ACTIVITY SHEET

Here is a list of terrific group activities that encourage kids ages 10 and older to use their brains—and fill their stomachs—while having fun with the infinite digits of Pi.

FIRST visit a website such as PiDay.org or refer to the Wikipedia entry for “pi” for help in generating some of pi’s infinite digits.

SECOND encourage invitees to bring along pie to eat, sweet kinds as well as savory (pizza!).

LAST have a ton of fun: 3.14 tons!

ACTIVITIES

- Using the first 25 or so digits in pi, have the group create a short story using words with the same number of letters as each digit of pi: A three-letter word, followed by a one-letter word, then a four-letter word, a one-letter word, and so on.
- Assign each digit between one and nine an individual color of construction paper, and create a paper chain link for each digit of pi. According to the digits in pi, piece all the links together to form as long a chain as you can.
- Ask children to bring in circular objects from home and have them measure the circumference, the diameter, and the radius of each.
- Have circle-drawing contests, blindfolding the children or asking them to draw a circle with their non-writing hand.
- Hold a competition to see which child can memorize the most digits of pi.
- Ask children (or their parents) to prepare pies, cookies, or other circle-shaped food items and have them spend time determining the diameter and circumference of each before eating.
- Using a pie recipe—like The Best Streusel Apple Pie Ever from this kit—have the children calculate the area of the pie (area = \( \pi r^2 \)) before eating it.
- Take a break from pi and have the children tackle Pizza Peril or another fraction or geometry-related word problem from The Book of Perfectly Perilous Math, as a group, by teams, or individually. Consider pizza as a prize!

RECOMMENDED MATERIALS

- GREAT IMAGINATION!
- CONSTRUCTION PAPER
- GLUE STICKS OR SCOTCH TAPE
- A LARGE DRY-ERASE BOARD OR EASEL PAD
- MARKERS AND CRAYONS
- PLENTY OF PIE! (THE EDIBLE KIND)

CHEAT SHEET

- The distance all around a circle is called the circumference and is referred to in formulas as \( c \).
- The distance from one side of the circle to the other is referred to as the diameter of a circle and is identified as \( d \) in formulas.
- The radius of a circle is the distance from the center of the circle to the outside edge (\( r \) in formulas).
- Thus the diameter of the circle is twice the size of the radius of a circle.
- The area of a circle (\( a \)) refers to the number of square units within the circle.
You never believed in vampires—until you saw one for yourself. He’s new in town, a strange-looking dude, who up until now seems to have been living off of the stray cats in the neighborhood. Problem is, no one else has ever seen him but you. And no one believes you—no one except your best friend, Jamie, who happens to be an expert on vampires. According to Jamie, vampires only come out at night, and they only feed two times a month. Feeding means sucking the blood of a human, and after they’re through, that person becomes a vampire, too. One month later, these new vampires will each be capable of turning 2 more people into vampires. “But how come he only feeds on cats?” you ask Jamie.

“They’re just an appetizer,” Jamie explains. “At the next full moon, he’ll be looking for human blood. The good news is that there’s only one vampire in town. How much harm could a single vampire do?”

“A lot!” you answer. “There are 500,000 people living in this town, right? That means, unless we find the vampire before the next full moon, our town will soon be completely taken over by vampires!” Jamie doesn’t believe you, so you have to prove it to him.

If the vampires feed only on people in your town, approximately how many months will it take for your 500,000-person town to become populated entirely by vampires?

Remember the power of 3! Things can get out of control pretty quickly when numbers continue to triple. Once you figure out the pattern in which the vampires are increasing, creating an algebraic linear equation may be helpful. You’ll need to assign two variables, one to represent the current number of vampires (a value you know), and another to represent the new number of vampires (the value you’re solving for). Then, set up a table, or chart, to organize your data.

But first, write down everything you know:

- There is currently only 1 vampire in town.
- There are 500,000 people who live in town.
- Every month, 1 vampire feeds on 2 humans, turning both of them into vampires.

“A lot!” you answer. “There are 500,000 people living in this town, right? That means, unless we find the vampire before the next full moon, our town will soon be completely taken over by vampires!” Jamie doesn’t believe you, so you have to prove it to him.

If the vampires feed only on people in your town, approximately how many months will it take for your 500,000-person town to become populated entirely by vampires?