6-8 SCIENCE DIFFERENTIATED ACTIVITIES
Grades 6-8 Science Learning Activities

Below is a list of activities that students can work on during the unexpected closure of schools. Activities are designed to reinforce the learning already facilitated to students during the 2019-2020 Academic School Year. This Remote Learning Activity Packet was created for a minimum of fourteen (14) days of independent practice.

The content focus is as follows:

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Light and Sound

Level E

by Janel Gazunis

Illustrated by Alex Wisehart
Energy is the power to do something. Energy can be found everywhere. Light and sound are types of energy. The light from a lamp is energy. The sounds from a radio are energy.
Light is energy that allows us to see. We can get light from many things. The Sun gives off light. A flashlight or candle gives off light. A firefly gives off light too.
Light can look bright. A spotlight shining on a stage can look bright. Light can look dim. The light from a small lamp in a room can look dim.
Light moves in waves. Light waves move very fast. We can see some light waves. But, we cannot see all light waves.
Sounds are all around us. A sound is anything we hear. Clapping your hands makes a sound. A car horn makes a sound. Playing a musical instrument makes a sound.
Sounds can be loud or quiet. A siren on a police car makes a loud sound. You make a quiet sound when you whisper.
Sounds are caused by vibrations. Vibrations happen when something moves. It moves back and forth very fast. When you pluck a rubber band, it makes vibrations. The vibrations move in waves.
Sound waves move into our ears. Then, we can hear the sound. People cannot hear every sound around them. Some sounds are too quiet, low or high.
Light and sound are all around us. They are types of energy. Light and sound both move in waves. What else do you know about light? What else do you know about sound?
The End
Light and Sound

Within each category, pictures are listed from left to right in the order in which they appear in the text.
Lights! Sound! Action!

by Janel Gazunis and Kara Meaux

Illustrated by Katie Zolnowski
Chapter 1:
The Spring Play
Kara, Gavin and Dale are excited. The class is doing a spring play. Kara loves to act. She hopes to get an acting part in the play. Gavin and Dale love working backstage. They go to the first meeting for the play.

*Why are Kara, Gavin and Dale excited?*
Mrs. Thomas is the chorus teacher. She is the director of the play. Mrs. Thomas says, “The play will be both fun and hard work. We need students to act in the play. We will also need students to help backstage. This means helping with props, scenery, lights and sound.”

Describe what students will do during the play.
“Lights and sound aren’t important,” says Kara. “Lights and sound are very important during a play,” says Mrs. Thomas. “What happens if the stage is too dark? What happens if the stage lights are too bright? What happens if the actors’ voices or music is too low?” The students look very confused. They are not sure what would happen.

Why are the students confused?
“Stage lights help people see what is happening on stage,” says Mrs. Thomas. “If the lights are too bright or too dim, people cannot see the play. If the sound is too low, people cannot hear the actors or music. I think we need to learn more about light and sound to help with our play.”
Mrs. Thomas tells the students that light and sound are types of energy. Light and sound both move in waves. “A wave, like saying hi?” asks Dale. “No, not like saying hi,” says Mrs. Thomas. “These sound and light waves move energy from one place to another.”

*How do light and sound move?*
“Light waves and sound waves come from different places and things,” says Mrs. Thomas. “But, they both move fast through different materials. Light and sound waves can reflect or bounce off things. Light and sound waves can be absorbed, or soaked up by things.

*What does reflect mean? What does absorb mean?*
“Now, we know that light and sound are the same in some ways,” says Mrs. Thomas. “But, they are different in other ways. Let’s talk more about light waves and sound waves. Then, we can have the best light and sound for our play.” Mrs. Thomas’ class can’t wait to start working on the play!

How are light and sound the same? How are they different?
# The Spring Play

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<thead>
<tr>
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<th>work</th>
<th>excited</th>
<th>class</th>
<th>play</th>
<th>backstage</th>
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<td>actor</td>
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<td>learn</td>
<td>fast</td>
<td>energy</td>
<td>wave</td>
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Within each category, pictures are listed from left to right in the order in which they appear in the text.
1. Mrs. Thomas' class is doing a spring __________.

2. Students can help with lights and __________.

3. Light and sound both move in __________.

4. Sound waves and light waves move __________.

5. __________ and sound are the same in some ways.
1. What is this chapter about?
   a. spring play  b. football game  c. field trip

2. What can students help with?
   a. math and science  b. lights and sound  c. art and music

3. How do light and sound move?
   a. circles  b. groups  c. waves

4. What do sound waves and light waves move?
   a. energy  b. props  c. people

5. What is important to know about this chapter?
   ○ a. The class plays music on the piano.
   ○ b. Lights and sound are not important for the play.
   ○ c. Light and sound are the same in some ways.
Use your chapter book to help you fill in the blank.

1. The _________ is doing a spring play.

2. Kara loves to _________.

3. Gavin and Dale love working _________.

4. _________ help people see what is happening on stage.

5. If the lights are too bright or too _________, people cannot see the play.
Good Work Habits

I CAN PRACTICE GOOD WORK HABITS IN MY CLASSES BY:

making sure I have materials that I need like books, pencils and paper

following the teacher's directions

doing my work

cleaning up materials after I use them
Chapter 2:
Light Waves on the Move
Mrs. Thomas meets with the class the next day. “Let’s learn more about light,” she says. “Light is made up of little pieces of energy called photons. They move in waves. Light waves can come from the Sun. Light comes from burning a candle. A firefly even makes its own light. The stage lights will give us light for our play.”

*What is light made of?*
Mrs. Thomas turns on the stage lights. The stage lights are very bright. The students cover their eyes with their hands. She asks them, “Why are you covering your eyes?” “The light is too bright,” says Gavin. Mrs. Thomas turns off the lights. “That’s right!” she says. “You can block light waves with your hand.”

*Why do the students cover their eyes?*
“Light waves can move through some objects,” says Mrs. Thomas. “But, light waves cannot move through other objects. Your hand blocks the light. Things that are opaque can block light waves. You can’t see through things that are opaque. Your hand is opaque.”

Describe something that is opaque.
The students want to know if light can move through the stage curtains. They stand behind one of the curtains. Mrs. Thomas turns on the stage lights. “Can you see the light?” asks Mrs. Thomas. “No,” says Gavin. “You cannot see the light because the curtains are opaque. They block the light,” says Mrs. Thomas.
Mrs. Thomas has the students stand behind another stage curtain. It is thinner than the first curtain. She turns on the lights. Kara says she can see Mrs. Thomas, but not clearly. “The thin curtain is translucent,” says Mrs. Thomas. “This means it lets some light move through, but some light is blocked.”

*Describe why the students can see the light through the thinner curtain.*
“What are some things that light can move through clearly?” asks Mrs. Thomas.

“Glass, like light bulbs,” says Gavin.

“Plastic, like a water bottle!” says Kara.

“That’s right,” says Mrs. Thomas, “Light waves move through both glass and plastic. They are transparent. You can see through them.”

*What are some things that are transparent?*
“Now, we know that light can move through objects,” says Mrs. Thomas. “It can move through some things clearly. It is blocked by other things. Sometimes only some light waves can move through an object.

Tomorrow, we will learn even more about light. You will also get your parts for the play.”

*Describe what can happen when light waves hit an object.*
**Light Waves on the Move**

<table>
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<tr>
<th>Learn</th>
<th>Made of</th>
<th>Bright</th>
<th>Light</th>
<th>Light Wave</th>
<th>Energy</th>
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<td>block</td>
<td>thin</td>
<td>firefly</td>
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<td>clearly</td>
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<td>see</td>
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<td>glass</td>
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1. [ ] are made of energy.

2. The [ ] will give off light for the play.

3. The students' hands [ ] the light waves.

4. Some light moves through the thin [ ] .

5. Light can [ ] through some objects.
1. What is this chapter about?
   a. light waves  
   b. echoes  
   c. curtains

2. What will give off light for the play?
   a. fire  
   b. stage lights  
   c. candle

3. What did the students' hands do to the light waves?
   a. wave  
   b. shake  
   c. block

4. What does some light move through?
   a. thin curtain  
   b. loud microphone  
   c. small prop

5. What is important to know about this chapter?
   ○ a. Light can move through some objects.
   ○ b. The Sun does not give off light.
   ○ c. Curtains give off light.
Use your chapter book to help you fill in the blank.

1. __________ is made up of little pieces of energy called photons.

2. Light waves can come from the ____________.

3. The stage lights are very ____________.

4. The students cover their ____________ with their hands.

5. Things that are ____________ can block light waves.
These questions may have more than one correct answer:

6. What do the students stand behind?
   - a. stage curtain
   - b. props
   - c. wall

7. What is the thin curtain?
   - a. ripped
   - b. translucent
   - c. new

8. What can light waves move through clearly?
   - a. glass
   - b. wood
   - c. plastic

9. What are some things that are transparent?
   - a. light bulbs and water bottles
   - b. pizza and soda
   - c. cell phones and computers

10. What do the students learn about light?
    - a. Light waves move through transparent objects.
    - b. Some objects block light waves.
    - c. Light cannot move through any object.
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<th>block</th>
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<th>stage lights</th>
<th>curtain</th>
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