



MATH WITH MR DJ

GRADE 7 · GEOMETRY

CIRCUMFERENCE OF A CIRCLE

Today's goal: I can find the circumference of a circle to solve problems, including by using the formula for circumference.



Tan



Digit



Blaze



Pi



WARM-UP

Turn & talk · 1 min

A circle with diameter 10 cm

1 Find its circumference.

TURN & TALK

10π or 20π ?



Two formulas, one idea

- 1 $C = 2\pi r$ — when you have the RADIUS
- 2 $C = \pi d$ — when you have the DIAMETER
- 3 They are the same, because $d = 2r$.



BIG IDEA 2

Diameter 10 $\rightarrow C = 10\pi$

- 1 Putting 10 into $2\pi r$ gives 20π — doubling a number already doubled.

REMEMBER

Name radius or diameter BEFORE you pick a formula.



Backwards

1 $C = 12\pi \rightarrow$ the coefficient IS the diameter, so $d = 12$.

2 Radius is half: $r = 6$.



BIG IDEA 4

Semicircles have a straight edge

- 1 Arc of a semicircle, radius 6: half of $12\pi = 6\pi$.
- 2 Perimeter = $6\pi + 12$, because cutting made a new edge.

REMEMBER

Halving the circle created a boundary that wasn't there.



SPOT THE SLIP!

Turn & talk

Something went wrong here...

THE PROBLEM

Find its diameter.

WHAT A STUDENT DID

Answered 40.

YOUR MISSION

What went wrong? What's the right answer?



Find its diameter.

1 $d = 2r = 20 \text{ cm}$, which is the coefficient of π .

Answer: **20 cm**



Pick your pepper!

**MILD**

Find the circumference of a circle with radius 7 cm.

#1 on your practice sheet

**MEDIUM**

Find the circumference of a circle with radius 2.5 m.

#4 on your practice sheet

**SPICY**

Your answers to 1 and 2 differ. Explain why, given that both mention 7.

#7 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

