Science Learning Packet
Grade 4, Week 4:
Waves, Energy, & Information

Suggested science learning activities for SPS students during the COVID-19 school closure.

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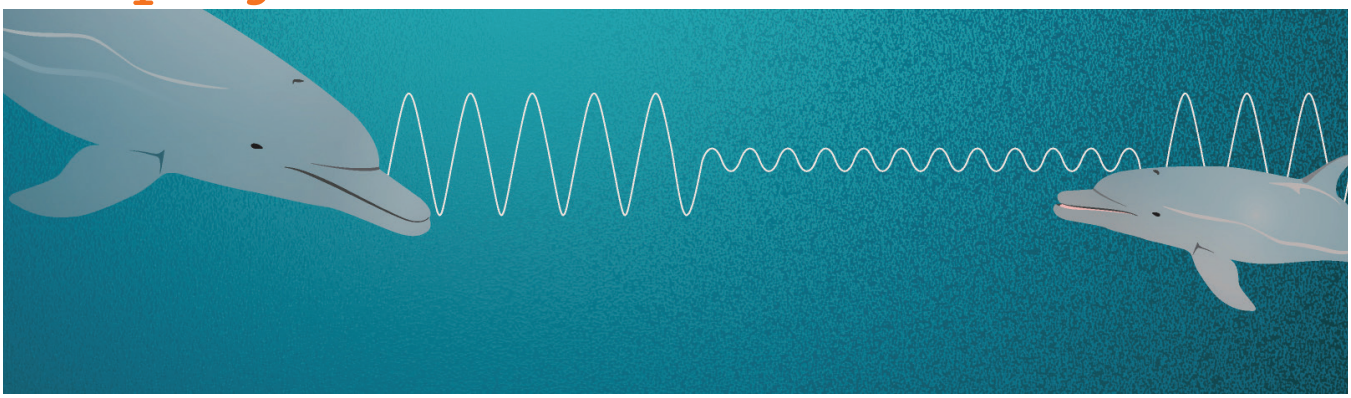
Due to the COVID-19 closure, teachers were asked to provide packets of home activities. This is not intended to take the place of regular classroom instruction but will help supplement student learning and provide opportunities for student learning while they are absent from school. Assignments are not required or graded. Because of the unprecedented nature of this health crisis and the District's swift closure, some home activities may not be accessible.

If you have difficulty accessing the material or have any questions, please contact your student's teacher.

AmplifyScience



Waves, Energy, and Information:

Investigating How Dolphins Communicate

Grade 4 - Lessons 2.2 and 2.3

Accompanying Videos and Books can be found at:
tinyurl.com/SciLessons

Other Amplify resources can be found at:
amplify.com/remotelearning/Science/resources

SEATTLE PUBLIC SCHOOLS

Investigation Notebook

Name: _____ Date: _____

Daily Written Reflection

What is one thing you learned from reading the book *Sound on the Move*?

Make a drawing if it helps you explain your thinking. Label your drawing, then take a photo of your drawing and attach it in the box below.

Name: _____ Date: _____

Observing Sound Traveling in the Sim

1. Select an instrument in the Sound Waves Simulation.
2. Press Play and observe what happens using your eyes and ears.
3. Record observations of what you see and hear.
4. Repeat Steps 1–3 with a different instrument.

Instrument: _____

Observations

Instrument: _____

Observations

Name: _____ Date: _____

Daily Written Reflection

Describe a time when you have heard animals use sound to communicate.

Make a drawing if it helps you explain your thinking. Label your drawing, then take a photo of your drawing and attach it in the box below.

Name: _____ Date: _____

Observing Sound Energy Traveling

How does sound energy travel through a material?

1. Open the Sound Waves Sim.
2. Select an instrument and press Play.
3. Select a particle. Observe the motion of the particle as the sound energy travels across the screen.
4. Repeat Steps 2–3 with a different instrument.

Choose one of the instruments you selected in the Sim and draw what you observed as the sound energy from the instrument traveled away from the source. Label your drawing, then take a photo of it and attach it below.

Name: _____ Date: _____

Getting Ready to Read: *Sound on the Move*—Part 2

1. Before reading pages 14–22 of *Sound on the Move*, read the sentences below.
2. If you agree with the sentence, write an "A" on the line before the sentence.
3. If you disagree with the sentence, write a "D" on the line before the sentence.
4. After you read pages 14–22, see if your ideas have changed. Be ready to explain your thinking.

_____ Sound can travel through air, water, and solids.

_____ Humans are the only animals that can communicate with each other by using sound.

_____ Sounds can travel long distances in the ocean.

_____ The particles that make up the ground do not move at all.

Name: _____ Date: _____

Reading Reflection: *Sound on the Move*—Part 2

The source of each sound described in *Sound on the Move* is in the "Source" column of the table below.

1. In the "Listener" column, write who the listener is.
2. Then, visualize the sound energy traveling from the source to the listener. In the third column, write what the sound travels through.

Source	**Listener**	**What does the sound travel through?**
Human (pages 6–7)		
Mountain bluebird (pages 10–13)		
Sperm whale (pages 14–17)		
Kangaroo rat (pages 18–21)		

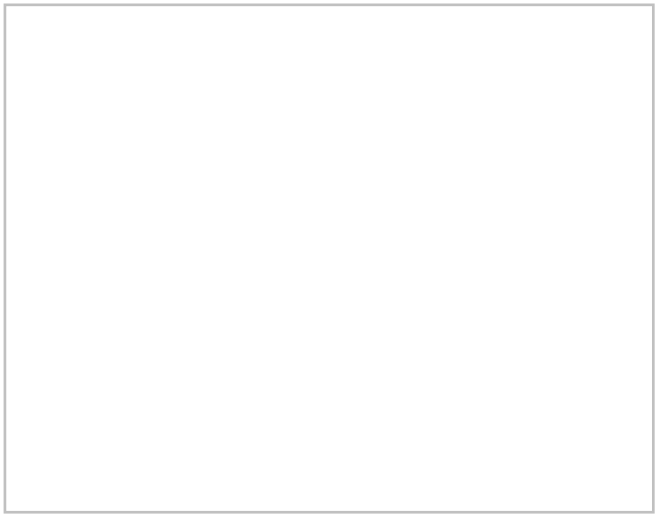
3. Choose one of the animals from the book. Draw a diagram of how the sound the animal makes gets from the source to the listener. Include particles in your drawing. Label your drawing, then take a photo of it and attach it in the box below.

Name: _____ Date: _____

Word Map: Particle

My definition

Diagram



particle

Sentence

Example

Name: _____ Date: _____

Word Map: Collision

My definition

Diagram

collision

Sentence

Example

Glossary

amplitude: how big or loud a wave is
amplitud: cuán grande o fuerte es una onda

collision: two or more things bumping into each other
colisión: dos o más cosas que se golpean entre sí

communicate: to share information
comunicar: compartir información

energy: the ability to make things move or change
energía: la capacidad de hacer que las cosas se muevan o cambien

explanation: a description of how something works or why something happens
explicación: una descripción de cómo algo funciona o por qué algo pasa

investigate: to try to learn more about something
investigar: intentar aprender más acerca de algo

material: the stuff that makes up everything
material: lo que constituye todo

model: something scientists make to answer questions about the real world
modelo: algo que los científicos crean para responder preguntas sobre el mundo real

particle: a tiny piece of material that is too small to see
partícula: un pedacito de material que es demasiado pequeño para ver

pattern: something we observe to be similar over and over again
patrón: algo que observamos que sea similar una y otra vez

Glossary (continued)

source: the place where something comes from
fuente: el lugar desde donde viene algo

transfer: to move something from one place to another
transferir: mover algo de un lugar a otro

vibrate: to move back and forth quickly
vibrar: mover hacia adelante y hacia atrás rápidamente

visualize: to make a picture in your mind using information from different sources
visualizar: hacer una imagen en tu mente con información de diferentes fuentes

wave: a pattern of motion that travels away from a source
onda: un patrón de movimiento que viaja alejándose de una fuente

waveform: a curved line that shows the pattern of a wave
forma de onda: una línea curva que muestra el patrón de una onda

wavelength: the distance from one peak of a wave to the next
longitud de onda: la distancia que hay desde un pico de onda hasta el siguiente