

4th Grade's Music to Our Ears



Driving Question: *How can we create a musical instrument to demonstrate how sound energy is transferred by waves?*

Content: *Students will create a musical instrument that has never been invented before using recyclables and other various materials. This instrument should be able to demonstrate how sound energy travels through different mediums and how the speed of those waves are affected by the materials. This project will primarily focus on science standards that ask students to learn about sound vibrations. The project will also ask students to think like engineers as they build and create an instrument.*

Standards:

Next Generation Science Standards:

4-PS3-2- *Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.*

4-PS3-4- *Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.*

4-PS4-1- *Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.*

3-5-ETS1-2- *Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.*

Major Products: *Each group will create a poster to advertise and “sell” their instrument. Each group will also create a music video with students playing their instruments to the song of their choice.*

Making it Public: *The groups will present their final music videos as well as their poster advertisements and their instruments in a gallery walk for students and parents.*