

MULTIPLICATION VERSUS ADDITION

Episode 201: Math is everywhere, Part One

2nd Grade

Georgia Performance Standards

- M2N3a Understand multiplication as repeated addition
- M2N3b Use repeated addition, arrays, and counting by multiples to correctly multiply 1-digit numbers and construct the multiplication table
- M2N3c Use the multiplication table to determine a product of two numbers
- M2P3 Students will be able to use the language of mathematics to express ideas precisely

Objectives

- The students will create arrays to represent multiplication.
- The students will use a multiplication table to determine a product of two numbers.
- The students will create a multiplication table.

Materials

- TV/VCR or Computer/LCD Projector
- Video *Count On It!* 201
- A completed multiplication table
- Dry erase board/markers or chalk board and chalk
- Grid paper
- Crayons, pencils, scissors

Procedure

Opening

- Tell students they are going to have a math competition and split the class into two equal teams.
- Give directions on how to use a multiplication table (understanding does not need to take place yet, only how to find answers on the table needs to be known).
- Only one group will use the multiplication table, the other will be responsible for adding to find the answer (after half the time is up, give the other team the multiplication table).
- Orally and in written form on the white/chalk board, give students multiplication problems one at a time to answer. Each student gets a turn to go once.

Work time

- Once each student has had an opportunity to answer with and without the multiplication table, talk about how much easier multiplication makes adding.
- Show the class *Count On It!* 201 clip “Ice Cream” (VHS 4:10 – 5:32).

- Pass out grid paper to students and let them explore coloring, and cutting out arrays, labeling them on the back (ex. $2 \times 4 = 8$).
- Using grid paper the same size as that of the arrays being made, have students number the paper 1-10 vertically and horizontally.
- Locate the top left corner where all multiplying begins on a multiplication chart.
- Have students take one of the arrays they made and line it up to the empty chart. Show them how to put the answer in the bottom right hand corner of where the array landed/ended.
- As they continue making arrays of different sizes, they should label the answers on the multiplication chart (this may be something they continue for morning work the next day, or during center time, etc. as it is time-consuming).
- Finished arrays should include students' names and be put into baggies for future use. Both the baggy and the multiplication chart can be put in a folder with the student's name and kept somewhere safe. Note: Using card stock if it is available to you would be wise so that the homemade arrays and multiplication chart can withstand the test of time as you use them throughout the year for different activities.

Closing

- Have select students share their findings (you choose a few students who discovered things as they were making their arrays and charts, such as:
 - $4 \times 5 = 20$ can be rotated to also give the answer of $5 \times 4 = 20$ so that you have to write 20 in two different places
 - Lots of numbers are on the chart more than once, but the ones that make a diagonal line down the center never repeat themselves
 - Patterns that pop up (10, 20, 30, etc or 11, 22, 33, etc)

Assessment

- Finished and labeled arrays
- Completed multiplication chart
- Teacher observation/documentation on student rubric used by your school/county during work time and closing (sample rubric can be found on our website) of participation of using the multiplication chart during game