Students love to have fun with body sounds: burps, gurgles, farts, and the like. This lesson shows them how body sounds convey medically important information.

More than that, the lesson teaches some fundamental science about sound and compares sound oscillations with those of the electromagnetic spectrum. Sound occurs as oscillating pressure waves that can propagate through any medium that does not block it, such as air, water, and metals.

Students learn the differences and similarities between electromagnetic waves and sound waves.

Vocabulary
Oscillation: a repeating, continuous waveform.
Amplitude: time between the peak or valley
Period:

The Veterinary Black Bag Program
Project Goals:
• Develop Veterinarian’s Black Bags (VBBs) of instructional items and pamphlets for middle school teachers to support classroom visits by local veterinarians.
• Provide professional development for veterinarians and teachers on how to use items in the VBBs
• Promote inquiry-based thinking about health-related subjects while emphasizing the value of biomedical research and promoting careers in science.

Follow Up Lesson

The instruction in this module includes:
Presentation on Physical Exam
Follow-up lessons on:
Signalment
Body Temperature
Body Sounds
Summary of Lesson Content

The lesson begins with a tutorial on the physical properties of sound and compares that to the electromagnetic spectrum. Then, students can be formed in groups and each group assigned a library/Web Quest to develop a poster or PowerPoint presentation on their assigned topic (see suggested topics below). The lesson includes an inquiry learning experiment with sound.

Teachers may also want to complement this lesson with the lesson plan we have on waves (see http://peer.tamu.edu/DLC/Pages/TheLight158.asp).

Objectives:

1. Explain the nature of sound.
2. Describe the electromagnetic spectrum and how it differs from sound waves.
3. Compare and contrast the different kinds of bodily sounds that can be indicators of illness.
4. Explain how stethoscopes work to detect bodily sounds.
5. Explain what ultrasonography is and what it is used for.

Activity

We have a hands-on activity at peer.tamu.edu/NSF_Files/tk.asp?file=ride%20the%20waves%7C%7Cdoc&id=185

The activity involves dropping a drop of water, a marble and then a ball into the tub of water and comparing the ripple effects. Then, students design an experiment that will allow them to use their own design to perform it. Student may conduct the following investigations individually or in groups. They will be able to understand how waves work, a wave’s basic structure, and where waves are found.

Questions to Ask

Has stethoscope development reached its peak? Can they get any better? Why or why not?
Are there other ways to monitor body sounds? Can you give some examples?