many who don't. Being certain and being right aren't the same thing, and they aren't all that closely related. Put more faith in people and institutions that are pretty sure than those that are certain.
 - d. Don't let the bastards get you down.** Working on nurturing public understanding of controversial issues will make people angry, and angry people say and do nasty things. Have a support system you can turn to.
- 2. Complexify the seemingly simple.** As educators (and like journalists and politicians), we are driven to simplify the seemingly complex. It's often important, but we do it *too* often. The world is complex.
 - a. Move from debate to discussion.** There are often ways to reframe away from false dichotomies.
 - b. Controversial issues are always interdisciplinary.** Pay attention to the tools and strategies of the most centrally-related disciplines.
 - c. Don't forget the importance of the simple.** While acknowledging the issue's complexity is important, there are often simple ideas illuminated within that complexity.
- 3. Evidence matters, but evidence alone is not enough.** All of us hold beliefs for which ample conflicting evidence exists.
 - a. Learn about cognitive biases (including your own)** and how to communicate more effectively in light of them.
 - b. State evidence clearly and directly, identifying a small number of key points.** Too many different points cloud the issue.
 - c. Mathematics matters.** Scale plays a central role in many controversial issues, and understanding really large or really small numbers brings special challenges. "Social math" (National Center for Injury Prevention and Control, 2008) uses familiar examples to show volume, mass, or relative number.
 - d. Call out logical fallacies, and hold people accountable for (mis)using them.** There's a taxonomy of problematic argument types. Get to know it and put it to use.
- 4. Persistence matters.** Beliefs related to controversial issues are often closely tied to worldviews, and such beliefs do not change quickly or easily.
 - a. People do change their minds on things that matter.** Two words: gay marriage.
 - b. Piling on evidence can bring beliefs to a tipping point.** Of course, not always.
 - c. Reflect on big changes in your own beliefs.** Chances are, it took either a long time or an immersion in the issue.
 - d. Social media may be a better venue for this than classrooms** because connections last more than a semester.
- 5. Use the local environment as a starting point** to engage in critical inquiry of the forces working to shape that place. Climate, energy, and evolution, like most topics in Earth science coursework play out in a meaningful way just outside the classroom door. Starting close to home will make the issue more relevant to the learner.