Math Language Routine 7: Compare and Connect

Read About It	**Purpose:** To foster students' meta-awareness as they identify, compare, and contrast different mathematical approaches, representations, concepts, examples, and language. Students should be prompted to reflect on and linguistically respond to these comparisons (e.g., exploring why or when one might do/say something a certain way, identifying and explaining correspondences between different mathematical representations or methods, wondering how an idea compares or connects to other ideas and/or language.) Teachers should model thinking out loud about these questions. This routine supports meta-cognitive and meta-linguistic awareness, and also supports mathematical conversation. **Example 1 – Compare and Connect Solution Strategies** Tell students their job is to understand one another's solution strategies by relating and connecting other students' approaches to their own approach. 1. SET-UP: Ways to set this up so that multiple strategies are likely to be generated by each pair of students: • I solve it one way, you solve it another • Divide and conquer: you do one and I do another • I have a piece of info, you have a piece of info 2. WHAT IS SIMILAR, WHAT IS DIFFERENT: 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 this or that approach, and what might make this or that approach more complete or easy to understand. 3. MATHEMATICAL FOCUS: Students are asked to focus on specific mathematical relationships, operations, quantities and values. For example: ● Why does this approach include multiplication, and this one does not? ● Where is the 10 in each approach? ● Which unit rate was used in this approach? ● Who can restate ___'s reasoning in a different way?" ● "Did anyone solve the problem the same way, but would explain it differently?" ● "Did anyone solve the problem in a different way?" ● "Does anyone want to add on to _____'s strategy?" ● "Do you agree or disagree? Why? **Example 2 - Which One Doesn't Belong?** Pairs of students are provided with sets of four numbers, equations, expressions, graphs, or geometric figures. They must decide

	together how to group the sets so that three of the items fit within a category they have created and one does not. Both partners should be prepared to explain to a different group how they agreed on a category and justify which item did not fit.
Watch It	Compare and Connect