

Name:

Date:

Lesson 13 Circumference vs. Diameter

Part 2

- 1) Measure 1 tree cookie per group.
 - a) Pull the measuring tape tightly around the tree cookie and record its circumference in the data table below. Sharing measurement responsibilities between group members, repeat the circumference measurement 2 more times on the same tree cookie.
 - b) Measure the tree cookie's diameter and record in the data table. Repeat the diameter measurement 2 more times. Note: Measure the diameter in several directions across the surface of the tree cookie, as they will not be perfectly round and you want to make sure your measurements represent the overall shape of the tree cookie.

	Circumference	Diameter
Trial 1		
Trial 2		
Trial 3		
Average (1+2+3)/3		

- 2) Calculate an average (mean) circumference and average (mean) diameter for the tree cookie.

Average (mean) = Sum all of the values ÷ by the # of values. [Equation 1]

- 3) Use equations 2 & 3 and the appropriate calculated averages (of circumference and diameter) to find a calculated circumference and diameter.

Calculated Circumference = π * average diameter (where $\pi = 3.14$) [Equation 2]

Calculated Diameter = average circumference / π [Equation 3]



	Circumference	Diameter
Calculated (using equation 1)		

- 4) Compare calculations to averages by answering the following questions:
- a) How similar are your measured circumference values?

 - b) How similar are your measured diameter values?

 - c) Why might calculated values be different from measured average values?

 - d) How might scientists (and you) use the circumference/diameter relationship to study live trees?
- 5) Discuss Part 2 as a class.

