stage 5:
comparing numbers

Big Idea: Quantity

Quantity is the big idea that describes amounts, or sizes. It is a fundamental idea that refers to quantitative properties; the size of things (magnitude), and the number of things (multitude).

Why are Number Comparisons Important?

Quantity means that numbers represent amounts. If students do not possess an understanding of Quantity, their knowledge of foundational mathematics will be undermined. Understanding Quantity helps students develop number conceptualization. In order for children to understand quantity, they need foundational experiences with counting, identifying numbers, sequencing, and comparing. Counting, comparing the magnitude of collections, and using numerals to quantify collections, formed the developmental progression of experiences in Stages 1 and 2. Children who understand number concepts know that numbers are used to describe quantities and relationships between quantities. An understanding of magnitude is vital to understanding numbers.

In Stage 5, students take their growing understanding based on their experiences with numbers and number relationships, and use mathematical symbols to compare magnitudes. They are asked to compare actual quantities in a variety of settings, and use the <, >, and = symbols to do so.

Stage 5 Learning Progression

Concept	Standard	Example	Description
5.1: Equals	K.CC.7	8 = ?	Expanding on the introduction of the equal sign in 2.5, in which the student first sees and hears language like 'the same as' 'as many as' and then, 'equals,' in Stage 5 the student is asked to draw on material learned in Stages 1-3 involving part-whole, combinations to 10, the commutative property, and the actions of addition and subtraction, now with combinations to 20. Throughout Symphony Math, the equal sign appears in different positions to ensure that an equation with an unknown initial quantity is as familiar as the more common equation with the result being the unknown. The answer to an equation does not have to be what follows, or comes after, an equal sign. The equal sign is a symbol that expresses the relationship, 'is the same as.' An understanding of the concept of equality is essential to successful algebraic thinking.
5.2: Greater Than	K.CC.7	6 > ?	First with 1-digit numbers, then 2-digit numbers, students are scaffolded to the use of the shortcut symbol, >, for 'greater than.' As they move into 2-digit numbers, they use their knowledge of tens and ones for the comparisons. Being able to express which quantity is more than another also builds on the idea that larger numbers are made up of smaller numbers, a key idea in understanding number relationships.
5.3: Less Than	K.CC.7	3 < ?	Finding 'less' when using pictorial tools is more apparent for the student than when comparing numerals. As the student progresses to the sole use of numbers for the comparison 'less than,' she has shown her comfortability for the move out of the representations to the symbolic, by using the idea of the tens and ones hierarchy.

Using the Extra Practice Worksheets

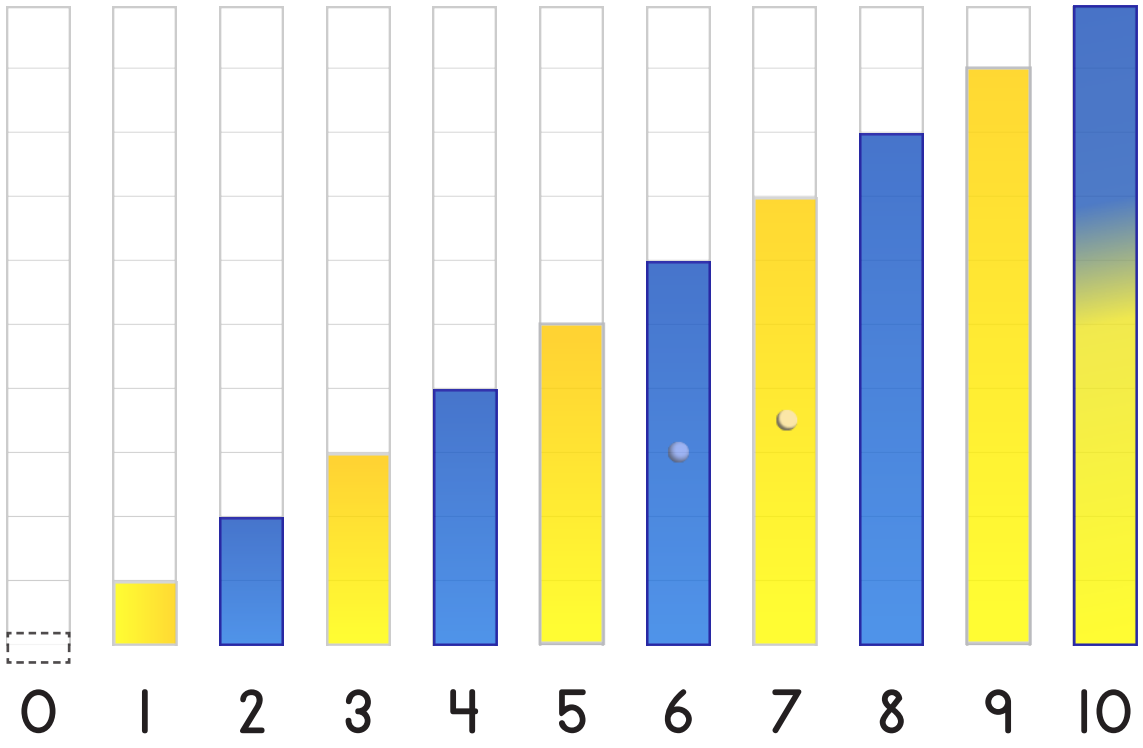
The Symphony Math Worksheets provide extended practice using the Multiples Ways of Knowing from the Symphony Math program. Students should work through all worksheets in the order given:

Worksheet	Purpose	Instructions
Manipulatives	Use a visual model to represent the concept.	Create bars, dot cards, or number lines for each item.
Bridge	Connect symbols to their visual representations.	Create objects, numbers, and symbols to complete each item.
Symbols	Understand the concept at the abstract level.	Create numbers and symbols to complete each item.
Apply	Extend understanding to real-life problem solving.	1) Read the story presented at the top of the page. 2) Create a number model of the full solution. 3) Write the number sentence that matches the model.

Group Learning

The Symphony Math Extra Practice materials are designed to promote a conversation about the Big Ideas in math. One-on-one or small group instruction with the materials is recommended for students who need more time to make connections between the mathematical concepts in the Stage and the application of those concepts in their math curriculum.

Symphony Bars: Stage 5



Dot Cards: Stage 5