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### SCIENCE PARENT NEWSLETTER

FOURTH GRADE

UNIT 1

PHYSICAL SCIENCE

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## IN SCHOOL...

Students are able to use a model of waves to describe patterns of waves in terms of amplitude and wavelength, and that waves can cause objects to move. Students are able to use evidence to construct an explanation of the relationship between the speed of an object and the energy of that object. Students are expected to develop an understanding that energy can be transferred from place to place by sound, light, heat, and electric currents or from object to object through collisions. They apply their understanding of energy to design, test, and refine a device that converts energy from one form to another.

<b>STUDENTS WILL KNOW...</b>	<b>STUDENTS WILL BE ABLE TO...</b>
<ul style="list-style-type: none"><li>• There is a relationship between the speed of an object and the energy of that object.</li><li>• Energy can be transferred from place to place by sound, light, heat, and electric currents or from object to object through collisions.</li><li>• We can design, test, and refine a device that converts energy from one form to another.</li><li>• Most scientists and engineers work in teams.</li></ul>	<ul style="list-style-type: none"><li>• Make observations to produce data to serve as the basis for evidence for an explanation of a phenomenon or test a design solution.</li><li>• Apply scientific ideas to solve design problems</li><li>• Develop a model using an analogy, example, or abstract representation to describe a scientific principle</li><li>• Develop a model to describe phenomena</li></ul>






## AT HOME...

<b>ASK YOUR STUDENTS...</b>	<b>ENGAGE YOUR STUDENTS...</b>
<ul style="list-style-type: none"><li>• How do we use energy each day?</li><li>• What ways can energy be changed from one form to another?</li><li>• How do waves influence our everyday lives?</li><li>• What is energy and how is it related to motion? How is energy transferred?</li><li>• How can energy be used to solve a problem?"</li></ul>	<ul style="list-style-type: none"><li>• Energy is present whenever there are moving objects, sound, light, or heat.</li><li>• Energy can be transferred in various ways and between objects. Light also transfers energy from place to place</li><li>• Energy can also be transferred from place to place by electric currents then used to produce motion, sound, heat, or light.</li></ul>



# OFFICE OF K-12 SCIENCE & PLANETARIUM

## IN THE COMMUNITY...

- Identify how different materials are used to reduce sound in public places
- Complete some research on the type of energy used to supply your electricity. It is most likely coal or nuclear. How is the energy created and then transferred to your home?
- Research how a vehicle converts gasoline into energy that allows the wheels to turn
- Have you ever been walking near a road or on the sidewalk of a bridge and you feel the vibration of the cars under your feet? Why does that happen?
- Why do waves of light react differently in some mammals eyes and cause them to glow?

## U46 STEM EXPO...

- Build a device that transforms one form of energy into another.
- Design a model or device that uses waves to move an object.
- Design a model that shows how light waves allow an image to be seen in a eyeball.