Pi In Everyday Objects

Measure and calculate pi using nonstandard units of measurement



Pi Prep Work

Look inside or outside to find 3 circular objects of different sizes.

Identify nonstandard units of measurement that can be laid out end to end (e.g., footsteps for manhole covers, handspan for circular playground equipment, paper clips or erasers for smaller indoor items).

Measuring Pi

Using the nonstandard unit of measurement, measure the circumference (distance around) and diameter (straight line from side to side through the center) of each circular object.

	Circumference	Diameter	Ratio
Object #1			
Object #2			
Object #3			

Calculate the ratio of circumference to diameter by dividing the number of objects that you laid end to end along the circumference by the number laid end to end along the diameter.

How close did the ratios come to approximating the value of pi (3.14)?

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1 Gather materials and assign groups

Gather toilet paper or paper towel rolls and paper cups. Have one group assigned to use toilet paper or paper towel rolls and a second group to paper cups.



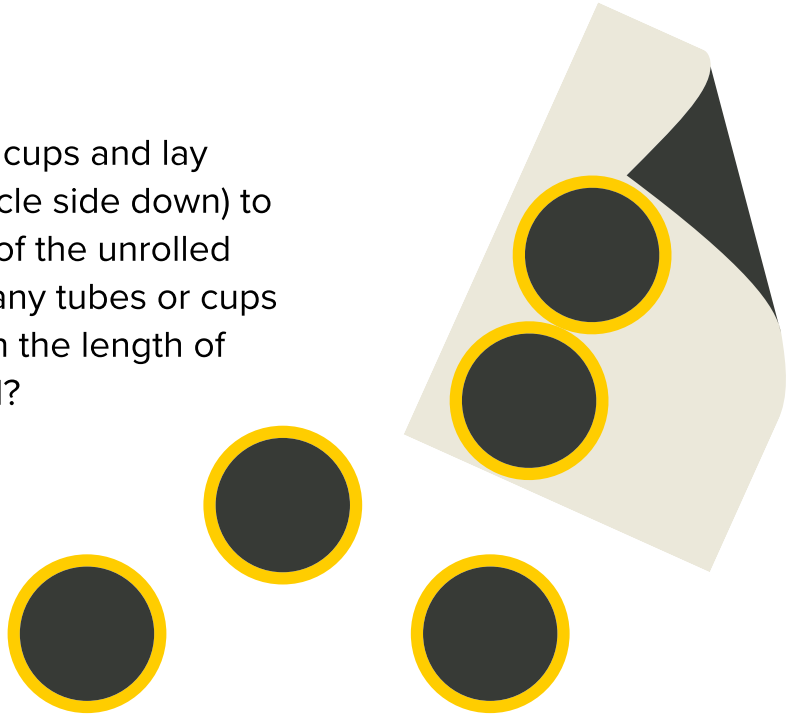


2 Break down material

Have each team take one tube or cup and cut it so that it can be unrolled and laid flat.

3 Measure!

Take uncut tubes or cups and lay them end to end (circle side down) to measure the length of the unrolled tube or cup. How many tubes or cups does it take to match the length of the unrolled material?



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Answer Key

Measure!

Question

Take uncut tubes or cups and lay them end to end (circle side down) to measure the length of the unrolled tube or cup. How many tubes or cups does it take to match the length of the unrolled material?

Answer

The answer for both teams should be about 3 tubes or cups fit end to end along this length, which is the distance around the edge of each circle, also called the circumference.

