

STUDENT WORKSHEET

Topic: Resonance



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RESONANCE

A. Problems

Resonance of sound waves is an effect which makes all the beautiful sounds around us possible. If you love the sound of pipe organ, you should give thanks to resonance. You must have noticed that almost all wind-driven instruments have a hollow space inside them. This hollow space or cavity provides the area where sound can resonate. Once it resonates, the resonance coupled with many other factors creates the sweet musical sound of the instrument that you and I enjoy. The hollow space is called a resonant cavity. When you whistle, your tongue and mouth create a resonant cavity. When a policeman or a coach blows a whistle, it is the cavity in the whistle that produces the loud via resonance. The wind-driven sirens of yesteryears also use the same effect. In fact the use of resonance is so common in human life that it would be dull if resonance did not exist.

1. What is resonance and how does its process (especially in tube)?
2. What are the resonant phenomena which happen in our daily life?

B. Objectives

The present study aims to know:

1. The resonance concept and its process (especially in tube).
2. The resonance phenomena in our daily life.

C. Materials

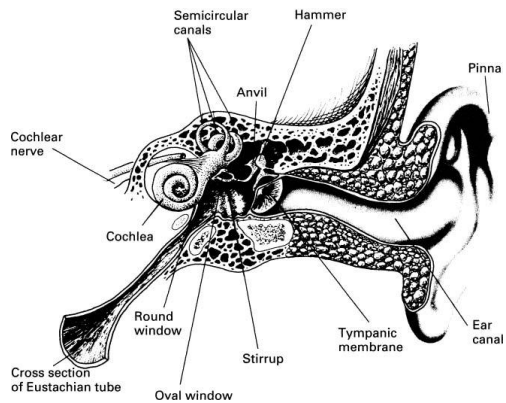
1. Two types of glass
2. Water



D. Methods

E. Discussions

1. What will happen if we scrape the glass' edge filled up by the water?
2. What is the effect of the:
 - a. depth of the water in the glass;
 - b. glass shape/type; and
 - c. scrape direction and power toward sound that we hear?
3. Explain the resonance process in our ear and mouth cavity of the frog!



4. Mention other examples of resonance phenomena in our daily life!