

Singing Rods Worksheet

Observations

Part I. Singing Rods

Aluminum rod, thick, 24"

Aluminum rod, thin, 24"

Aluminum tube, 24"

Aluminum rod, thick, 18"

Part II: Doppler Effect

Discussion Questions

1. Why do the aluminum rods resonate and “sing” when they are rubbed with the rosin? What is the purpose of the rosin?
2. At what point on the aluminum rod does the sound appear to be produced?
3. Why must the aluminum rod be held in the middle in order for resonance to occur? Are there any other positions where the aluminum rod can be held that will produce resonance?
4. Compare the sounds produced by the four “singing rods.”
5. Define the Doppler effect.
6. Explain why the sound of the “singing rod” changes when the rod is rotated forward and back.