

Doppler Effect

Summary

Students will see and hear demonstrations of the Doppler Effect and then make an advertisement for a rock and roll band called "The Doppler Effect".

Main Core Tie

Science - Earth Science

[Standard 1 Objective 1](#)

Time Frame

1 class periods of 90 minutes each

Group Size

Pairs

Materials

- coiled phone cord
- rope or slinky
- computer for each student group or one computer and projector
- [student page](#)
(see below)
- construction paper or a printer

Background for Teachers

Time needed

: 90 minutes if computers are used for the poster, less if students do them by hand.

Student Prior Knowledge

This is an introductory activity.

Instructional Procedures

Review with students what is meant by frequency and how the frequency produces a pitch. This should be review from 8th grade. Use the phone cord or slinky to model a frequency and change it to a longer and shorter wave. Describe how sound changes as the source of the sound is either moving toward them or away from them. Ask them why the pitch of the sound gets higher if the sound source is moving toward them and lower if it is moving away from them. The students moving the slinky or phone cord can model this by moving toward and away from one another (trying to keep the same frequency). Hopefully, through illustrations and examples they will see that the frequency is changing as the source is moving.

Play the applets for students or, if they are working independently on computers, they will do this themselves.

Have student describe in their own words the reason a police siren sounds different as it approaches you and goes past. Discuss the reading on the student sheet that compares Doppler effect to Red Shift.

Describe the poster students will be making for the band "Doppler Effect". They can use the

computers to look for pictures or text or they can draw them.

Emphasize that the posters need to have factual information contained in them.

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

[Utah LessonPlans](#)