



Science Learning Packet

Grade 4, Week 5:

Waves, Energy, & Information

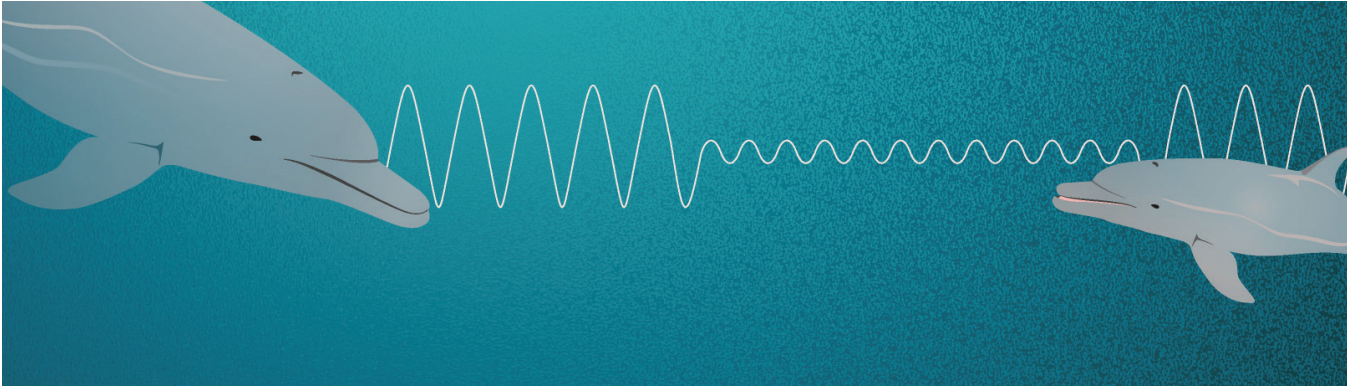
Suggested science learning activities for SPS students during the COVID-19 school closure.

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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.



Waves, Energy, and Information:

Investigating How Dolphins Communicate

Grade 4 - Lessons 2.4 and 2.5

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

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

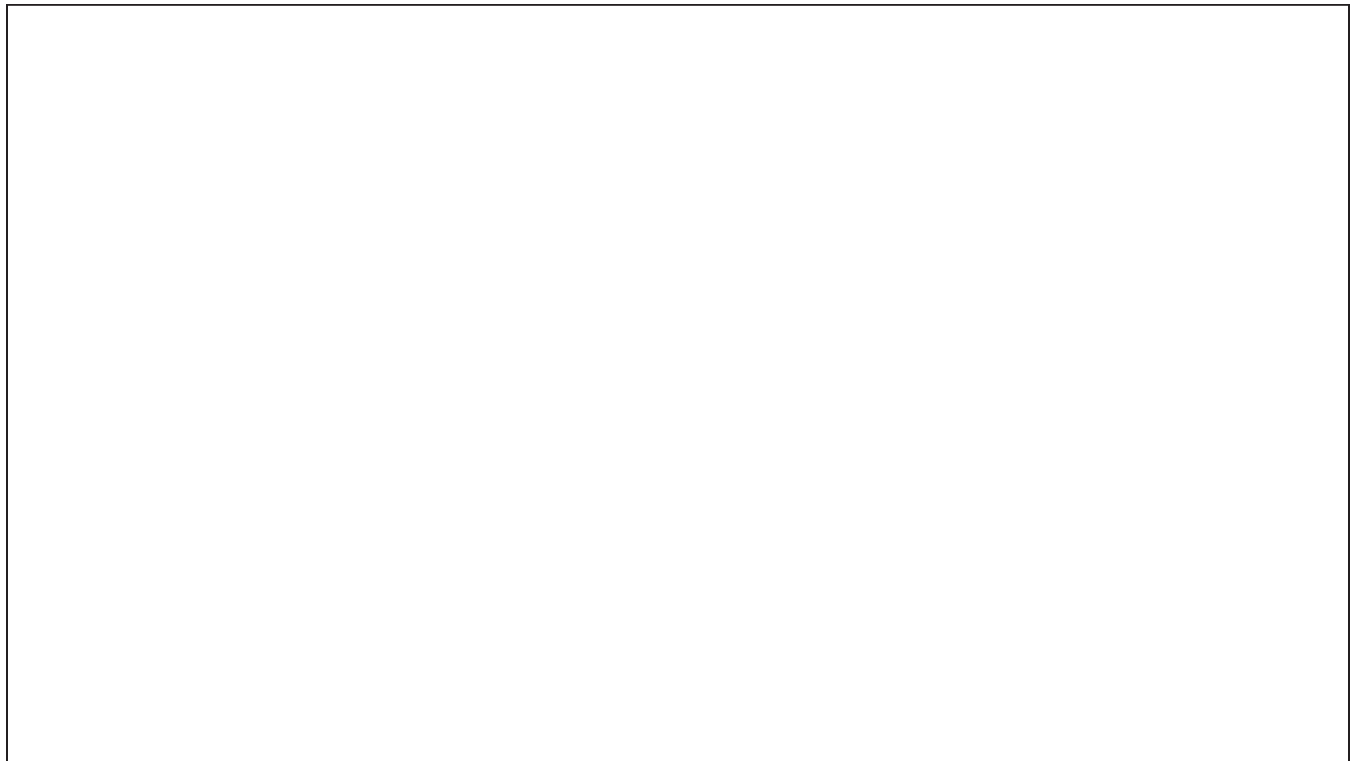


Name: _____ Date: _____

Daily Written Reflection

You have learned that a sound wave is a pattern of motion that occurs when particles of a material collide and spread apart. Think about another example of when objects collide, or bump into each other. What happens to those objects?

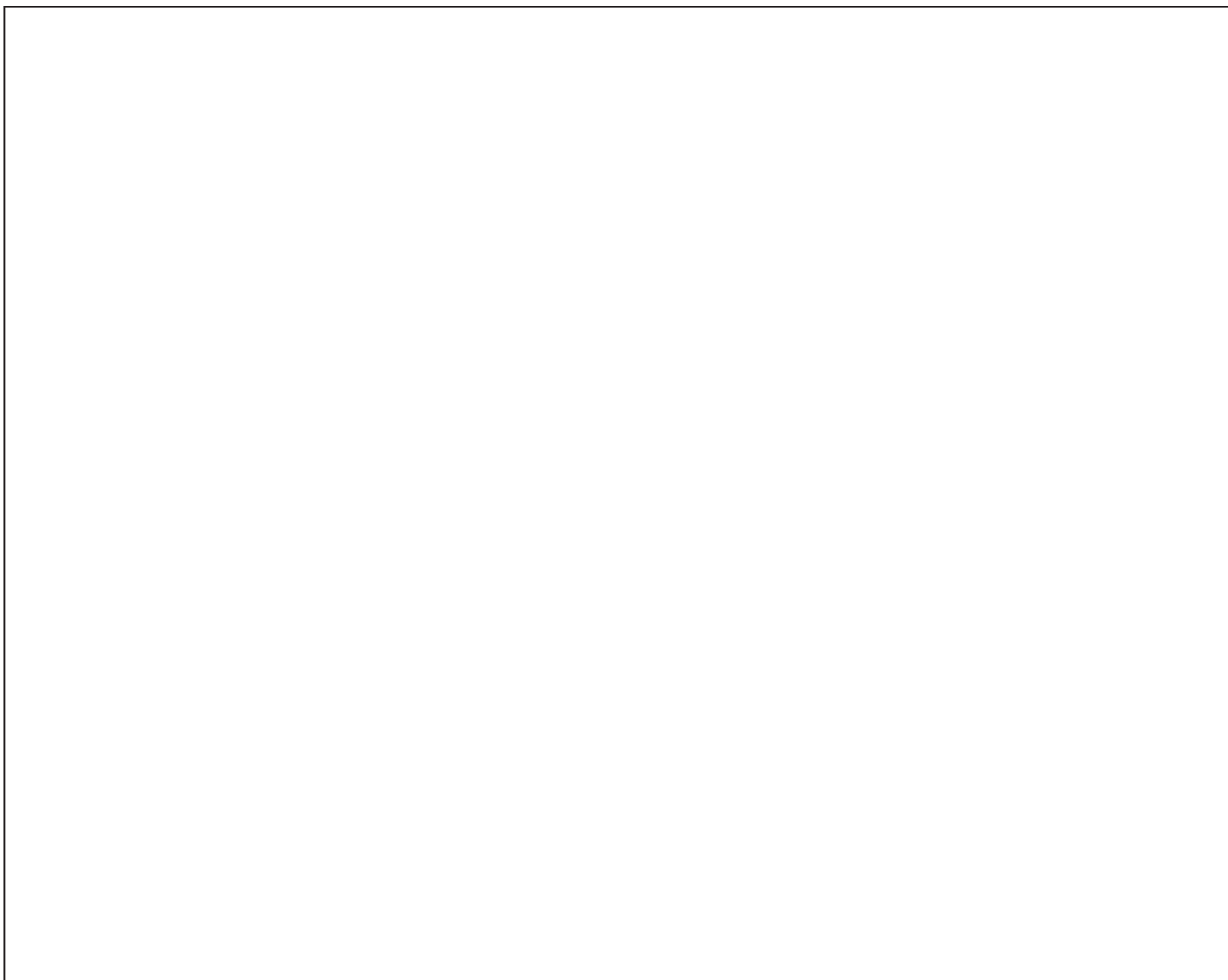
Make a drawing if it helps you explain your thinking. Label your drawing, then take a photo of it and attach it in the box below.



Name: _____ Date: _____

Think-Draw-Pair-Share: Modeling Particle Collisions

1. Think about the question *How is the spring toy a model of particle collisions?*
2. On paper or using a drawing program, make a drawing to explain your ideas.
3. Label your drawing. You can also include symbols to show how the particles move. Take a photo of your drawing and attach it in the box below.
4. Use your drawing to discuss your ideas with your partner.




Investigating Energy Transfer with Coins

1. Work with a partner. Make sure that both you and your partner have a chance to try both of the investigations.
2. You have 5 minutes to complete each investigation.
3. During the investigations, you cannot touch the pennies with your hands, but you can touch the nickel.

Investigation 1

Place the nickel and one penny on the desk in front of you.

Goal: Without touching the penny with your hands, make both coins move. How did you do it? What did you observe? Draw a picture if it helps you explain. Take a photo of your picture and attach it in the lower box below.



Name: _____ Date: _____

Investigating Energy Transfer with Coins (continued)

Investigation 2

Place all the coins on the desk in front of you.

Goal: Without touching the pennies with your hands, make all four coins move.

How did you do it? What did you observe? Draw a picture if it helps you explain. Take a photo of your picture and attach it in the lower box below.

Name: _____ Date: _____

Reflecting on the Coin Collision Investigations

Answer the questions below based on what you observed when you investigated energy transfer with coins.

1. How are the coins a model of particle collisions?

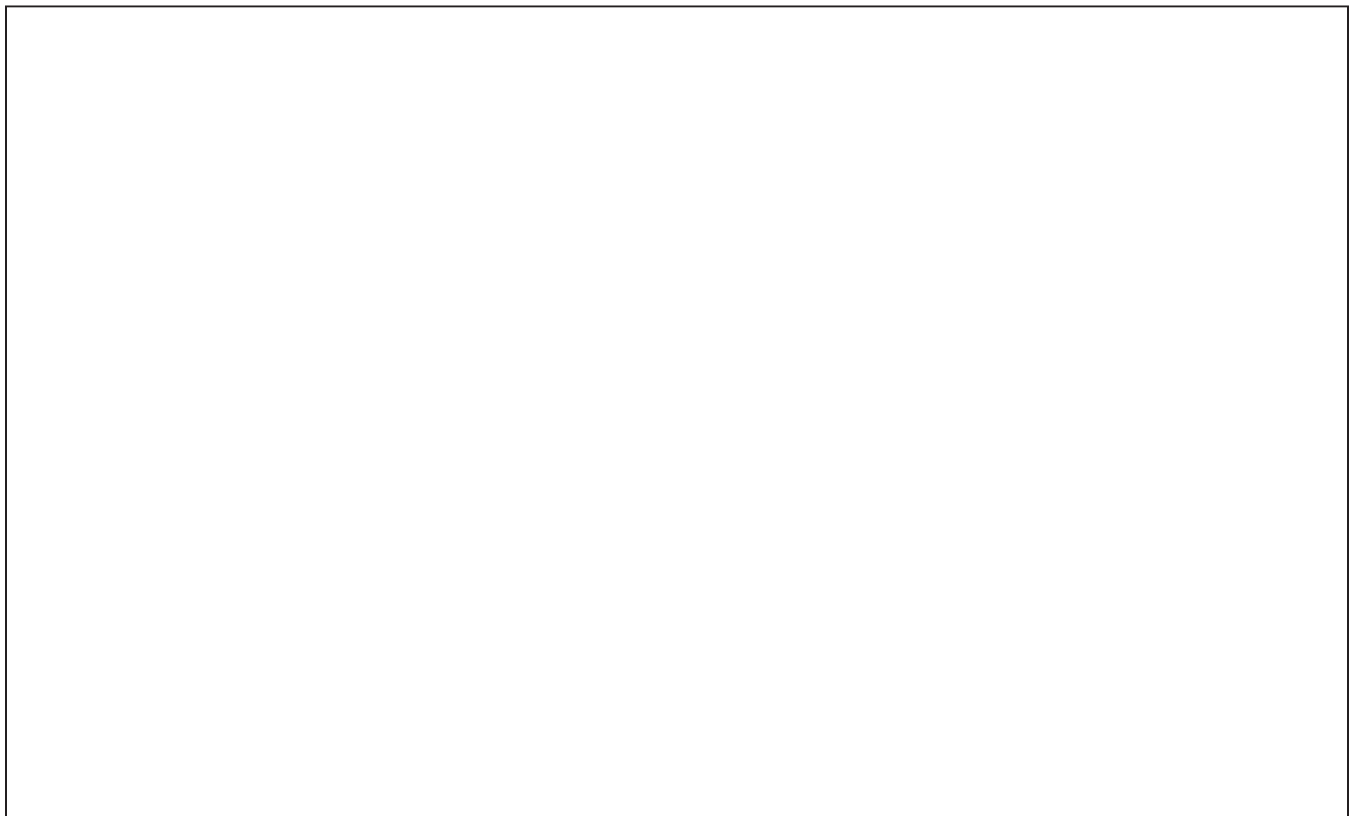
2. When coins collide, what happens to each coin?

Name: _____ Date: _____

Daily Written Reflection

What happens when two balls (for example, basketballs, tennis balls, or soccer balls) collide? Explain what happens to each ball when it collides with the other ball.

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

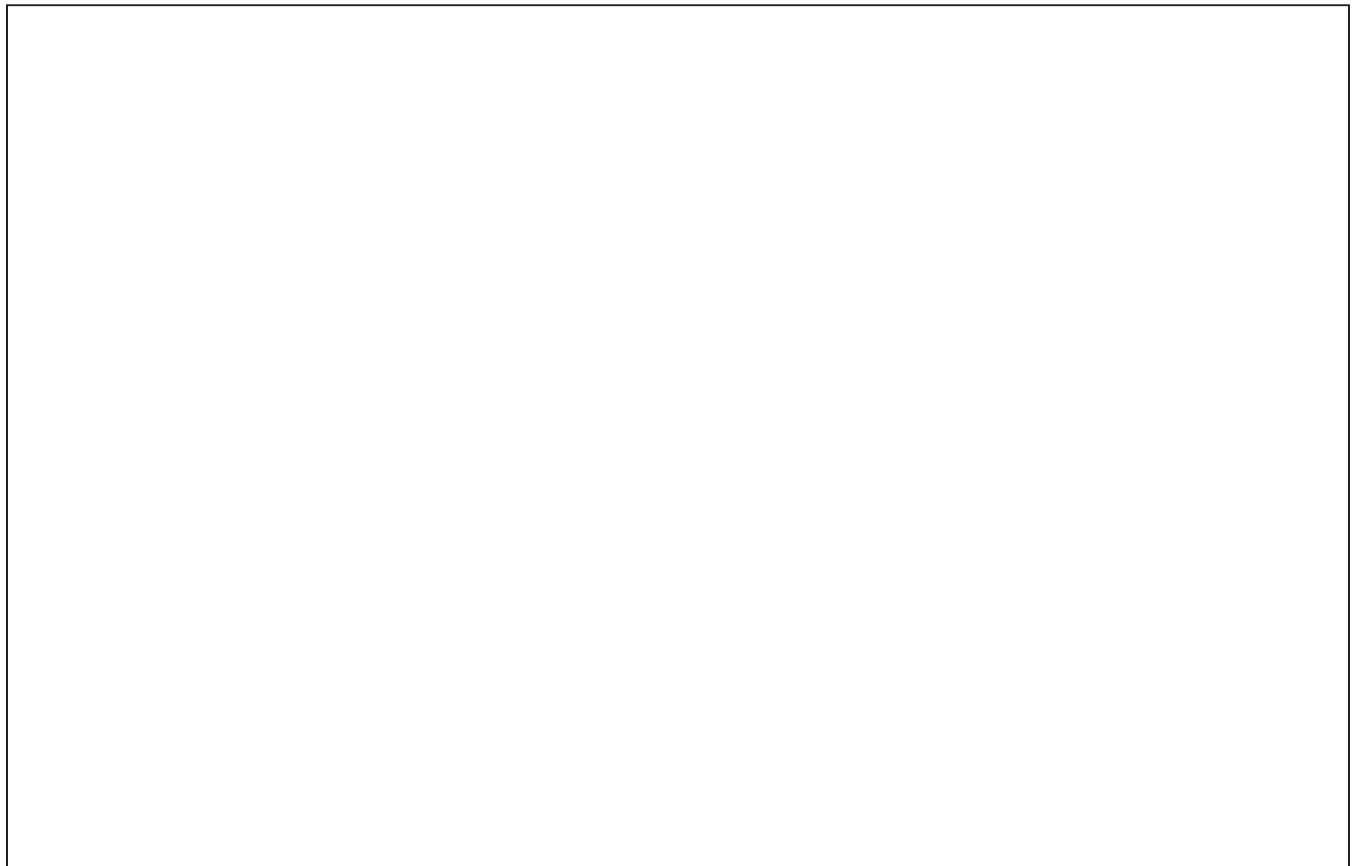


Name: _____ Date: _____

Particle Collision Model

How does your model show sound energy traveling as a series of particle collisions?

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.



Word Map: Transfer

My definition	Diagram
transfer	
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

fuelle: 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