

Mathematics
COSA Fall Special Education Conference
October, 2017
Instruction Example

Essentialized Standard

Grade 5 Numbers and Operations in Base Ten

M05NBT1.3b	Number and Operations in Base Ten	Compare the magnitudes of whole numbers 1-60 and decimals using .5.	L - compare the magnitudes of numbers 0-20 using same, less, more. M - compare magnitudes of numbers 21-40 using <, =, and >. H - compare magnitudes of numbers 41-60 and decimals 1.5, 2.5, 3.5, 4.5, and 5.5 using <, =, and >.
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Instructional Example

Objective:

Student will compare the magnitudes of whole numbers 1-60 and decimals using .5.

Materials:

Very Low Level – Have objects (tiles, beads, balls, erasers, etc.) of same size, shape, and color initially to make piles to compare. Have similar objects with different attributes on hand for generalizing the skill. Card with symbols <, =, > and Number line

Low Level – * student will need to have number-value correspondence for this level of the standard. 2 sets of number cards (0-20), Card with symbols <, =, >

Medium Level – 2 sets of number cards (21-40), Card with symbols <, =, >

High Level – * student will need to have symbol-value correspondence with decimal numbers 1.5, 2.5, 3.5, 4.5, 5.5 for this level of the standard. 2 sets of number cards (41-60), cards with 1.5, 2.5, 3.5, 4.5, 5.5, Card with symbols <, =, >

Procedures:

This lesson plan can be used at various levels depending upon student ability.

Very Low Level – **Objective:** Using manipulatives, student will compare groups of 0-10 objects using the language “same, less, and more.” Student will identify symbols for less than, same, and more than; <, =, and >.

*Student must know the meaning of “less, same, and more”; if s/he does not, start with instruction on that skill using groups of objects with a large range. For example, use a group of 1 cup and a group of 10 cups to introduce the concepts of less and more so students can easily see the difference between the two groups. When introducing the concept of “less, same, and more,” initially begin with two groups of objects that have all the same attributes. As students master the concepts, use a variety of manipulatives to compose the groups. For example, start with only blue bears in both groups and when students have the concept with only blue bears, add some green bears, or blue blocks. This helps student generalize the knowledge to a multitude of objects, not just blue bears.

At a very low level, the student would accurately compare two groups of 0-10 similar objects, describing one group as less, same, or more than the other. Present the student with two groups of objects. Start with a large range between the two groups of objects, 5 or more, and then narrow the range to make the task more difficult. Demonstrate how to compare the first group to the second. “There are 3 bears in this group. (Point to each as you explain.) There are 10 bears in this group. This group has less than this group.” When the student can accurately compare groups of similar objects as less than, same, or more than, move instruction on to comparing dissimilar objects. Finally, connect the words “less, same, more” to symbols; $<$, $=$, and $>$ using similar instruction. Show the symbol card for one word and master one symbol/word at a time. Once each can be identified individually, (“What symbol is this $=$? Same, that’s right, this is same,” show a symbol card and a distractor card (letters or numbers) and ask student to choose the one that matches the word you say. “Which card is *less than*?” Once students can discriminate between the symbol and the distractor, use two symbol cards and eliminate the distractor. After student can identify the correct symbol between two, add the third symbol card and repeat process.

Once the student can identify the correct symbol for each word, apply that skill in comparing the groups of objects. First, demonstrate for the student how to use the symbol cards in comparing two groups by creating two groups of objects and placing the correct symbol card between them. Then, practice with the student several times correctly before asking s/he to complete the task independently. You may want to start with just two symbols and add the third once student can complete task independently with two.

Low Level– Objective: Student will compare the magnitudes of numbers 0-20 using same, less, more. Student will compare whole numbers 0-10 using the symbols $<$, $=$, and $>$.

*Student must have number-value correspondence to proceed with this lesson. If your student does not have number-value correspondence, use number cards and manipulatives to teach students the value of numbers 0-20.

At the low level, students would compare one whole number to another from 0-20, describing the first as less, same, or more than the second number. Present the student with two cards, leaving a space in the middle. Have student verbally compare the first card to the second correctly, "5 is less than 18." Once student completes this correctly to mastery, reduce the range of the cards from 0-10 and add the symbol cards to the mix. Present the student with two cards, leaving a space in the middle for the symbol card, and have the student select the correct symbol, first from two cards and then from three. An example is the practice test item below.

Medium Level – Objective: - Student will compare magnitudes of numbers 21-40 using $<$, $=$, and $>$.

At the medium level, students would compare one whole number to another from 0-20, describing the first as less, same, or more than the second number. Present two number cards to the student and have the student select the correct symbol card from a field of three cards. An example is the practice test item below.

High Level – Objective: Student will compare magnitudes of numbers 41-60 and decimals 1.5, 2.5, 3.5, 4.5, and 5.5 using $<$, $=$, and $>$.

* Student will need to have symbol-value correspondence with decimal numbers 1.5, 2.5, 3.5, 4.5, and 5.5.

At the high level, students would compare one whole or decimal number to another from 41-60 and 1.5-5.5, describing the first as less, same, or more than the second number. Present two number cards to the student and have the student select the correct symbol card from a field of three cards. An example is the practice test item below. You may want a number line showing whole numbers and decimals by .5, starting at 1.5 and ending at 5.5 to help with decimals if your student is struggling.

Instructional Progression

Many possibilities exist for lesson creation with the examples presented here. It is important to start instruction where the student is currently functioning and implement the appropriate lesson plan with them. Once data indicate that the student is ready for the next level of instruction proceed to it after reviewing the level the student has mastered. Let the data be your guide!

Practice Test Item

L- Here are two numbers. (Point to student materials.) Is 12 less than 12, the same as 12, or more than 12? [Correct Answer = B, =]

$$12 \underline{\quad} 12$$

A	B	C
<	=	>

M- Here are two numbers. (Point to student materials.) How do they compare? Is 32 less than 24, the same as 24, or greater than 24? [Correct Answer = C, >]

$$32 \underline{\quad} 24$$

A	B	C
<	=	>

H – Here is a math sentence missing its symbol. (Point to student materials.) Which symbol completes the sentence correctly: <, =, > ? [Correct Answer = A, <]

$$1.5 \underline{\quad} 5.5$$

A	B	C
<	=	>