

Now Hear This



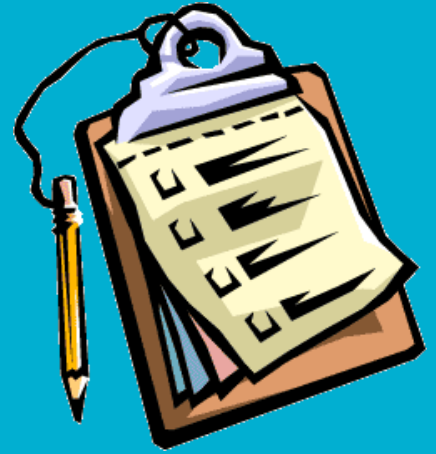
A Sound Study by the Oyster Bay High School Health Class

Introductions

- The project
- The students
 - Terrance Cameron
 - Matt DiCarali
 - Matt Jaronczyk
 - Jack Wieboldt
 - Braedon Warshaw
 - Mikah Covelli
 - Emma Ingoglia
 - Jennifer Sanchez



The Procedure



Terrance
Cameron

- Proposal
- What is dangerous or unhealthy?
- Data collection in the cafeterias
- Results
- Possible solutions

Decibel Danger



Matt
DiCarali

- Adverse short term health effects
- Long term effects
- What the CDC says

What We Found



- The cafeteria is noisy
- But is it dangerous?
- Average Decibel Level by Grade:
 - K--78.2 dB
 - 1st--81 dB
 - 5th--82.4 dB
 - 6th--70.75 dB
 - HS--82.5

Matt
Jaronczyk

Possibilities



- Structural
 - Padding or paneling the walls
- Configuration
 - Rearranging the space

Braedon
Warsaw

The Musical Trade Off



- Results of the University of North Dakota study:
 - 6% decrease with classical music
 - 12% decrease with low, mid-tempo popular music
- Observations in the Vernon cafeteria:
 - Slight decrease

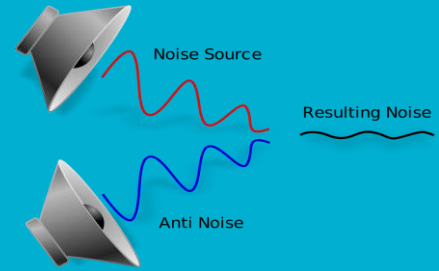
Jack
Wieboldt

Ambient Noise



- Ambient noise:
 - Moderate ambient noise benefits productivity and creativity.
 - Loud, grating ambient noise is detrimental to one's performance when dealing with complex, difficult tasks.
- Noise-Induced Hearing Loss (NIHL):
 - How it occurs: bundles of hair cells that are responsible for different frequencies become damaged due to exposure to loud sound; this can result in hearing loss, tinnitus.

Active Noise Control



- What is Active Noise Control (ANC)?
 - **Interference**- the process in which opposing sound waves with the same range as the undesirable sounds are played to form a new sound wave.
 - **Destructive interference**- the cancellation of the two initial sound waves through the formation of the new wave.
- How does it apply?

The Trade Off

Emma Ingolia



— What can we / do we do to eliminate any possible adverse health effects?

- “Half-in Half-out” solution
 - This could work at Roosevelt, Vernon and the High School.
- Leaving a noisy space
 - Roosevelt and Vernon
 - Oyster Bay High School

Validity of Data



Jennifer
Sanchez

- Time spent in each location
- Sensitivity of equipment
- Time of week

Student drop off and pick up at Vernon and Roosevelt

Mr.
Rizzuto





Our Recommendation:

No further action is needed at this time.

Questions???

