

Quick Multiplication WITH.....OUT Time Tables

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Topic: Numbers and Operations

Content Objective:

- Understanding concepts of multiplication
- Provide opportunities for concrete and pictorial representations of multiplication.

Curriculum Competences:

Understanding and solving

- Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving
- Visualize to explore mathematical concepts

Reasoning and analyzing

- Develop and use multiple strategies to engage in problem solving
- Explain and justify mathematical ideas and decisions

Communicating and representing

- Use mathematical vocabulary and language to contribute to mathematical discussions

Grade Levels: Grade 3 to 10 (or any grade with small adjustments)

Resource:

<https://www.youtube.com/watch?v=bbKjXKV9QNA>

http://www.archimedes-lab.org/Maths2_Multiplication.html

Descriptions: This activity is a fun based activity that encourages the students to learn the concept of multiplication without using any time tables. This needs only the knowledge of adding the numbers and understanding of place values. This activity is the Japanese method of multiplication by using sticks. We can draw lines instead of using sticks.

For students of higher grade, this activity can be used to multiply polynomials by associating lines of different colors to different variables.

After exposing students to this method of multiplication, students can be asked to explore why this method works and how different colours used for each place value helps calculation.

Materials:

- White board with markers and eraser
- Blank papers and colour markers
- Calculators

Activity Sheet

Draw sets of parallel lines representing each digit of the first number to be multiplied. Draw sets of parallels, perpendicular to the first sets of parallels, corresponding to each digit of the second number. Put dots where each line crosses another line. On the left corner, put a curved line through the wide spot with no points. Do the same with the right. Count the points in the right corner. Count the points in the middle. Count the ones in the left corner. If the number on the right is greater than 9, carry and add the number in the tens place to the number in the middle (fig. 2). If the number in the middle is greater than 9, do the same thing except add it to the number from the left corner. Write all those numbers down in that order and you will have your answer.

Japanese Visual Multiplication

Fig. 1

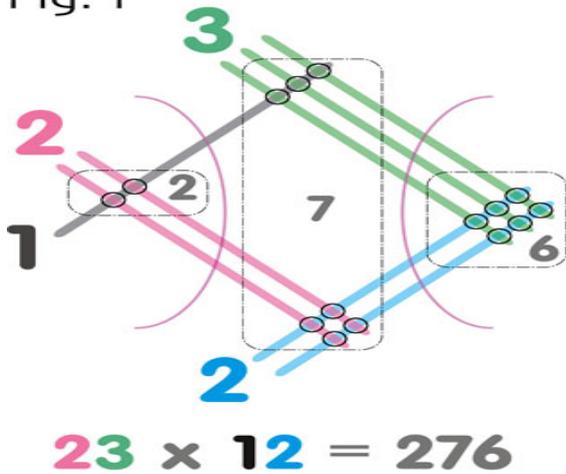
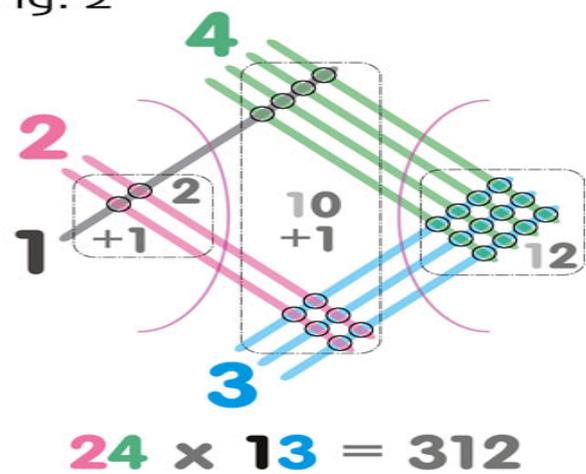
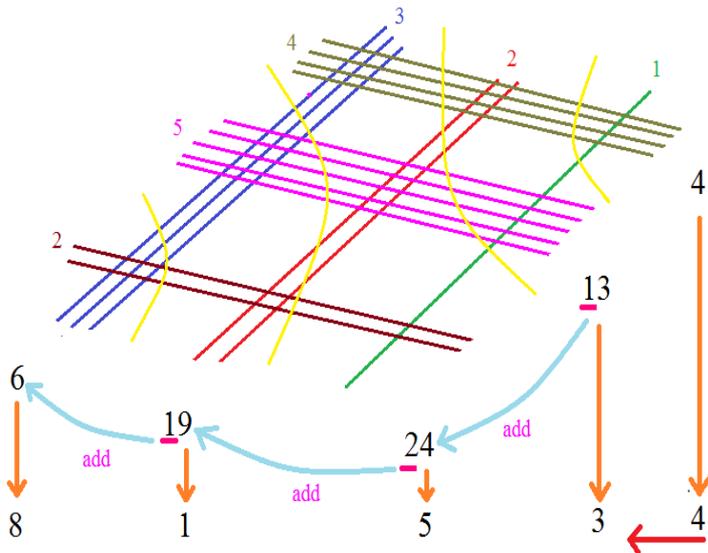


Fig. 2



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321x254



IF THERE IS ZERO IN ANY NUMBER, THEN DRAW THE LINE CORRESPONDING TO IT IN DIFFERENT COLOR OR IT CAN BE DRAWN DOTTED OR WAVERY. DO NOT COUNT THE POINTS LYING ON THE INTERSECTION OF THIS LINE WITH ANY OTHER LINE.