Math Topic: Pi Day March 14th

Grade Level(s): 7

Learning Outcomes:
C1 Demonstrate an understanding of circles by:
   (a) describing the relationships among radius, diameter & circumference of circles
   (b) relating circumference to pi
   (c) determining the sum of the central angles
   (d) constructing circles with a given radius or diameter
   (e) solving problems involving the radii, diameters & circumferences of circles.
C2 Develop and apply a formula for determining the area of:
   (c) circles.

Context of Activities within the measurement unit:
Pi Day is March 14th (3/14). It is also common to celebrate Pi Minute 1: 59 pm on March 14 with some short special observance (a moment of silence?!).

It is a perfect opportunity for math teachers/students to have some serious math-learning fun! If Pi Day should happen to fall on a weekend, or during spring break, simply celebrate it on the nearest convenient day. This year (2010), we at Miracle Beach are celebrating it on Monday, March 15th, which is the day we come back from spring break.

Basic Structure of the Pi-Day Celebration:
In the morning, we show our projects, and in the afternoon (including lunch) we share out the edible ones. The Pi Minute observance makes a convenient stopping-point for the party, giving time to clean up before the end of the day.
Having a Pi Day celebration is a perfect way to finish up your circles unit, giving students the opportunity to "show what they know" – to demonstrate their mastery of the learning outcomes -- in a variety of fun ways.

Materials/Resources:
Books about Pi:
Cindy Neuschwander, <u>Sir Cumference and the Dragon of Pi.</u>
Websites with Useful Information and Cool Ideas.
>   http://www.piday.org/
>   http://www.exploratorium.edu/pi/
>   http://www.teachpi.org/

Lesson Ideas:
Here are some tried-and-tested project ideas:

1. **Food:** Make round food – pies, of course , are ideal, but cakes, pizza, monster cookies, rice krispie squares or jello jigglers made in a round cake tin, quiche – anything edible that can be made in the form of a circle – will work.
    a) At a bare minimum, I require students to measure the diameter of their creation, calculate the radius, calculate the circumference and area, hand this in, and then eat!!
    b) Students are encouraged to think of ways to label their food with the parts of a circle by adding edible details using pastry scraps, licorice strings, icing, smarties-in-a-line etc.
2. **Drama, Poetry and Song:** Students can create a skit, poem or song to demonstrate their understanding of pi and its relation to the mathematics of circles. Some good examples can be found on the web (see material section for some good sites).
3. **Art:** Students can create a piece of art to demonstrate their understanding: posters, painting, collage, ceramic, woodwork, metal…

Bonus Challenge: The Great Pi-Digit Memorization Competition: This is a strictly voluntary add-on for those students who wish to flex their memory-muscles. It is not directly linked to a learning outcome (none of them say anything about memorizing pi), but a lot of students enjoy the challenge and the opportunity to strut their stuff.

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