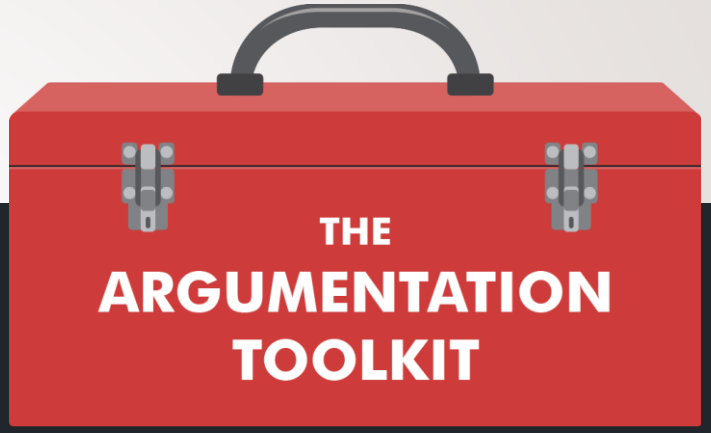


Introduction to Argumentation: Using Evidence in a Card Sort

Lisa Marco-Bujosa
Katherine McNeill
Boston College

Agenda

1. Welcome and introduction
2. Video: Using evidence to consider competing claims
3. Activity: Mystery fossil card sort
4. Video & Discussion: Arguing about competing claims
5. Session Takeaways
6. Using “The Argumentation Toolkit”

This presentation’s PowerPoint and handouts can be found at argumentationtoolkit.org under the “About” tab

Introductions

- Introduce yourself to the group
  - Grades/subject areas that you teach
  - Comfort with scientific argumentation

Not comfortable Very comfortable

Session Goals

1. Introduce the four areas of argumentation in which students need extra support: 1) *Evidence*, 2) *Reasoning*, 3) *Student Interaction,* and 4) *Competing Claims*.
2. Develop an understanding of argumentation as a *social process* in which students build, question and critique claims using evidence and reasoning.
3. Introduce a *Card Sort*, an instructional activity that encourages students to think about what evidence does and does not support a claim.

Argumentation Elements

EVIDENCE
Students use high quality evidence to support their claims.

REASONING
Students make clear how their evidence supports their claim.

INTERACTIVE
Students build off of and critique each others' ideas.

COMPETING CLAIMS
Students critique competing claims.

THE ARGUMENTATION TOOLKIT

1. Video: Using evidence to consider competing claims

This video focuses on how evidence can be used to evaluate multiple claims

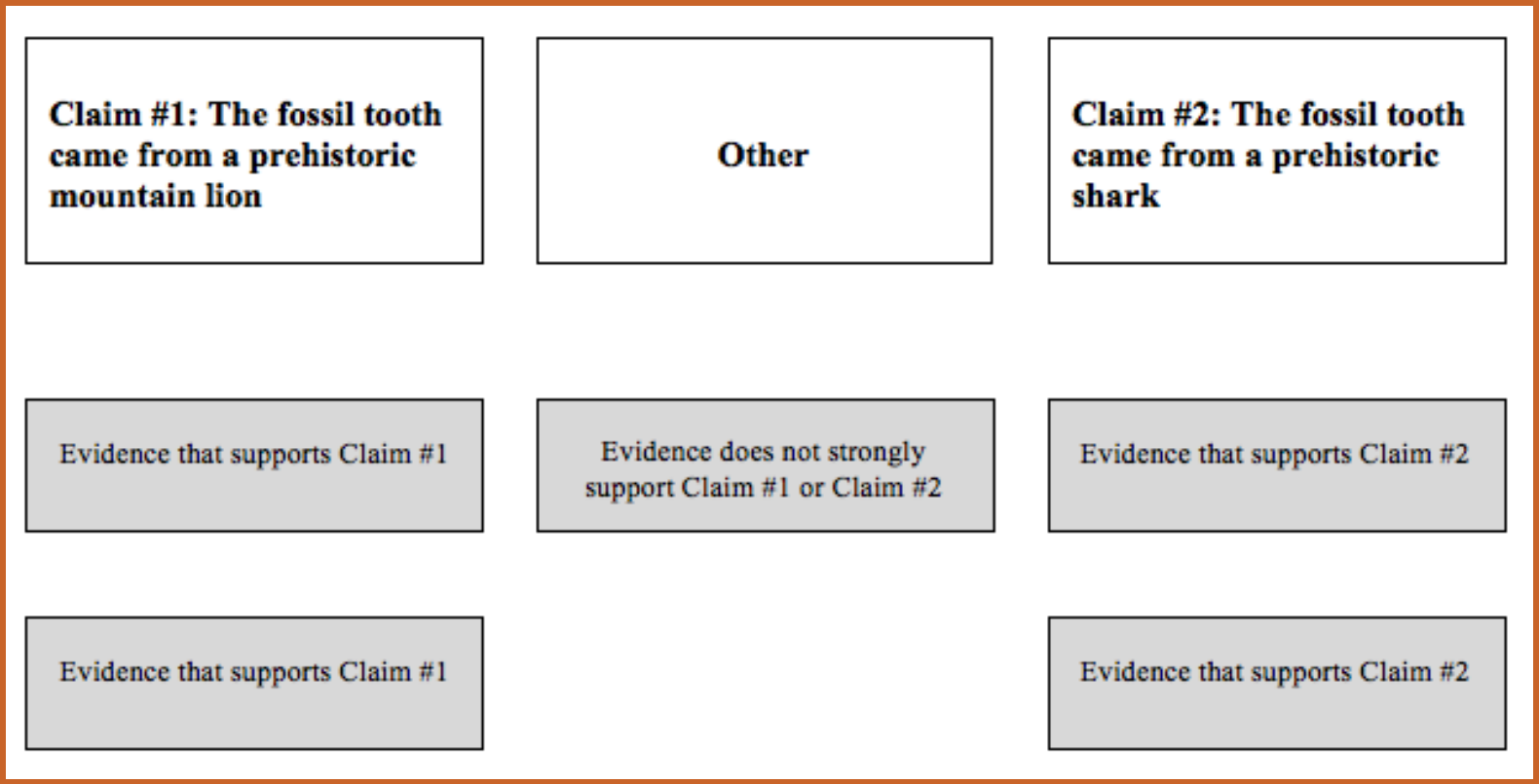
THE ARGUMENTATION TOOLKIT

2. Activity: Mystery Fossil Card Sort

The task:

- Work in pairs or small groups to categorize evidence cards as supporting either:
    1. The fossil tooth came from a prehistoric mountain lion.
    2. The fossil tooth came from a prehistoric shark.
    3. Other
- Make sure to articulate *why* you sort cards as you do

Setting up your cards



- Start with Group 1 (white evidence cards); then Group 2 (gray evidence cards)

Discussion about Card Sort

After sorting the cards from Group #1:

- Which claim do you feel is best supported given the existing evidence?

After sorting all the cards, including those from Group #2:

- What did you talk about when you were discussing the evidence?
- Did your conversations change once you received the cards from Group 2?
- How can you envision your students engaging in this activity? What would work well? What challenges would they have?

3. Video & Discussion: Arguing about competing claims

Video 2 describes engaging students in arguing about competing claims

Discussion Questions:

- What are the benefits to having your students engage in competing claims?
- What challenges do you think your students might have when engaged in this work?
- What types of activities (e.g. card sort, evidence from text, science seminar) can you envision incorporating into your instruction? Why?

4. Session Takeaways

Evidence is observations or data about the natural world that is used to support claims

Competing claims provide students with an authentic reason to argue

Some pieces of evidence can be stronger than others in support of a claim

Weighing competing claims can encourage students to think about how the evidence supports the claim, and refine their understandings of the science concepts

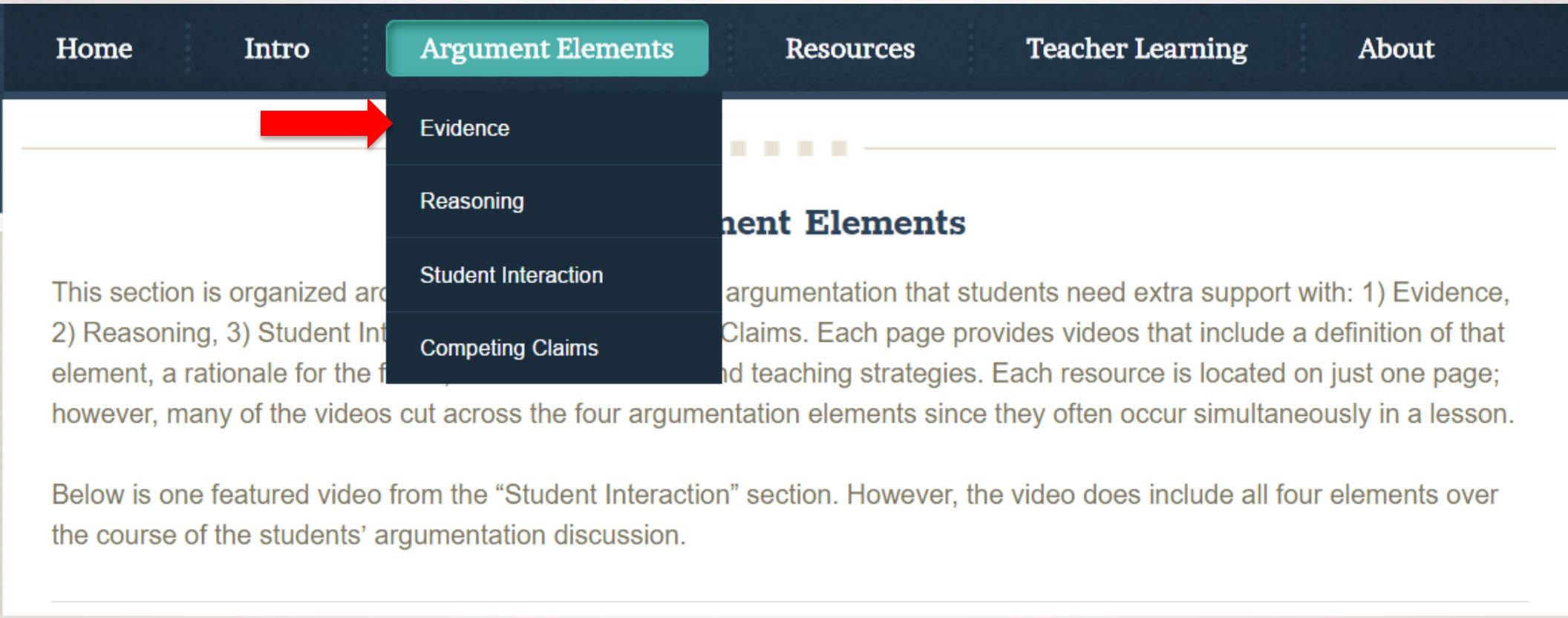
THE ARGUMENTATION TOOLKIT

Using The Argumentation Toolkit

- Want to learn more? http://www.argumentationtoolkit.org/
- Includes:
  - Videos
  - Strategy guides
- Organized by:
  - Argumentation element
  - Activity type

THE ARGUMENTATION TOOLKIT

Using The Argumentation Toolkit



THE ARGUMENTATION TOOLKIT

Using The Argumentation Toolkit

Evidence

Evidence is information about the natural world that is used to support a claim. In scientific argumentation, evidence includes data, such as observations and measurements about the natural world. Students often have difficulty using appropriate and sufficient evidence to support their claims.

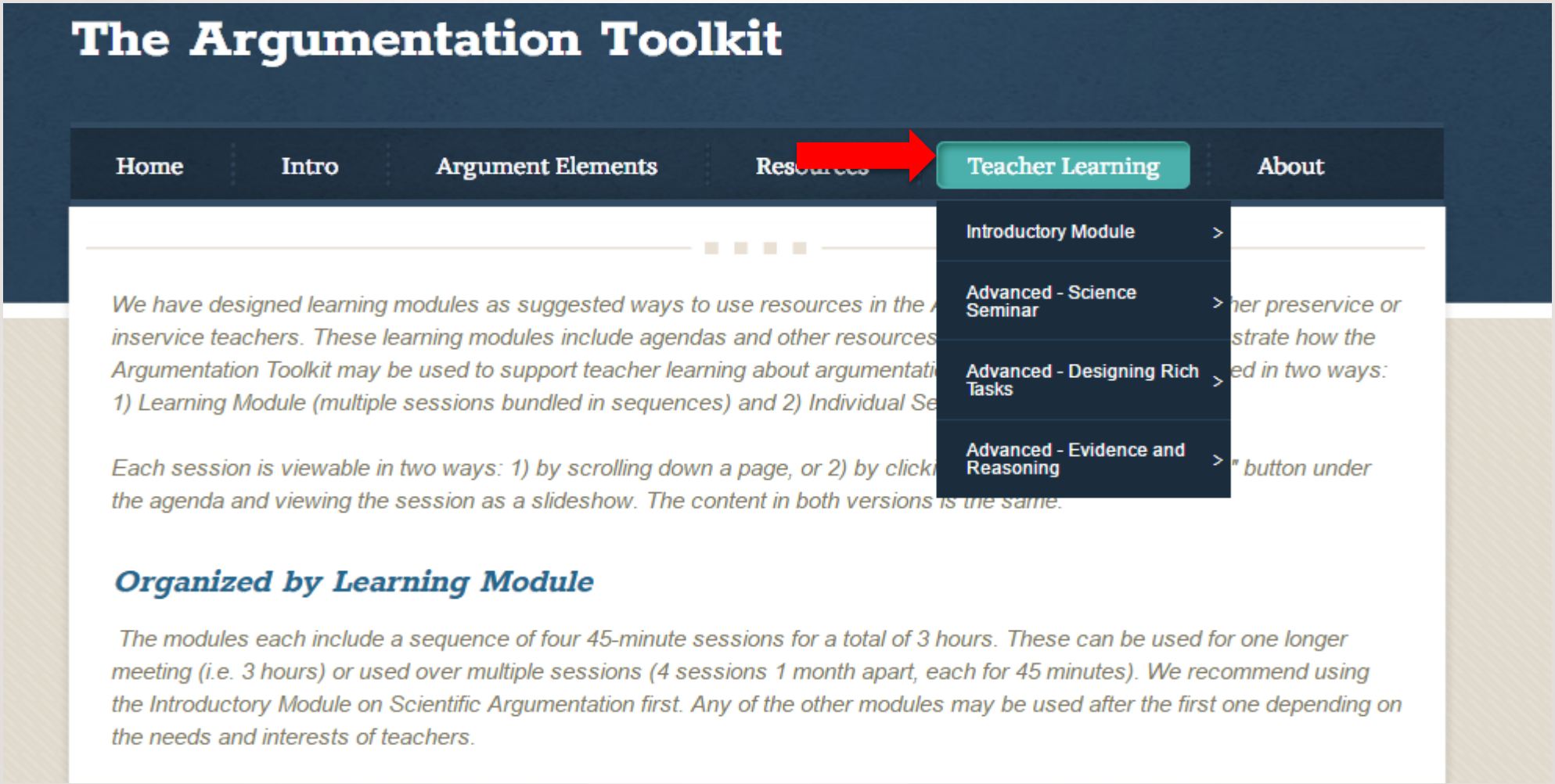
The Approach video below provides an overview of this element. The other videos include activities and strategies to support students in learning about and using evidence.

Approach: Evidence

THE ARGUMENTATION TOOLKIT

Using The Argumentation Toolkit

- Look under “Teacher Learning” for activities



Using The Argumentation Toolkit

- Look under “Teacher Learning” for activities

Session Name	Argumentation Element	Activity
What is the role of evidence in a scientific argument?	Evidence	Card Sort
How does considering competing claims support students' use of evidence and reasoning?	Competing Claims	Cart Sort
What is the role of reasoning in a scientific argument?	Reasoning	Reasoning Tool, Student Writing
How do we support students in interacting with peers during argumentation?	Interaction	Analyzing Data
What is a science seminar?	Interaction	Analyzing Classroom Transcript

More information

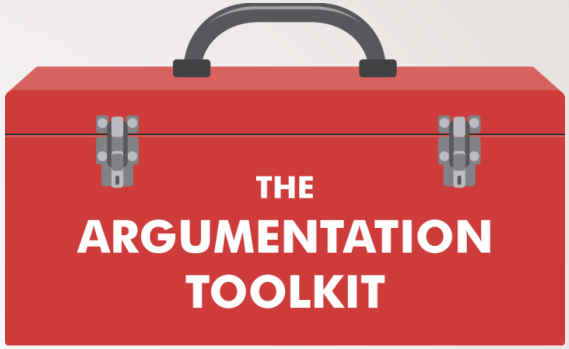
Argumentation Toolkit
http://www.argumentationtoolkit.org/

Lisa Marco-Bujosa
marcobuj@bc.edu

THE ARGUMENTATION TOOLKIT

THE LAWRENCE HALL OF SCIENCE
UNIVERSITY OF CALIFORNIA, BERKELEY

The Learning Design Group



PARTNERS AND RECOGNITION

Developed in collaboration with Boston College

Funding provided by National Science Foundation

NSF DRL-1119584

Any opinion, findings, and conclusions or recommendations expressed in this material are those of the authors(s) and do not necessarily reflect the views of the National Science Foundation.