



MATH WITH MR DJ

GRADE 6 · GEOMETRY

AREA BY COMPOSING & DECOMPOSING

Today's goal: I can find area of triangles by composing into rectangles or decomposing into triangles and other shapes and use to solve mathematical problems, find area of triangles by composing into rectangles or decomposing into triangles and other shapes and use to solve real-world problems, find area of quadrilaterals by composing into rectangles or decomposing into triangles and other shapes and use to solve mathematical problems, find area of quadrilaterals by composing into rectangles or decomposing into triangles and other shapes and use to solve real-world problems, find area of polygons by

composing into rectangles or decomposing into triangles and other shapes and use to solve mathematical problems and find area of polygons by composing into rectangles or decomposing into triangles and other shapes and use to solve real-world problems.



Tan



Digit



Blaze



Pi



WARM-UP

Turn & talk · 1 min

Triangle: base 8, height 5

1 Work it out silently.

TURN & TALK

is it 40 or 20?



A triangle is HALF a rectangle

- 1 Draw the rectangle around it: same base, same height.
- 2 The triangle fills exactly half $\rightarrow A = (b \times h) \div 2$



BIG IDEA 2

$$(8 \times 5) \div 2 = 20$$

- 1 Rectangle would be 40. The triangle is half of that.

REMEMBER

Forgetting the $\div 2$ doubles your answer.



BIG IDEA 3

Height must be PERPENDICULAR

- 1 The height is the straight-up distance from the base.
- 2 A slanted side is longer — it is a side, not a height.

REMEMBER

Slant 5 vs height 4 changes the answer from 25 to 20.



BIG IDEA 4

Odd shapes: two strategies

- 1 **Decompose** — cut into simple shapes and ADD.
- 2 **Compose** — draw the whole rectangle and SUBTRACT the missing part.

REMEMBER

If a piece is missing, your answer must be SMALLER than the whole.



SPOT THE SLIP!

Turn & talk

Something went wrong here...

THE PROBLEM

Find the area of a rectangle 9 by 5.

WHAT A STUDENT DID

Halved it to 22.5.

YOUR MISSION

What went wrong? What's the right answer?



Find the area of a rectangle 9 by 5.

1 $9 \times 5 = 45.$

Answer: 45 sq units



Pick your pepper!



MILD

Find the area of a triangle with base 10 and height 6.

#1 on your practice sheet



MEDIUM

Find the area of a parallelogram with base 15 and height 8.

#3 on your practice sheet



SPICY

An L-shaped garden is a 12×9 rectangle with a 5×4 rectangle cut out. Find its area and say whether you added or subtracted.

#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



MATH WITH MR DJ

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? Watch "Perimeter and Area of Rectangles Explained" on YouTube @MathWithMrDJ

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

