

Breakthroughs & Controversy in Science and Math

💡 Prepare to share from the syllabus that you read for hw.

Seeds of research - *a small group of students at university, meeting to discuss topics with a teacher.* (Compact Oxford English Dictionary of Current English, 2005)

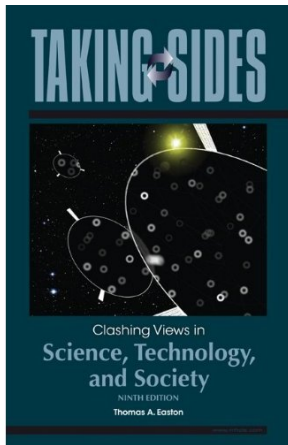
Common to every FYS:

- An introduction to research that is not discipline specific
- Interdisciplinary
- Connections with each other, faculty and the university

Our Themes:

- What is science and mathematics?
- Implications of research
- How and when are we convinced that a theory, experiment or proof is correct
- Diverse perspectives and disciplines

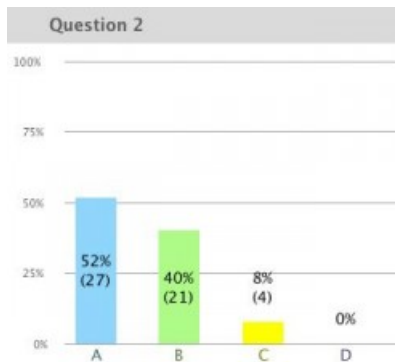
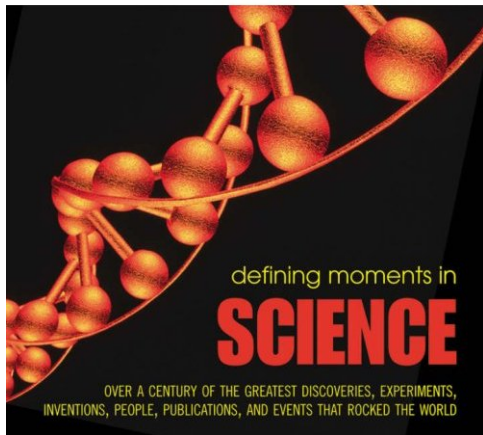
Purchase Book: 2010 Taking Sides



Discussion questions to turn in before class discussion
1/2-1 page long reflections due the next day or week

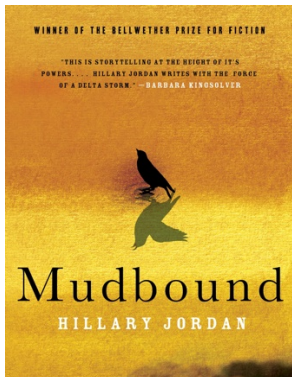


Rentals: 2010 Defining Moments and i-clicker



Research Project 1: Summer Reading Book

- Convocation & class discussion on controversy in the book
- Project - research a topic or theme that re-occurs in the book and science & mathematics connections. Prepare informal research notes and a publication quality (maximum 1/2 page for each lens) summary.



Group Interaction Course



Advice from Last Year



Discussion Question: Why are there no tests?

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- An introduction to research that is not discipline specific
- Interdisciplinary
- Connections with each other, faculty and the university
- I. A. Recognize, differentiate, and effectively employ appropriate and increasingly sophisticated strategies to **collect and interpret information**;
- I. B. Successfully integrate disparate concepts and information when interpreting, solving problems, evaluating, creating, and making **decisions**;
- I. C. Examine and evaluate how their own personal, historical, and cultural **perspectives** affect the discovery and generation of knowledge;
- II. A. Articulate and comprehend effectively, using verbal or non-verbal **communication** suitable to topic, purpose, and audience;
- II. B. Use **writing** effectively to discover and develop ideas and to articulate positions in contexts of increasingly complexity;
- IV. C. **Collaborate** effectively with others in a shared process of inquiry and problem-solving.

Speak and/or write about your research

Group Research

Introduce yourselves and summarize diverse perspectives related to your question.

- Question 1: Are there are finitely or infinitely many stars in the universe? Explain.
- Question 2: Is our universe 3-dimensional or is it higher dimensional? Why?
- Question 3: Is the universe expanding and if so, will it expand forever?
- Question 4: Most of us agree that the shape of the earth is close to a round sphere. Could the universe be round too? Does it have any kind of shape?
- Question 5: Is the universe leaking energy?

Effective Writing Rubric

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Build Connections with Each Other

Count the number of letters in your first name and find someone else in the class that has the same number of letters (or close). Find something non-obvious that you have in common and prepare to share that with the rest of the class.

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Quantify an object
Look for patterns