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I spend countless hours writing, researching, editing and generating graphics/charts for each question. I want to continue creating useful content for you to use - however, I also want to ensure my work is fairly compensated.

Therefore, below are the terms and conditions for use of our materials.

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- posting a copy of our content (ie. questions, rubrics) on a password protected site for your students to access and/or complete.
- copying our questions into your tests or assignments. Please give credit in this case.

What is not allowed:

- Selling our content.
- Repackaging our content in your own materials and then selling it. NOTE: giving credit to us still does not make this okay.
- Distributing and/or posting our content online (for example, on social media or a blog).

Thank you for supporting us. And, we look forward to helping you with your teaching practice. Please feel free to reach out to us if you have any questions or suggestions.

Sincerely,

Kent
REAL Science Challenge Founder
Science Department Head (Burnaby South Secondary)

Station Activity: Singing Bowls

Question

How does the size of a singing bowl affect the speed required to sustain the note (ie. a standing wave, resonance)?

Procedure

1. At your station, use the ruler to measure the diameter of the bowl. Record diameter on the table.
2. Divide the diameter to get the radius. Record the radius on the table.
3. Place the singing bowl on its ring. Use the mallet and run it along the outside of the rim of the bowl. Keep running the mallet along the outside until a sound is produced. Note: for smaller bowls, it may be easier to gently strike the bowl first with the mallet and then run the mallet along the outside to keep the sound going.
4. While keeping the sound going, use a timer to measure how long it takes to complete 10 revolutions around the bowl. Record the time on the table below.

Calculations

Speed = distance / time

Distance = Circumference of the circle x 10

*multiply by 10 because 10 revolutions were measured.

Circumference = $2 \times \pi \times \text{radius}$

*note: $\pi = 3.14$

Sample Calculation

Bowl Diameter (cm)	Bowl Radius (cm)	Time (s, 10 revolutions)	Speed (cm/s)
16	8	15	$Circumference = 2 \times 3.14 \times 8 = 50.24cm$ $Speed = 50.24 / 15 = 3.35 \text{ cm/s}$

Data & Observations

Station	Bowl Diameter (cm)	Bowl Radius (cm)	Time (s, 10 revolutions)	Speed (cm/s)
1				
2				
3				
4				
5				
6				
7				