

Integrating Language Routines Into Instruction

Critique, Correct, and Clarify

Students can start making sense of academic content and negotiate meaning in a language before they understand a language completely.

Grades 3–5

Language Routine: Critique, Correct, and Clarify

The purpose of this routine is to optimize output by giving students a piece of mathematical writing that is not their own to analyze, reflect on, and develop. The intent is to use an incorrect, incomplete, or ambiguous written argument or explanation that students improve upon by correcting errors and clarifying meaning, thereby advancing their own mathematical thinking and communication.

Routine	
PRESENT	Present a partial/broken argument, explanation, or solution method. The teacher can play the role of the student who produced the response and ask for help in fixing it. <ul style="list-style-type: none">• <i>Given response could include a common error</i>• <i>Given response should include an ambiguous term or phrase, or an informal way of expressing a mathematical idea</i>
PROMPT	Prompt students to identify the error(s) or ambiguity, analyze the response in light of their own understanding of the problem, and work both individually and in pairs to propose an improved response.
SHARE	Pairs share out their drafts of the improved response.
REFINE	Students refine their own draft response.

(continued)

From the Classroom

PRESENT	<p>Ms. L: <i>Let's look at this student's work. This is from a student in another class, and he is asking for our help. He knows he made a mistake but isn't quite sure what he needs to do fix it.</i></p> <div style="text-align: center; margin: 10px 0;"> $\frac{2}{3} + \frac{4}{5} = \frac{6}{8}$ <p>I added the numerators and got 6. I added the denominators and got 8.</p> </div>
PROMPT	<p>Ms. L: <i>Look at this work for a minute, and make notes, just thinking to yourself, about what you notice. What would you tell him? I'll give you a minute on your own to start.</i></p> <p>[Ms. L pauses for a full minute while students analyze the student work.]</p> <p><i>Turn to your elbow partners, and talk this through. What are your thoughts? How can we help this student with his work?</i></p> <p>[Ms. L circulates as students discuss, listening to their conversations and noting any common misconceptions or common approaches among the small groups. She allows 3-4 minutes for partners to discuss before pausing their discussions.]</p> <p><i>I'm hearing such detailed and helpful conversations. Great job focusing on the math. On a piece of paper, write down your thoughts for this student. Include the math and any explanation with words or drawings that you think will help this student understand his mistake and learn how to solve this problem.</i></p>
SHARE	<p>Ms. L: [after allowing students 5 minutes to record their thoughts]</p> <p><i>Pause your work for a moment. You are going to join with two other pairs, making groups of six. Each pair will take turns sharing with the others about what they would tell this student about his calculation error. Each pair has 2 minutes to explain to the others, and then I'll signal when it is time for the next group to start sharing. How long does each group have to share?</i></p> <p>Whole Class: 2 minutes</p> <p>[Students work in their groups. Ms. L circulates, listening to student discussions and noting similarities and differences between student approaches.]</p>
REFINE	<p>Ms. L: <i>I heard so many thoughtful and detailed responses about this error. Let's take a few minutes to gather all our thoughts and decide what makes sense to tell this student about his work. Get back together with your original partner, and refine your work to include any of the ideas you heard from others that you think are important. You can add to or change what you have. We want to support this student with words, with pictures, with numbers, or anything we possibly can to help make sense of the problem. You have 5 minutes to complete your work.</i></p> <p>[Ms. L circulates as students are working, prompting students to add diagrams, written explanations, or other representations to deepen their explanations.]</p>