

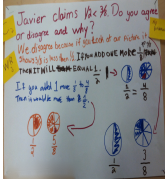
Building Partnerships and Resources to Support Mathematical Argumentation

<http://bridges.education.uconn.edu>

Argumentation Resource Packets

<http://bridges.education.uconn.edu/argumentation-resource-packets-2/>

Student A



| Commentary | |
|---|--|
| This argument is considered High . The students' claim is that they disagree with Javier. They use a pictorial representation to show that $\frac{1}{2}$ is less than $\frac{2}{3}$. They explain in words that if they add $\frac{1}{6}$ to $\frac{2}{3}$ it would equal $\frac{1}{2}$. The response could be extended by including a statement explaining in words that $\frac{1}{2}$ and $\frac{4}{6}$ are equivalent fractions. The pictorial representation that compares $\frac{1}{2}$ and $\frac{2}{3}$ could be elaborated on to show the relationship comparing $\frac{1}{2}$ and $\frac{2}{3}$. | |
| Argumentation Components | |
| Claim | Evidence |
| The claim is clearly stated: "We disagree". | The students draw a pictorial representation of $\frac{1}{2}$ and $\frac{2}{3}$ and it clearly shows that $\frac{1}{2}$ has more shaded. They also included a pictorial representation of $\frac{1}{2}$ and $\frac{4}{6}$ to show equivalence. They then state that $\frac{1}{2}$ is $\frac{2}{3}$ less than $\frac{1}{2}$. |
| Warrants | Language & Computation |
| The students explicitly state that "if you add one more $\frac{1}{6}$ to $\frac{2}{3}$ then it will equal $\frac{1}{2}$." | All mathematical computations and statements are true. |

This webpage has seven sets of student work samples (grades 3-6 and HS) as part of our Argumentation Resource Packets (ARPs). The ARPs can be used to support professional development or PLCs focused on student work samples. Each ARP comprises a task, sorting protocol, student work samples, and annotations of the work samples. There are three additional versions of the sorting protocol to use for sorting tasks linked at the bottom of the webpage. Along with the sets of student work are fully **annotated packets** that include the student work plus the commentary from a team of Bridging Math Practices participants.

Argumentation PD Modules

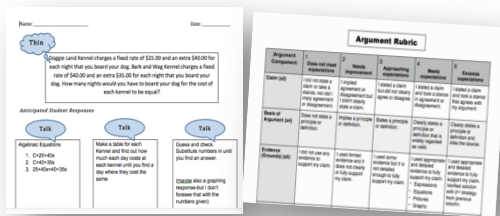
This is a **5-Module Sequence** to support learning about, and implementation of, mathematical argumentation. Listed here are the modules. Each module includes a Facilitation Guide (including timing tables and suggestions for how to implement the materials), draft PowerPoint, PDF and word docs for all handouts.

- 1 What is an argument?
- 2 Tasks to support argumentation
- 3 Norms and Routines
- 4 Classroom Discourse
- 5 Feedback and analyzing the quality of student work

Module 1: What is Argumentation?



Task and Tool Repository <http://bridges.education.uconn.edu/repository/>



The task repository contains tasks and tools focused on argumentation developed by Bridging Math Practices 2014-2015 cohort as part of their work in the 15-month grant project. Each task includes a brief description and is categorized by grade, math topic, domain and title. This section of the website is also searchable. Currently there are over 200 tasks and tools for grades 2-6 and high school.

Self-Paced PD Modules

These self-paced modules offer materials for individuals (or groups) to work through independently. The materials include classroom video, student artifacts, and narrated commentaries. These are still undergoing some refinement. Feedback is welcome.

Session 1: Mathematical Argumentation

What is a Mathematical Argument?

- A. Establish a shared definition of argumentation
- B. Identify different approaches to an argument

Session 2: Mathematical Argumentation in the Classroom

What does Mathematical Argumentation look like in the classroom?

- A. Connect argumentation to the classroom context
- B. Analyze student arguments and the relationship between argumentation and conceptual understanding

ADDITIONAL RESOURCES <http://bridges.education.uconn.edu/resources/>

This page contains many links to additional resources – both on the web and project developed.

ACKNOWLEDGEMENTS

The Bridging Math Practices Project (2014-2016) was funded by a Math-Science Partnership Grant from the Connecticut State Department of Education. The Bridges project was a collaboration among UConn (Neag and Dept. of Mathematics), Manchester Public Schools (lead partner), Mansfield Public Schools, and Hartford Public Schools. We would like to thank the CT State Department of Education for supporting this work, and would like to thank all our participants, across cohorts, whose contributions to these materials are many.

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