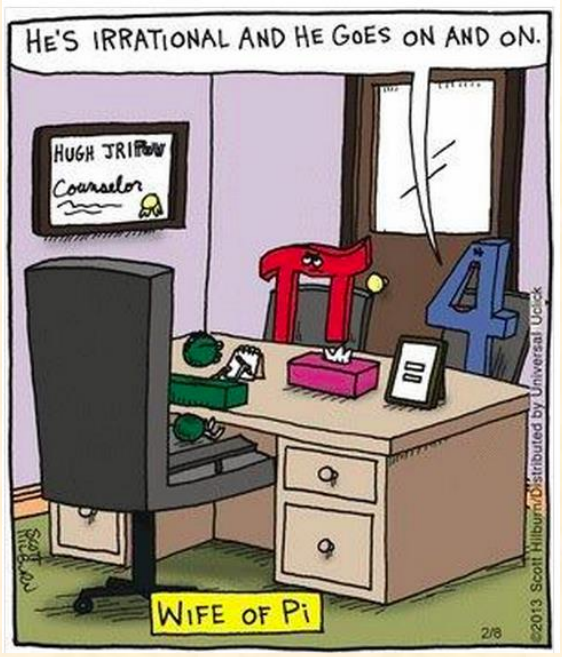
# Math Bulletin
March 2021

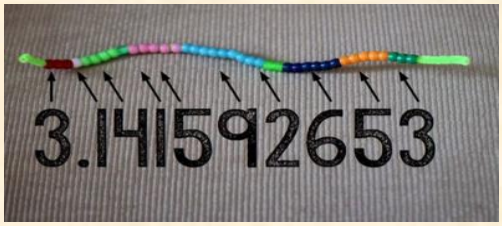
Email: smitc01@cttcs.ca
Ph: 306-783-8787
Cell: 306-621-2248

## March 14

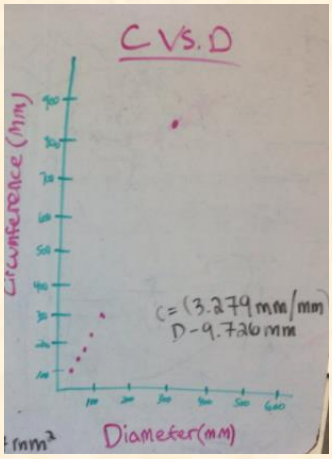


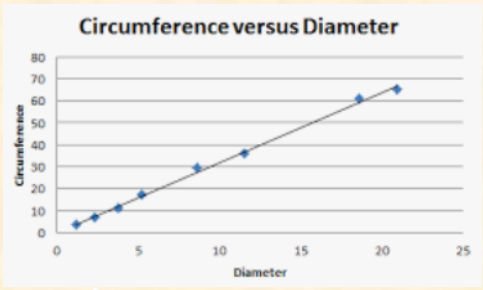

**3.14 Dang, it lands on a weekend this year…but you know what it is…Pi Day!! This is the play date where math nerds of the world unite! So this Friday or Monday, why not release your inner math nerd to have some fun with your students, on the third month, 14th day? Here are some ideas:**

**1.** What is Pi?? Even though most students by grade 8 have applied the constant, oddly not many students know what it *actually is*. Have your kids measure a variety of circles at home or in school—DVD's, garbage cans, water bottles, clocks, plates, etc. Measure the circumference, then the diameter. (Hint: Sewing tape measures work best for measuring circumference. If those are not available, you can use string, then lay it against a metre stick.) Divide. Take an average of the results. Younger students may be surprised that no matter how big or small the circle, C/D turns out the same…a value just over 3. How close can your class come to the actual value for Pi?




**2.** Younger students can build a Pi Caterpillar! It can go all around your room or down the hallway.


**3.** Grade 9 and 10 students: Are you investigating slope? Have your students measure a variety of circumferences (like in #1 above)…and corresponding diameters. Plot the diameters lowest to highest as x value and the corresponding circumferences as y values. Assign a line of best fit, and calculate slope. Voila! Pi! Colorful bar graphs are fun too!

It's also Albert Einstein's Birthday!

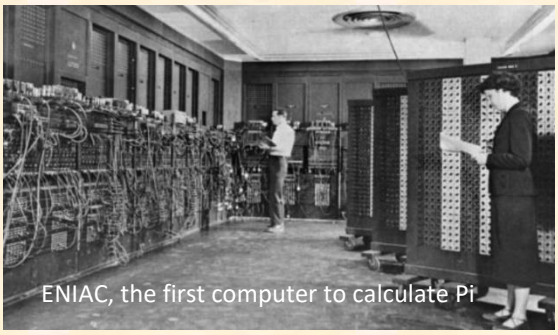
4. Pi Mnemonics: Here are the first two verses of Mike Kieth's poem "Near a Raven". The length of the words corresponds to the first 740 digits of pi! Can your students compose a pi mnemonic?
http://www.fun-with-words.com/mnem_numbers.html

**Poe, E.**
**Near a Raven**

Midnights so dreary, tired and weary.
Silently pondering volumes extolling all by-now obsolete lore.
During my rather long nap—the weirdest tap!
An ominous vibrating sound disturbing my chamber's antedoor.
"This", I whispered quietly, "I ignore".

Perfectly, the intellect remembers: the ghostly fires, a glittering ember.
Inflamed by lightning's outbursts, windows cast penumbras upon this floor.
Sorrowful, as one mistreated, unhappy thoughts I heeded:
That inimitable lesson in elegance—Lenore—
Is delighting, exciting .. nevermore.

5. How about some **Pi trivia**? Where did the symbol come from? (Greek letter). Formerly known as..? (The Ludolphian number, after Dutch mathematician Ludoph van Cuelen, who had Pi worked out to 32 decimal places) . First know mention of Pi? (Some sources say Book of Kings in the Bible, approximating pi to 3, others cite ancient Babylonia). First computer to calculate Pi? ENIAC.
Here is some fun Pi Day trivia
https://www.funtrivia.com/playquiz/quiz602296e7d60.html
https://www.braingle.com/trivia/32340/fun-pi-facts.html


ENIAC, the first computer to calculate Pi

6. ***Freaky sequences that converge to values with pi***
Like these: $1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \frac{1}{9} - \cdots = \frac{\pi}{4},$

$$\frac{\pi^2}{6} = \frac{1}{1^2} + \frac{1}{2^2} + \frac{1}{3^2} + \frac{1}{4^2} + \ldots$$

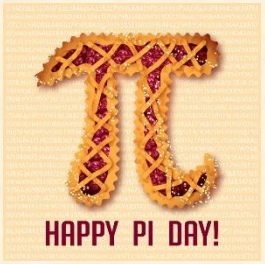
Wait, what???

$$\frac{\pi}{2} = \frac{2}{1}\frac{2}{3}\frac{4}{3}\frac{4}{5}\frac{6}{5}\frac{6}{7}\cdots$$

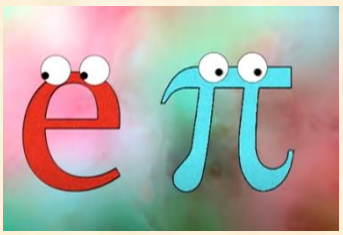
$$\frac{\pi}{2} = \frac{2^2}{1\cdot 3}\cdot\frac{4^2}{3\cdot 5}\cdot\frac{6^2}{5\cdot 7}\cdots$$

$$\frac{\pi}{2} = \frac{2\times 2\times 4\times 4\times 6\times 6\times 8\times 8\cdots}{1\times 3\times 3\times 5\times 5\times 7\times 7\times 9\cdots}$$

$$\pi = \sqrt{12}\times\sum_{k=0}^{\infty}\frac{\left(-\frac{1}{3}\right)^k}{2k+1}$$




7. Where am I in Pi???  Since Pi is irrational, infinite, transcendental and normal, every conceivable string of numbers is in there *somewhere*. This site calculates how many digits in to Pi your birthday occurs. I use this for part of a Pi Day contest…people with birthdays showing up earliest in Pi get the points!
https://www.facade.com/legacy/amiinpi/



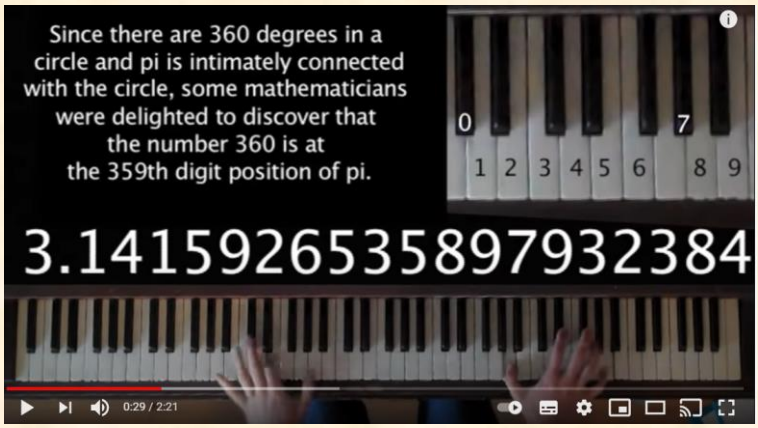
For High School Students:

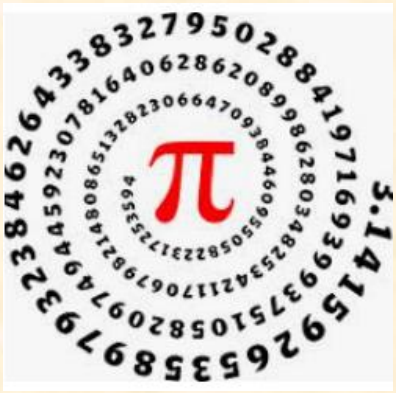
e and Pi go on a blind date
https://youtu.be/nKq6_vjrxMo


For elementary students—maybe your library has this fun mathy book series?

## 8. The Music of Pi

https://youtu.be/OMq9he-5HUU
Several groups have done this…assigned a musical note or tone to each digit of pi, and then play it. Well, it's completely random, and the song goes on….and on…
https://youtu.be/HV1-AjwDJwM

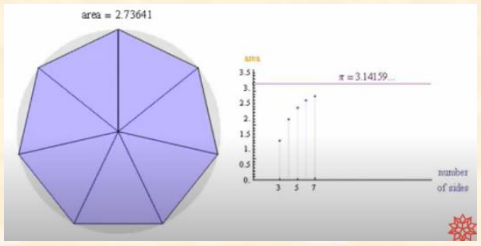


## 9. Pi and Probability (High school—Fnd 30, Precalc 30, Calculus) Explore Buffon's Needles!

https://youtu.be/6jkXBqBOR6o
https://youtu.be/szUH1rzwbAw

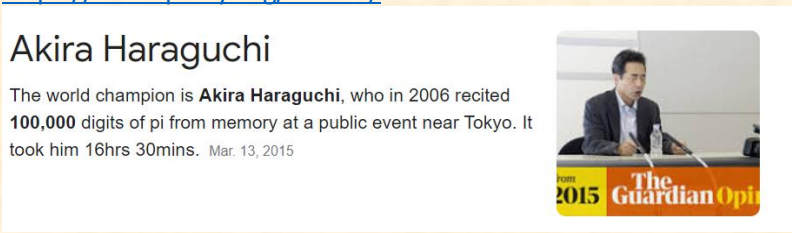
**Or**

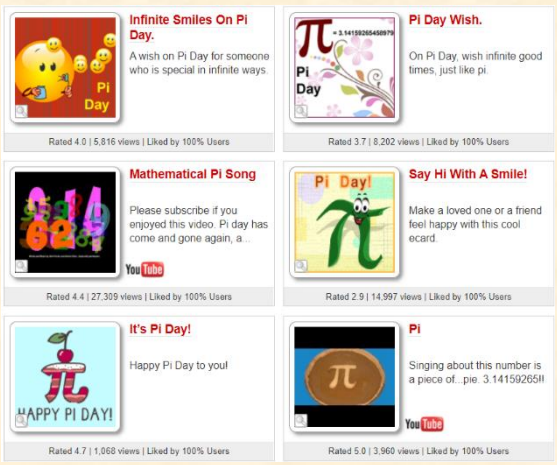



## 10. Most fun of all: Who can memorize the most digits of Pi? You'll be amazed at what your students can do. For a prize, how about a pie?? Or a nice protractor? Here's the first million digits for your students to get started on!

https://www.piday.org/million/

(Gr 7-9) Watch a video from Wolfram math…calculating Pi with inscribed Polygons (Archimedes' method) https://youtu.be/6-y3Amz9-pE
Students can do this!
https://nrich.maths.org/841/solution




Send your friend a fun nerdy Pi Day card. Yes, we do that!
https://www.123greetings.com/events/pi_day/

**More fun Pi Day stuff**
https://www.piday.org/
https://www.exploratorium.edu/pi
http://www.math.utk.edu/~ccollins/refs/piday.html
https://www.weareteachers.com/pi-day-activities/
https://youtu.be/6TPjRoWm8Ck
https://humilityanddoxology.com/pi-day-party-resource-round-up/
https://www.exploratorium.edu/pi/history-of-pi