

*Dr Fog Presents*

# The area method of doing multiplication

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



# Resources

- None needed!



# Mental Learning Objective

- I can practice my multiplication facts.



# Mental Learning Task

- Today you will be introduced to the 'area' method of multiplication.
- First we are going to look at multiplying one-digit by two-digit numbers.
- I don't want the answers.
- I want you explain how the problem could be tackled.



# Mental Learning Task

- Here are the sums...

$$17 \times 5$$

$$62 \times 3$$

$$34 \times 7$$



# Mental Learning Task

- Make sure you tackle the tens and ones separately.
- With  $34 \times 7$  you could....
- $30 \times 7$
- $4 \times 7$



# Mental Learning Task

- Today we are going to learn the area method.
- How could we solve  $37 \times 6$ ?



# Mental Learning Task

- If we want to multiply  $37 \times 6$
- We could get some squared paper and cut out a piece that was 37 squares long and 6 wide.
- Count the squares.





# Mental Learning Task

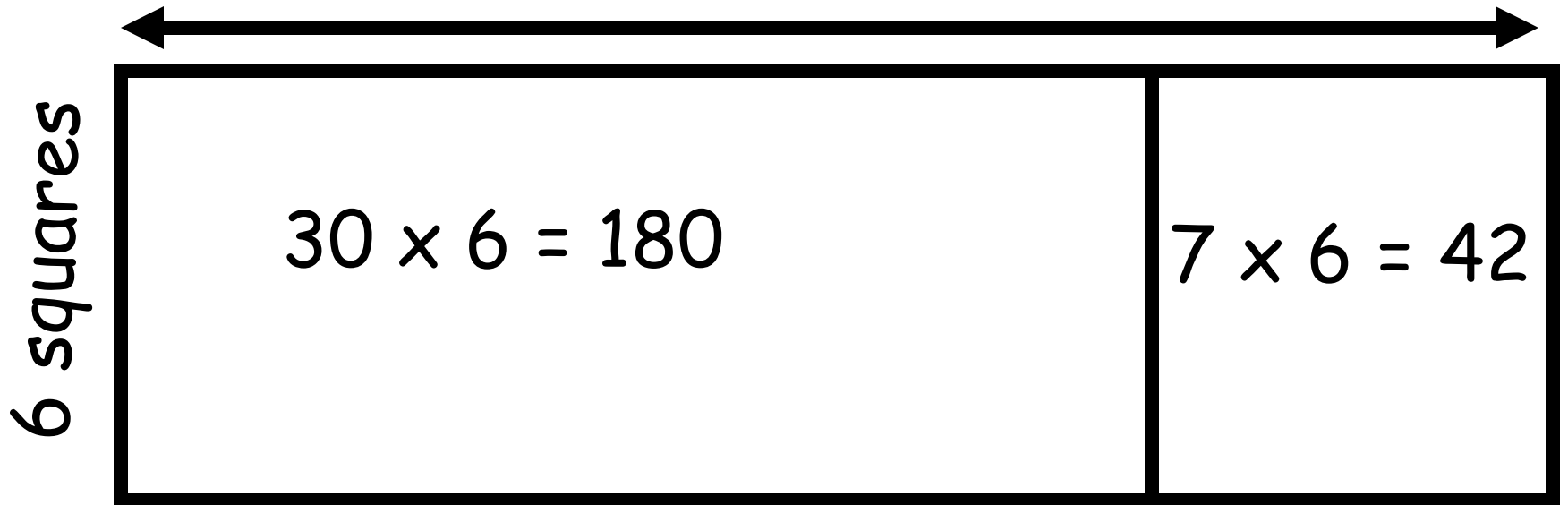
37 squares



- We could divide the who area into two.

# Mental Learning Task

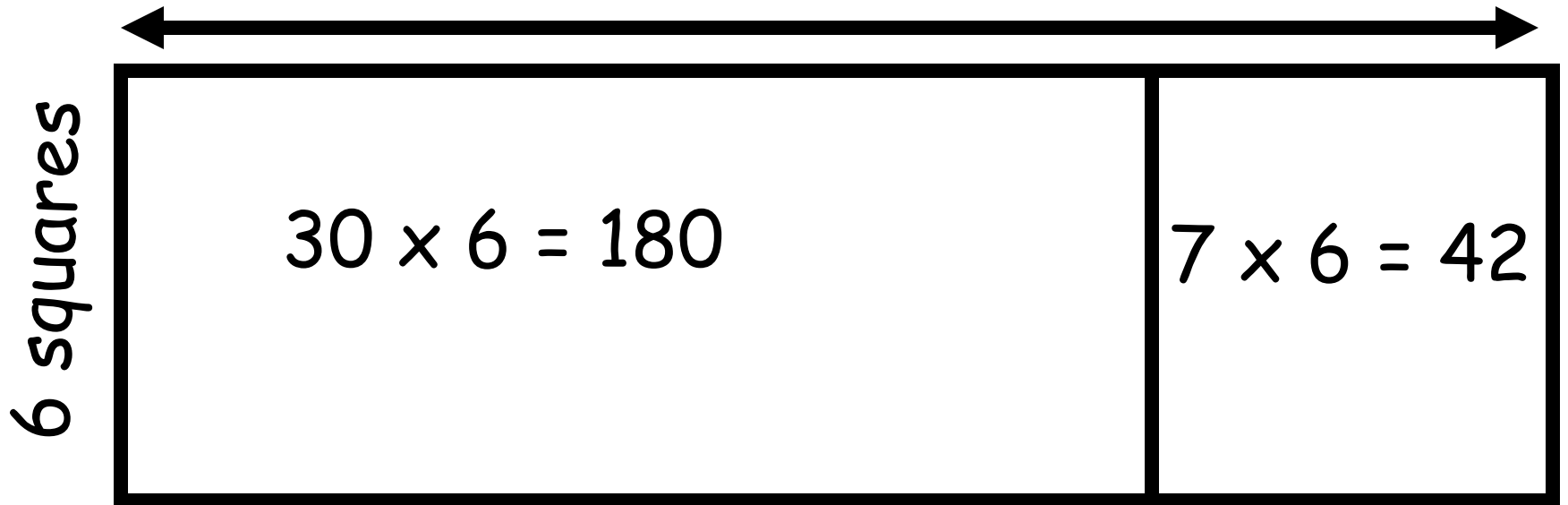
37 squares



- One piece is 6 rows of 30 squares.
- Another that is 6 rows of 7 squares.

# Mental Learning Task

37 squares



- Now we've done that, the sum is easier.

# Mental Learning Task

- Now we can solve the problems

$$37 \times 6$$

$$30 \times 6$$

$$7 \times 6$$

Get the class to work this out.



# Mental Learning Task

- Six 30s are...
- And six 7s are...
- So altogether is...?



# Mental Learning Task

- Can you write out the sum on the board?
- Can you do the working on the board?



# Mental Learning Objective

- I can practice my multiplication facts.



# Main Learning Objective

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





# Key idea

**You can solve multiplication problems by seeing them as area problems.**



# Main Learning Task

- Now you know what you are doing, can you solve these problems?
- Use the area multiplication method.



# Main Learning Task

## Simplification

$12 \times 3$

$15 \times 5$

$22 \times 3$

It may help to use real squared paper and cut out the area.

## Main

$34 \times 7$

$45 \times 9$

$23 \times 8$

$44 \times 7$

$57 \times 3$

$23 \times 8$

## Challenge

$234 \times 7$

$545 \times 9$

$623 \times 8$

$844 \times 7$

$357 \times 3$

$123 \times 8$

# Main Learning Objective

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



# Plenary

- Get into pairs
- Compare your answers
- Does your answer look the right size?
- Show your working on the board.



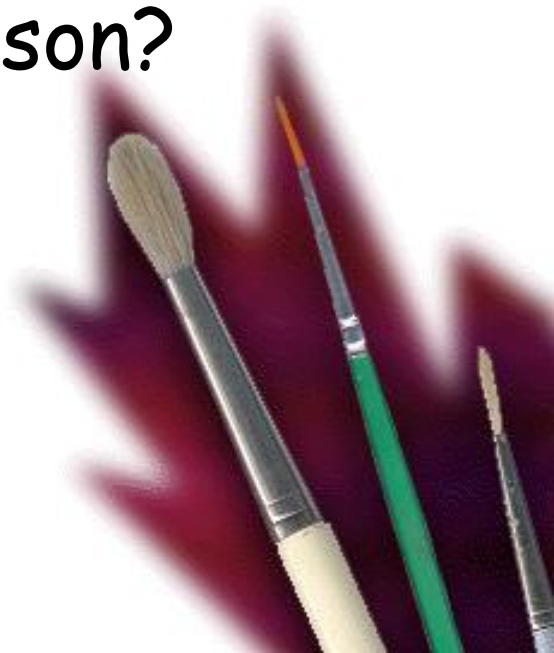
# Plenary

- Choose any three digits - for example 3, 7 and 9.
- Combine these digits in any way you like to make two numbers.
- Example:-37 and 9 or 93 and 7
- Multiply the two numbers together.
- What is the biggest product you can make?



# Review of Key Idea

- You can solve multiplication problems by seeing them as area problems.
- Did you learn that in this lesson?



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