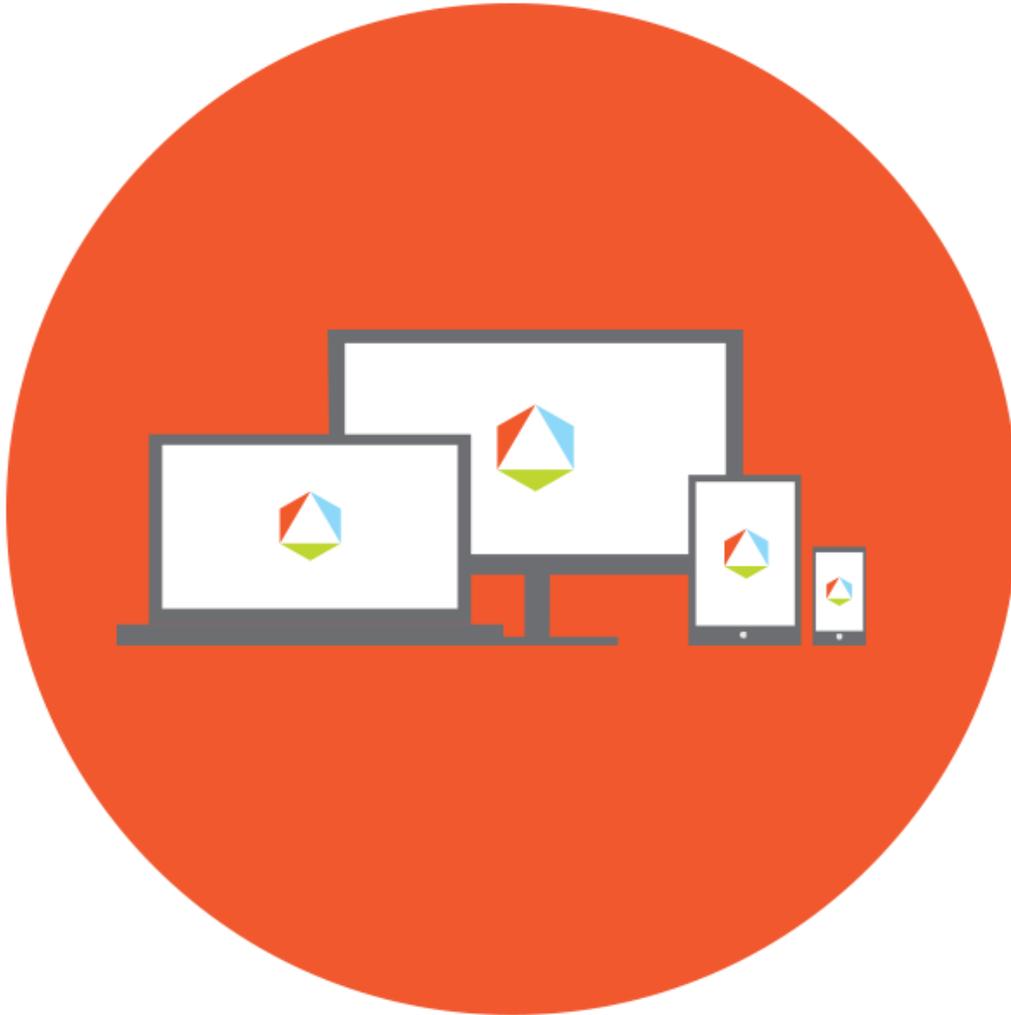




FIRSTPATH
AUTISM



Lesson Guide

41. Pre-Math Skills / Number Sequencing



Overview

Teaches:	This lesson teaches the sequential order of numerals. NOTE: Targets of first, second, third, last, middle, etc. should also be taught using objects/people/lines of items, generally after the sequencing of numbers has been mastered.
Before beginning:	Before beginning, the child should be at a mastery level in the Number ID lesson.
Why it's important:	This lesson is important because it teaches the child the order of numbers and some of the functional meaning behind numbers and counting. Understanding of number sequencing is an important foundation for many other activities and concepts, such as taking a number to wait in line, telling time, being able to locate a specific page in a book, school assignments, etc.
Materials needed:	Some materials that can be used to teach this lesson include (but are not limited to) small flashcards/materials with numerals written on them, as well as something to help order/organize the numbers (i.e. a large chart/poster board with Velcro spaces to attach/detach, or clear pockets).
Generalization activities:	Generalization activities may include, but are not limited to, playing school, sidewalk chalk, art projects, computer games, number trains, etc.



Steps

Prepare

1. The teacher should sit next to the child in an environment free from noise and distractions.
2. The teacher should conduct a reinforcer assessment and also have various highly preferred items/activities available for the child to earn.
3. The teacher should have all materials, data sheets and pen/pencil ready.
4. The child should be ready to attend to the teacher, using appropriate eye contact, and not engaging in any other activities.
5. Have data collection ready.

Teach:

1. The very first step should consist of visually showing the child the correct and complete placement of 1-10 on the board (using correct left to right, top to bottom positioning as in reading). The teacher may even count and point to the numbers with the child so he has the opportunity to process both visual and auditory instruction.
2. After the child views the complete and correct "end result" of numbers 1-10 in order, the teacher should remove the numbers and tell the child that they are going to work on "putting the numbers in order". After this point, there are several options for how to proceed, and the teacher should use the option best suited to each child and his/her learning style.

OPTION 1: The teacher can use a "backward chain" approach, where she removes only number 10 from the completed sequence, and tells the child to "Put this in order". Correct response is the child placing the number 10 immediately after the 9. Once the child can correctly complete that step, this process would continue with the teacher removing the 9 and the 10 and saying, "Put these in order". Correct response would be the child adding the 9 and then the 10 to the completed 1-8 sequence. This process would continue until the child was independently placing all numbers 1-10 on the chart. This teaching approach allows the child to slowly increase the number of responses he has to do at a time.



OPTION 2: The teacher can remove numbers 2-10 off of the board (leaving number 1 in place) and ask the child to "Put these in order". Correct response actually has 9 "trials" in this situation, since each number placement is considered a separate response that is either correct or incorrect. A variation of this option is targeting smaller groups at a time: for example, only removing numbers 6-10 initially, so the child can master 5 successive responses before working on 10 successive responses.

3. The teacher should wait 3-5 seconds for each response. This gives the child time to process the request and retrieve the information.

4. Provide feedback on the child's responses:

Correct response: Enthusiastic praise and delivery of additional reinforcers are very important during this lesson and initially should be provided every time the child correctly puts a number in order. The schedule of reinforcement should be faded after the child becomes familiar with the lesson.

Incorrect or No response: The teacher should provide corrective feedback and/or demonstrate or prompt the correct answer for the child, and then check for understanding before continuing.

****In addition,** because this lesson utilizes chained responses, it may be necessary to take a step or two back when correcting an error, to ensure that the correct response is accurately chained into the child's repertoire. For example, if the child had correctly placed numbers 1-5 and then put an 8 following the 5, the teacher may need to remove not only the incorrect number 8 but also the 4 and 5, so that the child can chain the response of "4, 5, 6" instead of simply replacing the 8 with a 6. (This is especially true when teaching using OPTION 2 above.)

5. Record down data.

EXAMPLES: "Put these in order."

Correct response	Incorrect response	No response
(Numbers 1-5 are on the board; numbers 6-10 are in front of the child.) Teacher: "Put these in order." Child: (Picks up and places card 6, then 7, then 8, then 9, then 10 on the board in correct order.)	(Numbers 1-5 are on the board; numbers 6-10 are in front of the child.) Teacher: "Put these in order." Child: (Picks up and places card 6, then 7, then 9, on the board.) Teacher: (Stops the child immediately	(Numbers 1-5 are on the board; numbers 6-10 are in front of the child.) Teacher: "Put these in order." Child: (No response.) Teacher: "Uh oh. I asked you to put the numbers in order. Like this." (begins to



Teacher: (gives small social praise at each number: i.e., "Good..."), then at the end of the sequence (after 10), delivers chosen reinforcer and effusive praise: "Excellent job!!!"	after the 9 is incorrectly placed.) "Oops!! Do the numbers go 6, 7...9? Let's try again." (Removes the 6, 7, and 9 and models putting on 6, 7, <u>8</u> while counting them aloud. Then, removes the 6, 7, and 8 again and begins a new trial.)	model correct response, then removes numbers to prepare for restarting) "Remember when you finish, you get_____." (start new trial)
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TYPICAL ORDER OF LEARNING TARGETS:

1. Number Sequencing 1-10
2. Number Sequencing 11-20
3. Number Sequencing 21-30
4. Continue in increments of 10 until child can correctly sequence numbers up to 100, or whatever level is age and grade-level appropriate. Once child can correctly sequence up to highest target in groups of 10, combine sections so that the child is sequencing 20+ numbers at a time, an increased challenge over groups of 10. Progression beyond these initial targets should be made based on the child's ability; however, a good ultimate goal for children 4-5 years and older is to be able to eventually organize and sequence numbers 1-100 independently.
5. Generalization into the child's natural environment.