Protocol Guided Sorting Activity: (33–40 mins)
Bridging Math Practices Math-Science Partnership Grant

This protocol was created for the purpose of reviewing student work. It is modified from two of the previously presented protocols in the Manchester School District. The original protocols apply to when teachers bring their own students' work. This has been modified to review prepared packets of student work.

- Maryland Protocol: Examining Student Work to Inform Instruction – Maryland State Department of Education http://mdk12.org/instruction/examining/protocol.html
- Collaborative Analysis Protocol - San Diego County Board of Education http://plc.sdcoe.net/Resources/Data%20Driven%20Decisions/LASWProtocol_Dec2011Rev.pdf

This is sometimes referred to as a ***Tuning Protocol,*** as the purpose is to help a group align their visions and expectations. Here, the alignment is with respect to the question: what is a high quality argument (on this task, for this grade level)? A main goal of this protocol is to support colleagues in building a consensus around what counts as a high quality argument.

0. Assign Roles

The Handler – places work samples in agreed-upon pile
Facilitator – ensures space is made for all to contribute; supports finding consensus
Time Keeper – keeps time and ensures group doesn't exceed section time limits. Can prompt movement to next section even if full time is not used.
All– share ideas and keep notes on own set of work samples

A: Setting the context for discussion (5 mins)

Team members read and do the problem. Team members discuss: What was the "big idea" of the task/assessment? What result or claim needed justification?

B: Quick sort: Reviewing student work (15 mins)

Do a *Quick Sort* of students' work by the degree of proficiency (high, adequate, low) demonstrated with providing an argument of the relevant claim(s). The Handler places a copy of the student work into the appropriate pile as agreed upon by the group. You may initially need a "Not Sure" pile. After sorting, revisit papers in the "Not Sure" pile and match each with the typical papers in one of the other piles. Record work sample numbers in the appropriate column of the chart (next page).

The facilitator may also decide to begin the Quick Sort with some silent review of student work samples before starting discussion.

Sorting Chart

HIGH Quality (high quality mathematical argument)	**ADEQUATE Quality** (adequate mathematical argument)	**LOW** (low quality mathematical argument)

C: Strengths and areas for growth? (5 mins)

Group member summarize key ideas from their Sorting Discussion regarding the strengths and areas for growth for individual samples, each group[1] (High Quality, Adequate, Low) of samples, or the overall set with respect to the argumentation?

HIGH Quality (high quality mathematical argument)	**ADEQUATE Quality** (adequate mathematical argument)	**LOW** (low quality mathematical argument)
Strengths overall for the class		

[1] This question is phrased in terms of "subgroups." You may or may not be able to characterize the group as a whole. As needed, describe individual or pairs of student work.

D: Reading ARP Commentaries (optional: 5-7 mins)

As deemed useful, group members read the commentaries in the Argumentation Resource Packet to gain new perspectives on selected student work samples, their strengths and areas for growth, and what counts as a high quality argument.

E: Reflection (5 mins) *Each person shares*

The facilitator guides the group to take turns in sharing a reflection. Group may decide to reflect on the same question, or each share a take away.

a. What did you learn about argumentation and how students engage argumentation from looking at the work of these students? You might also consider aspects of task design.

b. Did you have any *ah hah* moments?

c. What questions remain for you? What would you like to lean more about?

d. What will you take away from this discussion back to your classroom? What ideas might impact your planning or teaching?

F: Reflection on Protocol Implementation (3 mins)

Facilitator guides a reflection on how the protocol process worked. Group members contribute ideas. Members make suggestions for modifications to future protocol as needed.