

Finding the Diameter

Summary

In this activity you can learn how archeologists use a technique to find the diameter of broken pottery shards. The diameter of the circle is the measurement from one end of the circle to the other and crosses through the center. Using this chart, you can determine how big a pot or bowl is even if you only have single tiny piece.

Materials

- 1 piece of paper
 - *Any size will do, but white will be easier to read.*
- 1 ruler
- Pencil
- A compass
 - *You will want the kind that you use for drawing and math, not a compass used to find magnetic north!*
- *Bowls, cups, kitchen pots, or pottery*
 - *This will allow you to test different sizes.*
 - *If you have spare pottery (like for plants) you can break a few pieces to use too.*

Steps to Follow *(All activities must be done with adult supervision)*

1. Lay your ruler in the center of the paper and line up the edge of the ruler with the edge of the paper.
2. Using your pencil make a mark at "0" and every inch after.
 - a. *If you want more measurements, you can make marks at every $\frac{1}{2}$ inch or $\frac{1}{4}$ inch.*
 - b. *If you have a metric ruler you can make marks at every centimeter.*
 - i. *2.54 centimeters = 1 inch*
 - ii. *30 centimeters = 1 foot*
3. With your compass, set the point at "0" and the other end at your first measurement. Drag the compass back and forth to make an arc on the paper.
 - a. *Make sure that when you expand your compass to each measurement you keep placing the point at zero.*
 - i. *If you do not have a compass you can use the ruler as a makeshift compass by holding it the end and gently rotating it to make an arc.*
 - b. *Make an arc for every measurement you made with your ruler.*
4. Take your cup and place the curve on the arc that it best fits to find the diameter of your object.
 - a. *We recommend starting at zero and working your way up.*
 - b. *This will work for many objects that are a circle that you can place on the paper.*
 - i. *Try various sizes of cups, bowls, pot and pans, or pottery fragments.*