Dr Fog Presents

Developing your preferred ways of doing multiplication.

Year 5 (National Numeracy Strategy)
(Based on DFEE Sample Lessons)

Resources

- None needed!

Mental Learning Objective

- I can instantly recall my multiplication facts.

Mental Learning Task

- Over the next few lessons are going to explore 'paper and pencil' methods of multiplying.

Mental Learning Task

3 x 4

- Draw a picture, showing how you visualise this or how you see it in your head.

Mental Learning Task

- Can you describe in words what you have written or drawn?

- Did you think of it as four 'lots' of three, or three 'lots' of four?

Mental Learning Task

- What do you say when you see 3 x 4?

- Do you say
  - Three times four
  - Three fours
  - Four threes
  - Three multiplied by 4

Mental Learning Objective

- I can instantly recall my multiplication facts.

Main Learning Objective

- I can develop my pencil and paper methods to record, explain and support the multiplication of one- and two-digit numbers.

Key idea

It can be helpful to see multiplcation as repeated addition.

Main Learning Task

- Today you are going to solve these multiplication sums.
- You can use any method you want.
- You must write down your working, or write you did it in your head.
- Any method you use is fine.

Main Learning Task

2 x 5 3 x 7 7 x 9

23 x 5 37 x 6 4 x 56

36 x 73 53 x 48

Main Learning Task

- What calculations did you write down without thinking.
- Which did you just know?
- Write them in the number box below?

Number box

Main Learning Task

- Are they the same for everyone?
- You probably knew 2 x 5 is 10.
- Did you know 7 x 9 instantly?
- Did you use 7 x 10 and subtract 7?

Number box

Main Learning Task

- Did you do any of the others in your head?
- What about 37 x 6?
- Did you use repeated addition?

37 + 37 + 37 + 37 + 37 + 37

Main Learning Task

- Repeated addition will always give the correct answer, but it is not very efficient.

- How did you do 36 x 73?

Main Learning Task

- Simplification:-
- Discuss strategies for remembering single-digit multiplications (the ones in the 'times table')

- Investigate products where the numbers in the pair differ by two such as 4 x 6 or 7 x 9.
- Is it true the answer is one less than the square of the number in between?

Main Learning Task

- Challenges:-

- Work out how many single-digit multiplications there are to learn.

- Learn the 12 or 15 times tables.

- Extend to simple fractions and decimals, such as $\frac{1}{2}$ x 8 or 0.5 x 6.

Main Learning Objective

- I can develop my pencil and paper methods to record, explain and support the multiplication of one- and two-digit numbers.

Plenary

- Can you solve these problems?

7 x 8 24 x 7 31 x 4 25 x 22

$\frac{1}{2}$ x 36 0.5 x 10

- Get into twos or threes
- Which are easy or hard?
- Why are the easy ones easy?
- Why are the hard ones hard?

Plenary

- Emphasise that multiplication seems simple if you look at it as one number added repeated a certain number of times.

- It is always possible to turn a multiplication into an addition.

- This can take a long time to do.

Plenary

- You should aim to have instant recall of all the single-digit multiplication.

- The next few lessons are about developing efficient ways of doing multiplications with larger number.

Review of Key Idea

- It can be helpful to see multiplication as repeated addition.

- Did you learn this in this lesson?

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