

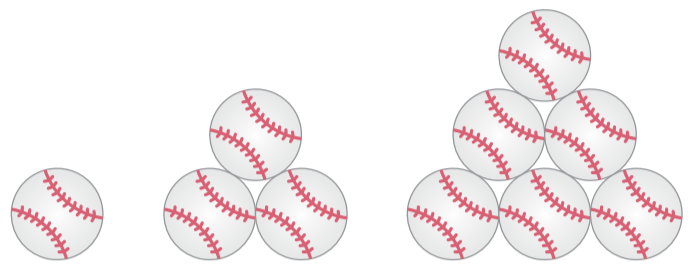
USING TABLES, CHARTS, OR LISTS TO FIND A PATTERN

to Assist Elementary and Middle School Students Struggling with Math

Learning skills beyond number and operations creates a foundation for future math instruction, and children with strong backgrounds in these areas are more likely to succeed in later grades. For example, early instruction in pattern recognition provides a foundation for more advanced concepts such as algebra and geometry. The problem below illustrates one way in which you can introduce young students to identifying patterns. Learn more in the IES Practice Guide, [Teaching Math to Young Children](#).

The baseball triangle

You arrange baseballs in triangular shapes as shown. How many baseballs will there be in a triangle that has eight rows?



Strategy

One good strategy is to create a table and list how many baseballs are in triangles of different rows.

Triangle with one row =

It is easy to see that a triangle with one row has one baseball.

Triangle with two rows = = +

To find the total number of baseballs in a triangle with two rows, we add the baseball from the top row to the baseballs in the bottom row.

Triangle with three rows = = +

To find the total number of baseballs in a triangle with three rows, we add the top baseball triangle to the baseballs in the bottom row. Now we can fill in the first three rows of a table.

Charting the data

We can now complete a table using the pattern we discovered.

Number of Rows	Number of Baseballs
1	1
2	3
3	6

We can now see a pattern emerge.

Number of baseballs = number of balls in the previous triangle + number of rows in the new triangle

We can now complete the table using this pattern.

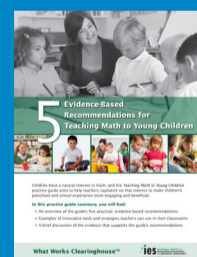
Number of Rows	Number of Baseballs
1	1
2	3
3	6
4	10
5	15
6	21
7	28
8	36

Additional Resources



Teaching Math to Young Children

<https://ies.ed.gov/ncee/wwc/PracticeGuide/18>



By the Numbers: Five Evidence-Based Recommendations for Teaching Math to Young Children

https://ies.ed.gov/ncee/wwc/Docs/practicguide/wwc_empg_numbers_020714.pdf



Information and materials for this presentation are supported by IES/NCEE's Regional Educational Laboratory Southeast at Florida State University (Contract ED-IES-17-C-0011) as resources and examples for the viewer's convenience. Their inclusion is not intended as an endorsement by the Regional Educational Laboratory Southeast or its funding source, the Institute of Education Sciences.

In addition, the instructional practices and assessments discussed or shown in this presentation are not intended to mandate, direct, or control a State's, local educational agency's, or school's specific instructional content, academic achievement system and assessments, curriculum, or program of instruction. State and local programs may use any instructional content, achievement system and assessments, curriculum, or program of instruction they wish.