



WHAT IS IT?

Comparing Numbers

Comparing numbers (or groups of objects) involves determining whether one number (or number of objects in a group) is more than, less than, or the same as another number (or number of objects in a group).



Ordering Numbers

Ordering numbers involves figuring out which of two numbers is larger than the other. In other words, given two numbers x and y, y is larger than x, if in counting, x comes before y.

Key skills and concepts	Definitions
Understand language used to describe comparisons and ordering	For comparisons, this includes understanding the words, “more, fewer, same.” For ordering, this includes understanding words like, “first, second, third.”
Know how to use matching to compare the number of objects in two groups	Students can compare groups of objects by matching one object in one group to one object in a second group until all the objects in at least one of the groups has been matched. If one group has unmatched objects, that group has more objects than the other group.
Know how to use counting to compare and order	Students can compare groups of objects by counting the number of objects in both groups and then comparing the numbers. Students must understand that number words that are later in the counting sequence represent larger quantities and number words that are earlier in the counting sequence represent smaller quantities (e.g., “1 counted 4 cars and 5 trucks, so there are more trucks because 5 comes after 4”).



WHY IS IT IMPORTANT?

The abilities to compare and order numbers contribute to overall number concepts and build a solid foundation for later math skills like addition and subtraction.



HOW DOES IT DEVELOP?

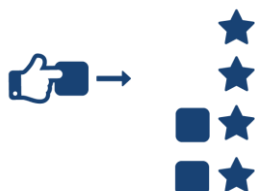
At this age Children can typically:

4	<ul style="list-style-type: none"> • Begin to compare groups of 1-6 by matching. • Begin to count objects in groups to compare. At the early levels, students are not always accurate when a larger collection’s objects are smaller in size (e.g., 10 legos) than the objects in the smaller collection (e.g., 4 large blocks). A student at this level may accurately count the number of objects in each group, but when asked, says the group of large blocks has more. • Make accurate comparisons via counting, but only when objects are about the same size and groups are small (about 1-5 items).
5	<ul style="list-style-type: none"> • Compare sets accurately by counting, even when a larger group’s objects are physically smaller. Figure out how many more or less. • Identify and use ordinal numbers from “first” to “tenth.” For example, the student can identify who is “fourth in line.”
6	<ul style="list-style-type: none"> • Accurately count two groups of an equal number of objects, and say they have the same number, even if one collection has physically larger items. • Use mental images and knowledge of number relationships to determine relative size and position. For example, answer which number is closer to the number “6”, “4”, or “9” without counting physical objects. • Order lengths marked into units (1-6, then beyond). For example, given towers of cubes, can put them in order, a tower with one cube 1 to a tower with 6 cubes.

SKILL: NUMBER COMPARISON AND ORDERING

STRATEGIES TO SUPPORT DEVELOPMENT OF NUMBER COMPARISON AND ORDERING

Encourage students to use matching to compare groups of objects.



Students can compare groups of objects by matching one object in one group to one object in a second group until all the objects in at least one of the groups has been matched. If one group has unmatched objects, that group has more objects than the other group.

THE NEXT STEP

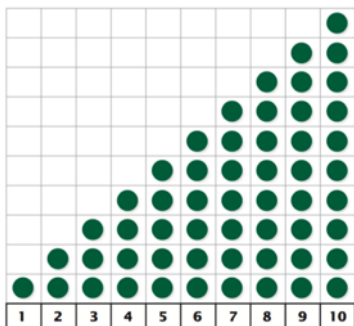
Once students can match small, equal collections of dissimilar items and show that they are the same number, provide opportunities for them to compare groups of 1-6 by matching.

Prompt students to count, and then verify that counting led to correct judgements.



Students can compare groups of objects by counting the number of objects in both groups and then comparing the numbers. In order to use this strategy effectively, students need to understand that number words that are later in the counting sequence represent larger quantities and number words that are earlier in the counting sequence represent smaller quantities. A cardinality chart can help students develop this understanding.

Figure 2. Sample cardinality chart⁵⁷



Reproduced from D. Frye, A. J. Baroody, M. Burchinal, S. M. Carver, N. C. Jordan and J. McDowell, *Teaching Math to Young Children, A Practice Guide* (NCEE 2014-4005) (Washington DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education, 2013).

THE NEXT STEP

Once students can accurately count to compare sets of 1-5 objects that are about the same size:

- provide opportunities for them to work with larger sets of objects and with sets of objects that are different sizes.
- ask students to determine how many more or less one set has than the other set.

THE LINGO

Cardinality chart – A visual model that shows the numerals 1-10 with the quantity of each number shown in columns above each numeral.

Matching – Comparing groups of objects by matching one object in one group to one object in a second group until all the objects in least one of the groups has been matched. If one group has unmatched objects, that group has more objects than the other group.

SKILL: NUMBER COMPARISON AND ORDERING

INTEGRATING NUMBER COMPARISON AND ORDERING THROUGHOUT THE DAY

ROUTINES



Question of the day

- Provide a question that has two answer choices (or more, depending on how many groups you want to end up with)
- Have students answer the question on a chart with columns for each answer choice (by writing their names on the chart, writing a checkmark on the chart, putting a dot sticker on the chart, etc.).
- Discuss which group has more/fewer/the same amount.

TRANSITION



Encourage students to vote on upcoming activities. Compare results based on more, fewer, and same amount.

MEALS



Before mealtimes, count food items. Divide food items into two groups. Ask questions and discuss which group has more and how students determined which group has more.

OUTDOOR TIME



Ask children to compare their scores when they have played a game that requires keeping score. For example, if children are playing soccer, they could compare the number of goals each team scored. If children are practicing shooting balls through a basketball goal, they could compare the number of times the ball went through the basketball goal to the number of times they did not make the ball go through the basketball goal.

CENTERS



Provide opportunities for students to play the game of “compare,” where two students each have a stack of number cards and each child turns over the card that is at the top of his/her stack. The students compare their flipped cards using a strategy that makes sense to them and determine who has more. The student with more keeps both cards. Students repeat this process until one student has all of the cards. Over time, students can play this game repeatedly but with different types of number cards. The number cards could have images of pictures, dot images, numerals, or a combination of these types of representations of quantities.

SKILL: NUMBER COMPARISON AND ORDERING

SAMPLE ACTIVITIES THAT SUPPORT NUMBER COMPARISON AND ORDERING

Favorites Chart[Available as PDF](#)

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The Favorites Game[Available as PDF](#)

WWC Report

Build and Compare Towershttps://learnzillion.com/lesson_plans/2144

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Ice Cream Sundae Math[Available as PDF](#)

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Snack Time[Available as PDF](#)

WWC Report

Counting Bead Strings That are Less Thanhttps://learnzillion.com/lesson_plans/3966

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Snap Cube Counting II[Available as PDF](#)

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