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EMS 472—McCulloch  
Pi Activity

Materials: Legos or Centimeter cubes  
Several different sized lids (with lip) or other circular objects  
Excel document “Lego activity”  
Computer for each group with Microsoft Excel

Directions: Students are divided into group of two or three. Each group gets several centimeter cubes, a printout of the circles worksheet, and an Excel document to record the values.

Students place centimeter cubes over the entire circle and count how many cubes it takes to entirely cover figure. Record this number as “Area”. Then, the students draw a straight line with centimeter cubes dividing the circle into two equal parts. Count how many cubes are in this line and record the number as “Diameter”.

Fill out the table, and the mystery column will automatically populate with numbers.

After each group has completed five circles, the class should have at least fifty different approximations of pi. Average them all together and see how close the class came to the actual value.

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| C:\Users\Nick's\Downloads\IMG00082-20110218-1302.jpg | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | Circle | Diameter | Radius | Area | Circumference | Mystery? | Mystery? | | | 1 | 15 | 7.5 | 180 | 44 | 3.2 | 2.93333333 | | 2 | 0 | 0 | 0 | 0 | #DIV/0! |  | | 3 | 0 | 0 | 0 | 0 | #DIV/0! |  | | 4 | 0 | 0 | 0 | 0 | #DIV/0! |  | | 5 | 0 | 0 | 0 | 0 | #DIV/0! |  | | 6 | 0 | 0 | 0 | 0 | #DIV/0! |  | | 7 | 0 | 0 | 0 | 0 | #DIV/0! |  | | 8 | 0 | 0 | 0 | 0 | #DIV/0! |  | | 9 | 0 | 0 | 0 | 0 | #DIV/0! |  | | 10 | 0 | 0 | 0 | 0 | #DIV/0! |  | |

Extension: Why did the circumference method not provide an accurate approximation?