



CCR SIA STUDENT WORK PROTOCOL FOR MATHEMATICS

Presenting Instructor: _____

Level of Learning: _____

Date: _____

This protocol is designed to evaluate the quality of student assignments and their alignment with the CCR standards. For each step in the process, use the guiding questions to stimulate and inspire discussion and to determine a set of findings.

Step 1 : Analyze the purpose and demands of the assignment (without consulting other materials, such as the standards or student work). (10–15 minutes)

Take time individually and then collectively to develop a focused understanding of the assignment. Take the assignment at face value and do not assign to it purposes or demands that are not readily evident.

Guiding Questions:

- What do you think students would learn from completing this assignment?
- Why might an instructor give this assignment?
- Is it clear what students need to know and be able to do to successfully complete the assignment?
- Which mathematical practices might be observed in completing the assignment?
- What will students actually learn from working on the problem(s) and answering the question(s) in this assignment?

Notes and observations on the purpose and demands of the assignment:

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Step 2 : Select the CCR standards that best match the assignment’s demands.
(10–15 minutes)

Examine the assignment and its supporting instructional materials: answer keys, scoring guidelines, and/or rubrics. Remember to consider all domains of the CCR standards.

Guiding Questions:

- Which level-specific CCR standards (up to four) best match the content and performance demands of the assignment (identified in Step 1)? Are there any gaps between the demands of those standards and the assignment?
- Is the assignment more closely aligned with CCR standards from a lower or higher level? (If it intentionally contains components that are designed to review content from lower or higher levels, or if it does not clearly fit any CCR standard, go to Step 4.)
- Is one or more of the following key instructional advances, listed below, evident in the assignment?
 - **Focus:** Does the assignment address the Major Work of the Level (MWOTL)? Does it provide on-level problems and activities that are tied to the MWOTL?
 - **Rigor:** Does the assignment pursue conceptual understanding, procedural skill, and/or fluency?²

Alignment Descriptors: Rate alignment for every standard identified as a target for the assignment.

ALIGNMENT OF THE ASSIGNMENT WITH THE IDENTIFIED CCR STANDARDS		
3	EXCELLENT	The demands of the assignment are clearly consistent with all aspects of the content of the identified standard(s).
2	STRONG	The demands of the assignment are consistent with the <i>most critical</i> aspects of the identified standard(s). However, some of the <i>less critical</i> aspects of the standard(s) may not be addressed.
1	WEAK	The assignment demands do <i>not</i> address the <i>most critical</i> aspects of the identified standard(s). However, some of the <i>less critical</i> aspects of the standard(s) are addressed.
0	NO ALIGNMENT	No CCR standards match the demands of the assignment.

² Coherence—the third key advance in mathematics—deals with how lessons and units connect. It is not likely to be able to identify coherence in a single assignment. However, in the redesign of the assignment, the group may want to consider the prerequisite content students need to complete the assignment and how the assignment connects to future learning.

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Notes, observations, and alignment ratings on the CCR standards that best match the assignment, including the Mathematical Practices:

State whether one or more of the instructional advances are represented in the assignment. If so, explain how:

Note gaps between the demands of the selected standards and the assignment:

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Step : Analyze student work. (20–25 minutes)

Work *individually* to answer the questions in the following table for each student work sample.

Student Work Sample	(1) What does the student's work demonstrate about the depth of his/her understanding of the content?	(2) What does the student's work demonstrate about his/her proficiency with the demands of the targeted CCR standards, including the Standards for Mathematical Practice?	(3) According to the scoring guidelines and answer keys, what is the student's proficiency regarding the targeted CCR standards? (If no scoring guidelines are provided, mark with N/A.)
Student # _____			
Student # _____			
Student # _____			

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Student # _____			
Student # _____			
Student # _____			

Work *collectively* to compare your responses in the chart above and then to answer the following questions about the patterns seen across the collection of student work samples.

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Guiding Questions:

- What does the pattern of student responses show about students' understanding of the mathematical context of the assignment?
- What are the most frequent and fundamental problems students appear to have with the assignment? Are there common errors made across the collection of student work?
- What does the student work tell us about the kind and level of knowledge and skills students have learned and still need to learn? What are the implications of the findings regarding needed additional instruction or re-envisioning of the assignment?
- What do the patterns across multiple student work samples demonstrate about the clarity and alignment of the assignment (i.e., the directions, scoring guidelines, and supporting materials?)
- In what ways does the assignment allow (or not allow) students to demonstrate various levels of proficiency with the targeted standards?

Notes and observations on the patterns across the student work samples:

Step 4 : Redesign and strengthen the assignment. (15–20 minutes)

Review your notes from Steps 1–3 to decide collectively how to strengthen the assignment (what to keep, delete, or add) so that it more closely aligns with the CCR standards.

Guiding Questions:

- If you determined the assignment as weakly aligned with the identified CCR standards (score of 1), how can the assignment be strengthened? Use the content of the selected standards more than the specifics of the original assignment to guide the redesign.
- If only one standard aligns with the original assignment, which standards could be added to enrich the assignment? (In mathematics, if the assignment is tightly focused, the answer to this question may be “none.”)
- If the assignment is already well-aligned with the identified CCR standards (mainly scores of 2 and 3) but students did not do well, what supportive instructional approaches might help students reach the proficiency? (Consider how to reconfigure the assignment to address common errors and misconceptions.)
- If the assignment is already well-aligned with the identified CCR standards (mainly scores of 2 and 3) and students did well, how might the assignment be re-envisioned to challenge students further? In what ways could a re-envisioned assignment promote active problem-solving, reasoning, and critical thinking?
- What prerequisite knowledge do students need to complete the assignment? What are the assignment’s connections to future learning?

Suggestions for improving the assignment and accompanying instructional approaches: