



MATH WITH MR DJ

GRADE 6 · THE NUMBER SYSTEM

FACTORING WITH THE DISTRIBUTIVE PROPERTY

Today's goal: I can use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor.



Tan



Digit



Blaze



Pi



WARM-UP

Turn & talk · 1 min

$$36 + 8$$

- 1 Both numbers share something. What?

TURN & TALK

can you rewrite this as a multiplication?



Pull out the GCF – from BOTH

- 1 Find the GCF of the two numbers.
- 2 Divide **each** number by it. Write GCF(+).



BIG IDEA 2

$$36 + 8 = 4(9 + 2)$$

1 $\text{GCF}(36, 8) = 4$

2 $36 \div 4 = 9 \cdot 8 \div 4 = 2$

3 Check: $4 \times 11 = 44 = 36 + 8$

REMEMBER

Divide BOTH – not just the first one.



WATCH OUT!

Not finished until nothing is shared

1 $24 + 36 = 2(12 + 18) \rightarrow$ true, but 12 and 18 still share 6

2 $24 + 36 = 12(2 + 3) \rightarrow$ 2 and 3 share nothing ✓

DON'T FALL FOR IT

True and fully factored are different things.



BIG IDEA 4

Two checks before you stop

- 1 Multiply back: does it equal the original sum?
- 2 Do the two numbers inside share any factor? If yes, keep going.



SPOT THE SLIP!

Turn & talk

Something went wrong here...

THE PROBLEM

Rewrite $42 + 14$ using the GCF.

WHAT A STUDENT DID

Forgot that $14 \div 14 = 1$ and wrote $14(3 + 14)$ or $14(3)$.

YOUR MISSION

What went wrong? What's the right answer?



Rewrite $42 + 14$ using the GCF.

1 $\text{GCF} = 14$

2 $42 \div 14 = 3, 14 \div 14 = 1.$

3 Check: $14 \times 4 = 56.$

Answer:

$14(3 + 1)$



Pick your pepper!



MILD

Rewrite **15 + 25** using the GCF.

#1 on your practice sheet



MEDIUM

Rewrite **18 + 27** using the GCF.

#3 on your practice sheet



SPICY

Rewrite **60 + 48** using the GCF, then check your answer by multiplying back.

#6 on your practice sheet

How's it going?



3 • Got it!

I could teach it



2 • Almost

One more example, please



1 • Not yet

I need some help

NOW YOU!

Practice sheet: everyone does Mild & Medium, then climb the peppers.

Stuck? Look back at Mr DJ's example at the top of the sheet.

Need it again? Step-by-step videos on YouTube @MathWithMrDJ

Brain break: 3 new daily puzzles at puzzles.mathwithmrdj.com

