

Integrating Language Routines Into Instruction

Compare and Connect

Students need opportunities to reflect on and linguistically respond to comparisons. Using routines that prompt meta-cognitive and meta-linguistic awareness supports students in mathematically productive conversations.

Grades K–2

Language Routine: Compare and Connect

The purpose of this routine is to foster students' meta-awareness as they identify, compare, and contrast different mathematical approaches, representations, concepts, examples, and language.

Routine	
SET-UP	<p>Students are tasked with understanding one another's solution strategies by relating and connecting other students' approaches to their own approach. Ways to set this up so that multiple strategies are likely to be generated by each pair of students include:</p> <ul style="list-style-type: none">• <i>I solve it one way, you solve it another</i>• <i>Divide and conquer: you do one and I do another</i>• <i>I have a piece of information, you have a piece of information</i>
WHAT IS SIMILAR, WHAT IS DIFFERENT	<p>Students first identify what is similar and what is different about the approaches. This can also be an initial discussion about what worked well in one approach compared to another and what might make a particular approach more complete or easy to understand.</p>
MATHEMATICAL FOCUS	<p>Students focus on specific mathematical relationships, operations, quantities, and values. Using Talk Moves effectively supports students in making mathematical comparisons and connections. For example:</p> <ul style="list-style-type: none">• <i>Who can restate _____'s reasoning in a different way?</i>• <i>Did anyone solve the problem the same way but would explain it differently?</i>• <i>Did anyone solve the problem in a different way?</i>• <i>Does anyone want to add on to _____'s strategy?</i>• <i>Do you agree or disagree? Why?</i>

(continued)

From the Classroom

SET-UP	<p>Mr. B: <i>Henry used 12 blocks to create a building. What might his building look like?</i></p> <p>[Students work individually with blocks to count out 12 blocks and create their own buildings]</p>
WHAT IS SIMILAR, WHAT IS DIFFERENT	<p>Mr. B: <i>I see we are all finished creating buildings. Look at what the other buildings at your table look like. Did anyone build it just like you did? How many different buildings do you see?</i></p> <p>[Mr. B circulates while students look at each other's constructions.]</p>
MATHEMATICAL FOCUS	<p>Mr. B: <i>Let's talk about what you are noticing. Angel, how did you build with your blocks?</i></p> <p>Angel: <i>I built mine with four blocks put together in a square on the bottom. Then I put four more right on top of those, and my last four right on top.</i></p> <p>Mr. B: <i>Show me a thumbs up if you built yours just like Angel did?</i> [Pauses and looks at student responses] <i>Angel, how can we describe what you built in a number sentence?</i></p> <p>Angel: <i>Ummm, I think I would write $4 + 4 + 4 = 12$.</i></p> <p>[Mr. B writes the number sentence on a class chart alongside Angel's name]</p> <p>Mr. B: <i>That makes sense to me, based on how you described your building. Who built something different?</i></p> <p>Konika: <i>I also started with four blocks on the bottom but mine were all in a row. Then I put four more on the next layer. But then I decided to make it really tall so I stacked up my last four blocks like a chimney.</i></p> <p>Mr. B: <i>Interesting. So Konika and Angel each used 12 blocks but their buildings do not look the same! Konika, how would you represent your building with a number sentence?</i></p> <p>Konika: <i>$4 + 4 + 1 + 1 + 1 + 1 = 12$.</i></p> <p>[Mr. B writes the number sentence on a class chart alongside Konika's name.]</p> <p>Mr. B: <i>We've heard two different ways of building so far. At your table groups, record a number sentence for each of the different ways that you built with your blocks. Be ready to share your equations.</i></p> <p>[Mr. B continues the whole-class conversation about the buildings using Talk Moves to emphasize the similarities and differences between the different student approaches and different equations.]</p>