



Grade 11 Science *Senior 3 Physics (30S) A Foundation for Implementation 2003*

Student Learning Outcomes & Unit Skills and Attitude Outcomes Related to Sustainable Development

Topic 1: Waves

1.3 Sound

S3P-0-3c: Identify social issues related to science and technology, taking into account human and environmental needs and ethical considerations.

S3P-1-17 Investigate to analyze and explain how sounds are produced, transmitted, and detected, using examples from nature and technology.

Examples: production of sound by a vibrating object, drums, guitar strings, cricket, hummingbird, dolphin, piezocrystal, speakers...

S3P-1-18 Use the decision-making process to analyze an issue related to noise in the environment.

Examples: sonic boom, traffic noise, concert halls, loudspeakers, leaf blowers...

S3P-1-19 Design, construct (or assemble), test, and demonstrate a technological device to produce, transmit, and/or control sound waves for a useful purpose.

Examples: sound barrier or protective headphones to reduce the effects of noise, electromagnetic speakers, echo chamber, microphone, musical instruments, guitar pickup, electronic tuner, sonar detector, anechoic chamber, communication devices..

S3P-1-25 Define the decibel scale qualitatively, and give examples of sounds at various levels.

S3P-1-26 Describe the diverse applications of sound waves in medical devices, and evaluate the contribution to our health and safety of sound-wave- based technologies.

Examples: hearing aid, ultrasound, stethoscope, cochlear implants...