

# THE NUMBERS SHOW

*starring*

## ZERO and The Digits

### Episode 7 Learning Guide

Special Guest:  $\pi$

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1. Pi is another symbol, like phi, that represents an important number between two of the digits. What language do Pi and Phi come from?
2. What two digits does Pi come between?
3. Why do you think Pi is called the King of Circles?
4. Why do you think the digits 3, 1, 4, and 0 went to get pie with Pi?
5. CHALLENGE: Can you spot the connections between each digit and their pie dessert?
6. Why is Pi wearing a baker's hat?
7. What are the numbers you can see on Pi? Are they in a special order?
8. CHALLENGE: How many digits of Pi can you memorize?
9. Pi is most often seen as a decimal, but it can also be shown as a fraction. Do you know the fraction that equals Pi? See if you can solve it, or research the answer!
10. Why should Pi Day be celebrated on March 14<sup>th</sup> (in the US)? Why should Pi Day be celebrated on January 3<sup>rd</sup> (outside the US)?
11. What is perimeter?
12. CHALLENGE: What's the connection between the way the mints are stacked in the commercial, and special guest Pi?
13. Pi is an important number in mathematics and in history! If Pi was used to build the Great Pyramids in Egypt, what other landmarks could he have helped with around the world?
14. Name one thing Albert Einstein contributed to the world, or do some research to find out!
15. Pi has a special relationship with circles. What round foods other than pies could he sell from his food truck?
16. How many years ago was 1882? An important part of Pi's identity was decided then!
17. Using the context, make a guess: what does transcendental mean?

18. What is circumference?
19. CHALLENGE: Can you calculate the circumference of the pizza before the audience does?
20. What is the equation that tells you how to find the circumference of a circle using special guest Pi?
21. If 16 inches is the diameter of the pizza, what is 8 inches equal to?
22. If the winning guest brings 5 friends to the stage, and each person gets two pieces of pizza, how many slices of pizza will be served?
23. What shape should the pizza slices be so that each person gets the same amount?
24. How many connections to Pi can you find in the pizzeria commercial? Look carefully!
25. Hula hoops are a fun way to exercise! What other fun circles can you find on your playground or at the park?
26. Create your own workout using only circular equipment and exercises! Can you keep going for 31 minutes?
27. Your turn! Can you figure out how 3, 1, and 4 turned their circles into a "selfie frame"? Give it a try at home! When you figure it out, use your selfie frame for a fun photo opportunity!
28. If all 100 audience members named their top 4 pie choices, how many votes were cast?
29. How many more people voted for the pies that Pi listed than the pies that 0 listed?
30. Are there any pies with equal amounts of votes? Which ones?
31. Organize the pie choices Pi and 0 listed by number of votes, starting with the greatest number of votes and ending with the least. What is the difference, or range, between the pie flavor with the greatest amount of votes and the pie flavor with the least votes?
32. CHALLENGE: List the mean (average), median (middle), and mode (most often) flavors from the 8 choices shown.
33. 31 weeks is the same as how many months?
34. How many number links to Pi can you find in the pie-eating contest ad?
35. How many circles can you find in your home?

