CCPS Science Unit Plan

Grade	1st	Subject	Science	Unit #	4
Unit Name	Unit 4: Sound		Timeline	6 weeks January 7th - February 21st	
How to use the Framework	This Framework should be used to implement daily science instruction. The resources and instructional strategies reflected in the Framework will provide a foundation for effective implementation and student mastery of standards. Please see the hyperlinked abbreviation document to ensure understanding of all abbreviations used with this framework. CCPS Department of Science Website for access to all unit frameworks.				
Unit Overview	**Background Information:** Sound is a form of energy that we encounter in everyday life. Sound can make matter vibrate, and vibrating matter can make sound. Vibrations cause the movement of particles, resulting in sound waves. **Prerequisites:** **Sound realates to hearing.** **By the end of this unit, the student should understand**: ● Vibrating materials make sound, and that sound makes materials vibrate **By the end of this unit the student should:** ● Encounter vocabulary words that build core understanding ● Make observations from direct exploration ● Have experience with vibrating materials ● Reason that vibrating materials can make sound **Science-1st-Teacher-Notes.pdf**				
Lesson Plan guidance document and template	Link the following : https://drive.google.com/file/d/1dDFitw1NesctodMZ9XAr7zc0-S5GZKPB/view?usp=drive_link				
Standards					

GSE	Science and Engineering Practices	Crosscutting Concepts
S1P1 : Obtain, evaluate, and communicate information to investigate light and sound. **d**. Construct an explanation supported by	**Planning and Carrying Out Investigations** to answer questions or test solutions to problems in K - 2 builds on prior experiences and progresses to simple investigations, based on fair tests,	**Cause and Effect –** Simple tests can be designed to gather evidence to support or refute student ideas about causes.

	evidence that vibration materials can make sound and that sound can make materials vibrate. **e**. Design a signal that can serve as an emergency alert using light and/or sound to communicate over a distance.	which provide data to support explanations or designs solutions. **Constructing Explanations and Designing Solutions** in K-12 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomenon and designing solutions.	
NGSS Alignment	NGSS Alignment to Disciplinary Core Idea		

The Phenomenon Protocol

Anchoring Phenomena	Learning Targets
Rice Drum Experiment **S1P1d.projectable.PNG**	The students will demonstrate how vibration materials can make sounds and that sound can make materials vibrate and construct an explanation to support their evidence.
Signal Device: **S1P1e.projectable.PNG**	The students will design a signal that can serve as an emergency alert using sound to communicate over a distance.

Weekly Lesson Tasks

Whole Group: SAVVAS
Small Group: Discovery Education: Mystery Science, Explore Learning, GaDOE Inspire Tasks, SAVVAS Leveled Readers

Week 1		
GSE: S1P1d		**Focused Concept: Investigate Sound**
Learning Targets:	**I can investigate how sound is made.**	
Lab Safety and Materials	**General Safety Practices for the Elementary Science Classroom- TOC.docx**	
Phenomenon: **S1P1d.projectable.PNG**		**DQ: What happens when objects vibrate?**

Day 1: Opening	Day 2 : Guided Practice/ Transition	Day 3: Independent Practice	Day 4: Independent Practice	Day 5: Assessment / Summary
Phenomenon Introduction Show students the phenomenon card : S1P1d.projectable.PNG Use the see, think wonder strategy to guide student thinking. The teacher should provide students opportunities to share observations and develop questions. The teacher should record students' observations on chart paper and refer back to initial student ideas throughout the week. **Inquiry Activity** **SEP Teacher Tip:** To support students with the science and engineering practices for this week, follow the guidance in this protocol: Developing model construction questions Provide constructive feedback for building a model Student back pocket questions Topic 1: Sound Opener **SAVAAS T.E. Page 1.** Have them look at the picture on Page 1. Ask students to identify which instruments make large sounds when you bang them? Use the SAVVAS **Differentiated Instruction Guide** to extend the opener: **Support Struggling Students** Facilitate a	**Introduce the Driving Question:** Have students review the driving question: ***What happens when objects vibrate?*** Use the strategy to support students with making connections and understanding the driving question (DQ). Visualizing the Driving Question Click here to access question words reference chart The process can be recorded on chart paper with the students or the teacher can complete the graphic organizer. Be sure to create a reference for students to have throughout the week. **TEACHER NOTE: Students should not answer the driving question at this time. Students will need to collect information, data and understanding from the phenomenon strategy, inquiry activity, investigation, text or video protocol and vocabulary strategy to develop a response in the claim-evidence-reasoning format. 1. Sound Stud. Samples.pdf The teacher or students should read over student sample(s) to	**Investigation Facilitation** **SEP Teacher Tip:** To support students with the science and engineering practices for this week, follow the guidance in this protocol: Developing model construction questions Provide constructive feedback for building a model Student back pocket questions **uConnect Lab** **How can a Ruler make a Sound?** **SAVAAS T.E. Page 4** Objective: Students investigate how a ruler makes sound. Have students follow the procedure provided in the lab. Students collaborate and make a plan to provide evidence that when a ruler vibrates, it makes a sound. Students will need and will use the student lab sheet for "How can a Ruler Make a Sound?" provided in their consumable book or the access to graphic organizer.	**Text Annotation Strategy** Have students read and annotate the following text: • **Sound** **TEACHER NOTE: The teacher should be signed in to SAVVAS Realize to access the link above. The links will be separated by headers. However, this will be one text available to the students. Use the links above to help navigate to the text for this week. The teacher should facilitate the following process. Have the students follow the text protocol facilitation directions provided in the following strategy: K-2 Text Annotation Prot… Students should complete the following student handout as they work through the text annotation protocol: K-2 Text Annotation Student Document (editable) K-2 Text Annotation Stu… During the teacher-led discussion, the teacher should ask the following questions: 1. **TEACHER NOTE: Read and review the annotation protocol prior to providing this lesson to students. Students will need to be placed in groups or have an understanding of how the	**Claim-Evidence-Reasoning** Students will write a response to the following driving question in the CER format. ***What happens when objects vibrate?*** Review the claim-evidence-reasoning poster with the students **TEACHER NOTE: Provide students with sentence starters by sharing on the board: K-2 Claim-Evidence-Rea… Have students write their claim-evidence-reasoning **Graphic Organizer** **Graphic Organizer- CER** Have students develop a claim which is their answer to the driving question. Students should use all their knowledge from the phenomenon, inquiry activity, investigation, and information analysis protocol to develop an answer to the question. **Writing evidence** Students should provide observational or numerical data as their evidence from their investigation and write a short caption or brief description of the data they provide to support their claim. **Writing the reasoning**

discussion with students to identify and explain when they have experienced sounds that are loud and soft. Have students demonstrate loud and soft sounds with the use of clapping their hands. **Support Advance Learners:** ask students to choose an instrument and think about how a musician could make loud and soft sounds. **Inquiry Activity (Second Option):** **Science 4 Us: Sound** **Science 4 Us Sound Engag…** **Student Materials:** **Student Science Journals** ****Teacher Note:** **Follow Guided Instructions Overview:** 1. **Introduce the online Engage activity to students, and identify the objective.** 2. **Initiate the online activity and complete the first Notebook prompt.** 3. **Show the animated video portion of the online activity.** 4. **Complete the second Notebook prompt.** 5. **Facilitate a conversation using the discussion prompts (and hints) that follow the second notebook prompt.**	analyze claim-evidence-reasoning protocol. Ask students to use the CER observations chart to complete the following analysis protocol: Claim-Evidence-Reasoning Record Observations Document (google doc) Claim-Evidence-Reasoning… (PDF) *1. Identify the student's claim in the sample and have the teacher or students write their observations or questions.* *2. Identify the student's evidence in the sample and have the teacher or students write their observations or questions.* *3. Identify the student's reasoning in the sample and have the teacher or students write their observations or questions.* Ask the following questions to students as they analyze the student samples: Claim-Evidence-Reasoning… **TEACHER NOTE: As students review the student samples, they will begin to see or read vocabulary. Begin or continue a reference chart of questions or observations about vocabulary. Students will explicitly learn vocabulary on Day 4.	**Graphic Organizer** **01_T1_uConnect_Lab** **Materials** plastic ruler safety goggles **TEACHER NOTE: One method students may find is to place a ruler flat on a desk with half of it extending off the desk. Students can then pull the end of the ruler so that it vibrates and makes a sound. Moving more of the ruler off the desk makes a lower sound. Another method is holding the center of the ruler and tapping an end on a desk. The vibrating ruler makes a sound. Holding it closer to the end that is tapped, makes a higher sound.	groups will change to limit time used for transitioning. **Vocabulary Strategy** **Vocabulary Words:** *physical attributes, color, size, shape, weight, and texture* **Understanding Vocabulary Strategy** Provide students with the graphic organizer (editable) or pdf handout, explaining its sections: word, antonym, synonym, picture, *in my own words* (meaning), and sentence Use a Think Aloud to demonstrate how to use the graphic organizer with one of the provided vocabulary words. The teacher should provide and post the meaning of the word for students to refer to. Allow students to work in collaborative groups to discuss an antonym and a synonym. The group should draw or provide/insert an image of the word based on their understanding, write the provided meaning in their own words and write a sentence using the vocabulary word. Have students collaborate, in groups, to complete the strategy for the other vocabulary terms.	Students will use textual evidence from the "text annotation graphic organizer" to generate the reasoning or justification in the CER format. **TEACHER NOTE: Have students review the student sample(s) of claim-evidence-reasoning on Day 2. Have students compare their writing to those students' samples. Ask the following questions: *How are your thoughts or understanding similar to another writer on the topic? How are your thoughts or understanding different to another writer on the topic? What would you like to learn more about? Why?* •

Week 2				
GSE:S1P1d		**Focused Concept: Describe Sound**		
Learning Targets:	**I can explain what happens when objects vibrate.** **I can describe sound.**			
Lab Safety and Materials:	**General Safety Practices for the Elementary Science Classroom- TOC.docx**			
Phenomenon: S1P1d.projectable.PNG			**DQ: What causes sound?**	
Day 1: Opening	**Day 2 : Guided Practice/ Transition**	**Day 3: Independent Practice**	**Day 4: Independent Practice**	**Day 5: Assessment / Summary**
Phenomenon Introduction Show students the phenomenon card : S1P1d.projectable.PNG **Extend: Ask students to look at their models and thinking recorded from last week. Is there anything they would change, improve, or add to their original idea.** Use the see, think wonder strategy to guide student thinking. The teacher should provide students opportunities to share observations and develop questions. The teacher should record students' observations on chart paper and refer back to initial student ideas throughout the week. **Inquiry Activity** **SEP Teacher Tip:** To support students with the science and engineering practices for this week, follow	**Introduce the Driving Question:** Have students review the driving question: ***What causes sound?*** Use the strategy to support students with making connections and understanding the driving question (DQ). Visualizing the Driving Question Click here to access question words reference chart The process can be recorded on chart paper with the students or the teacher can complete the graphic organizer. Be sure to create a reference for students to have throughout the week. **TEACHER NOTE: Students should not answer the driving question at this time. Students will need to collect information,	**Investigation Facilitation** **SEP Teacher Tip:** To support students with the science and engineering practices for this week, follow the guidance in this protocol: Developing model construction questions Provide constructive feedback for building a model Student back pocket questions **uInvestigate Lab** **How does size affect sound?** **SAVAAS T.E. Page 7** Objective: Students will investigate making different sounds by testing how the length of a straw affects sound. Have students follow the procedure provided in the lab. Students use a model of a pan flute (straws) to investigate the sound the different lengths of straws make.	**Text Annotation Strategy** Have students explore and read aloud: • **Sound** • **Pitch and Volume** **TEACHER NOTE: The teacher should be signed in to SAVVAS Realize to access the link above. The links will be separated by headers. However, this will be one text available to the students. Use the links above to help navigate to the text for this week. The teacher should facilitate the following process. Have the students follow the text protocol facilitation directions provided in the following strategy: K-2 Text Annotation Prot… Students should complete the following student handout as they work through the text annotation protocol: K-2 Text Annotation Student Document (editable)	**Claim-Evidence-Reasoning** Students will write a response to the following driving question in the CER format. ***What causes sound?*** Review the claim-evidence-reasoning poster with the students **TEACHER NOTE: Provide students with sentence starters by sharing on the board: K-2 Claim-Evidence-Rea… Have students write their claim-evidence-reasoning **Graphic Organizer** **Graphic Organizer- CER** Have students develop a claim which is their answer to the driving question. Students should use all their knowledge from the phenomenon, inquiry activity, investigation, and information analysis protocol to develop an answer to the question.

the guidance in this protocol:

Developing model construction questions

Provide constructive feedback for building a model

Student back pocket questions
SAVVAS TOPIC 1: Describe Sound
Use Jumpstart Discovery prompt on **SAVAAS Describe Sound Pg. 6**- Arrange the class into pairs or small groups. Explain to students they will make sounds with their voices.

The teacher should move among the groups of students and listen to sounds that students are making. Provide suggestions if necessary for ways students can change the sound of their voice, such as higher, lower, louder, softer.

Teachers should follow facilitation instructions and also use **ELD Support Activity (SAVAAS T.E pg. 6)**

data and understanding from the phenomenon strategy, inquiry activity, investigation, text or video protocol and vocabulary strategy to develop a response in the claim-evidence-reasoning format.

2. Sound Stud. Samples.pdf

The teacher or students should read over student sample(s) to analyze claim-evidence-reasoning protocol. Ask students to use the CER observations chart to complete the following analysis protocol:

Claim-Evidence-Reasoning Record Observations Document (google doc)

Claim-Evidence-Reasoni… (PDF)

1. Identify the student's claim in the sample and have the teacher or students write their observations or questions.

2. Identify the student's evidence in the sample and have the teacher or students write their observations or questions.

3. Identify the student's reasoning in the sample and have the teacher or students write their observations or questions.

Ask the following questions to students as they analyze the student samples:

Claim-Evidence-Reasoni…

Students will need and will use the student lab sheet for "How does size affect sound?" provided in their consumable book or the access to graphic organizer.

Graphic Organizer
01_T1_L1_uInvestigate_…

Materials
straws
tape
scissors
ruler

**TEACHER NOTE:
Make one pan flute ahead of time so that you have a model to show students, if necessary. This will also give you an opportunity to test the sounds of the straws. As a time saving step, you could cut the straws to the proper length before class.

K-2 Text Annotation Stu…

During the teacher-led discussion, the teacher should ask the following questions:

1. What do you feel if you lightly place your hand on a drum when the musician strikes the drum?
2. Why do you hear a sound when you strike a pencil against a desk?
3. Why is the sound different if you press your hand against the metal object before striking it with the ruler?

**TEACHER NOTE: Read and review the annotation protocol prior to providing this lesson to students. Students will need to be placed in groups or have an understanding of how the groups will change to limit time used for transitioning.

Vocabulary Strategy
Vocabulary Words:
pitch, volume, vibrate

Understanding Vocabulary Strategy

Provide students with the graphic organizer (editable) or pdf handout, explaining its sections: word, antonym, synonym, picture, *in my own words* (meaning), and sentence

Use a Think Aloud to demonstrate how to use the graphic organizer with one of

Writing evidence
Students should provide observational or numerical data as their evidence from their investigation and write a short caption or brief description of the data they provide to support their claim.

Writing the reasoning
Students will use textual evidence from the "text annotation graphic organizer" to generate the reasoning or justification in the CER format.

**TEACHER NOTE: Have students review the student sample(s) of claim-evidence-reasoning on Day 2. Have students compare their writing to those students' samples. Ask the following questions:

How are your thoughts or understanding similar to another writer on the topic? How are your thoughts or understanding different to another writer on the topic? What would you like to learn more about? Why?

	**TEACHER NOTE: As students review the student samples, they will begin to see or read vocabulary. Begin or continue a reference chart of questions or observations about vocabulary. Students will explicitly learn vocabulary on Day 4.		the provided vocabulary words. The teacher should provide and post the meaning of the word for students to refer to. Allow students to work in collaborative groups to discuss an antonym and a synonym. The group should draw or provide/insert an image of the word based on their understanding, write the provided meaning in their own words and write a sentence using the vocabulary word. Have students collaborate, in groups, to complete the strategy for the other vocabulary terms.	

Week 3				
GSE: S1P1d		**Focused Concept: Make Sound**		
Learning Targets:	**I can vibrate objects to make sound.** **I can show that sounds can make objects vibrate.**			
Lab Safety and Materials:	**General Safety Practices for the Elementary Science Classroom- TOC.docx**			
Phenomenon: S1P1e.printable.PNG			**DQ: How do you make sound?**	
Day 1: Opening	**Day 2 : Guided Practice/ Transition**	**Day 3: Independent Practice**	**Day 4: Independent Practice**	**Day 5: Assessment / Summary**
Phenomenon Introduction Show students the phenomenon card : S1P1e.printable.PNG	**Introduce the Driving Question:** Have students review the driving question:	**Investigation Facilitation** **SEP Teacher Tip:** To support students with the	**Text Annotation Strategy** Have students explore and read aloud • Making Sounds	**Assessment for Learning:** Have students complete the following assessment to conclude this week's lesson.

Use the see, think wonder strategy to guide student thinking.

The teacher should provide students opportunities to develop an idea for their device focusing only on sound at this time. Allow students to draw, label, give description to how their device would work focusing only on the device using sound at this time.
****COLLECT AND SAVE STUDENT IDEAS** They will build on these ideas the following week.**

Inquiry Activity

SEP Teacher Tip:

To support students with the science and engineering practices for this week, follow the guidance in this protocol:

Developing model construction questions

Provide constructive feedback for building a model

Student back pocket questions

SAVVAS TOPIC 1: Make Sound
Use Jumpstart Discovery prompt on **SAVAAS Describe Sound Pg. 12**

The teacher should demonstrate various methods they can try. Some people cup their hands and blow through a small space

How do you make sound?

Use the strategy to support students with making connections and understanding the driving question (DQ).

Visualizing the Driving Question

Click here to access question words reference chart

The process can be recorded on chart paper with the students or the teacher can complete the graphic organizer.

Be sure to create a reference for students to have throughout the week.

**TEACHER NOTE: Students should not answer the driving question at this time. Students will need to collect information, data and understanding from the phenomenon strategy, inquiry activity, investigation, text or video protocol and vocabulary strategy to develop a response in the claim-evidence-reasoning format.

3. Sound Stud. Samples.pdf

The teacher or students should read over student sample(s) to analyze claim-evidence-reasoning protocol. Ask students to use the CER observations chart to complete the following analysis protocol:

Claim-Evidence-Reasoning

science and engineering practices for this week, follow the guidance in this protocol:

Developing model construction questions

Provide constructive feedback for building a model

Student back pocket questions
uInvestigate Lab
How do you make sound?
SAVAAS T.E. Page 13

Objective: Students investigate ways that sound can make objects vibrate?

Students should gather evidence by observing how the sand moves when they make sound with their voices. The moving sand is evidence they use to support the idea that sound can make objects vibrate.

Students will need and will use the student lab sheet for "How can you see sound?" provided in their consumable book or the access to graphic organizer.

Graphic Organizer
01_T1_L2_uInvestigate_…

Materials
plastic cup
string
clear plastic wrap
sand
safety goggles

**TEACHER NOTE:
Cut the string and plastic wrap into pieces that will fit the cups you are using before the

- **Musical Sounds**
- **Making Music**

**TEACHER NOTE: The teacher should be signed in to SAVVAS Realize to access the link above. The links will be separated by headers. However, this will be one text available to the students. Use the links above to help navigate to the text for this week.

The teacher should facilitate the following process. Have the students follow the text protocol facilitation directions provided in the following strategy:

K-2 Text Annotation Prot…

Students should complete the following student handout as they work through the text annotation protocol:

K-2 Text Annotation Student Document (editable)
K-2 Text Annotation Stu…

During the teacher-led discussion, the teacher should ask the following questions:

1. How do the length of the strings on an instrument change the sound the instrument makes?
2. How do you make sound with a wind instrument?
3. In what way are string instruments, wind instruments, and percussion instruments alike in how they make sound?

Facilitate student assessment: The teacher will inform students that take the test online: Answer each question carefully. After you submit your assignment, you won't be able to change your answers.

The test can be administered via laptop by assigning Topic Quiz: SAVVAS Topic Sound Make Sound Quiz
01_T1_L2_Quiz

****TEACHER NOTE****
To analyze student results, follow the Topic Test: Light Assessment and Remediation Instructions, Error Analysis, and Assessment Rubric**.**

between their side-by-side thumbs. Others blow through a small space between their lips. Remind students they can only make sounds if something vibrate.

Teachers should follow facilitation instructions and also use **ELD Support Activity (SAVAAS T.E pg. 12)**

Record Observations Document (google doc)

Claim-Evidence-Reasoni… (PDF)

1. Identify the student's claim in the sample and have the teacher or students write their observations or questions.

2. Identify the student's evidence in the sample and have the teacher or students write their observations or questions.

3. Identify the student's reasoning in the sample and have the teacher or students write their observations or questions.

Ask the following questions to students as they analyze the student samples:

Claim-Evidence-Reasoni…

**TEACHER NOTE: As students review the student samples, they will begin to see or read vocabulary. Begin or continue a reference chart of questions or observations about vocabulary. Students will explicitly learn vocabulary on Day 4.

activity.

**TEACHER NOTE: Explain to students that one way to think about evidence is that it answers the question "how do you know". For this lab, encourage students to answer the question, "how do you know the sand is evidence of sound?".

**TEACHER NOTE: Read and review the annotation protocol prior to providing this lesson to students. Students will need to be placed in groups or have an understanding of how the groups will change to limit time used for transitioning.

Vocabulary Strategy
Vocabulary Words:
percussion

Understanding Vocabulary Strategy

Provide students with the graphic organizer (editable) or pdf handout, explaining its sections: word, antonym, synonym, picture, *in my own words* (meaning), and sentence

Use a Think Aloud to demonstrate how to use the graphic organizer with one of the provided vocabulary words. The teacher should provide and post the meaning of the word for students to refer to.

Allow students to work in collaborative groups to discuss an antonym and a synonym. The group should draw or provide/insert an image of the word based on their understanding, write the provided meaning in their own words and write a sentence using the vocabulary word.

Have students collaborate, in groups, to complete the strategy for the other vocabulary terms.

Week 4				
GSE: S1P1d		**Focused Concept: Communicating with Sound**		
Learning Target:	**I can identify how people use sounds.**			
Lab Safety and Materials:	**General Safety Practices for the Elementary Science Classroom- TOC.docx**			
Phenomenon: S1P1e.printable.PNG			**DQ: How can I use sound to communicate over a distance?**	
Day 1: Opening	**Day 2 : Guided Practice/ Transition**	**Day 3: Independent Practice**	**Day 4: Independent Practice**	**Day 5: Assessment / Summary**
Phenomenon Introduction Show students the phenomenon card : S1P1e.printable.PNG Use the see, think wonder strategy to guide student thinking. The teacher should allow students time to improve on their model. Allow students to share their ideas with partners or in small groups. Facilitate a discussion that allows small groups to add to their original ideas. Provide students time to build on, improve, or change their ideas. **Inquiry Activity** **SEP Teacher Tip:** To support students with the science and engineering practices for this week, follow	**Introduce the Driving Question:** Have students review the driving question: **How can I use sound to communicate over a distance?** Use the strategy to support students with making connections and understanding the driving question (DQ). Visualizing the Driving Question Click here to access question words reference chart The process can be recorded on chart paper with the students or the teacher can complete the graphic organizer. Be sure to create a reference for students to have throughout the	**Investigation Facilitation** **SEP Teacher Tip:** To support students with the science and engineering practices for this week, follow the guidance in this protocol: Developing model construction questions Provide constructive feedback for building a model Student back pocket questions **uInvestigate Lab** **What does that sound say?** **SAVAAS T.E. Page 21** Objective: Students will use morse code to create a word. Students construct an explanation about how they communicated a message using	**Text Annotation Strategy** Have students explore and read aloud • **Using Sounds** • **Communicating with Sound** **TEACHER NOTE: The teacher should be signed in to SAVVAS Realize to access the link above. The links will be separated by headers. However, this will be one text available to the students. Use the links above to help navigate to the text for this week. The teacher should facilitate the following process. Have the students follow the text protocol facilitation directions provided in the following strategy: K-2 Text Annotation Prot… Students should complete the	**Claim-Evidence-Reasoning** Students will write a response to the following driving question in the CER format. ***How can I use sound to communicate over a distance?*** Review the claim-evidence-reasoning poster with the students **TEACHER NOTE: Provide students with sentence starters by sharing on the board: K-2 Claim-Evidence-Rea… Have students write their claim-evidence-reasoning **Graphic Organizer** **Graphic Organizer- CER** Have students develop a claim which is their answer to the driving question. Students should use all their knowledge

the guidance in this protocol: Developing model construction questions Provide constructive feedback for building a model Student back pocket questions **SAVVAS TOPIC 1: Uses of Sound** Use Jumpstart Discovery prompt on **SAVAAS Uses of Sound T.E. Pg. 20** The teacher should guide students in summarizing what they have learned so far about sound and preview what they will learn in this lesson. Teachers should follow facilitation instructions and also use **ELD Support Activity (SAVAAS T.E pg. 20)** **6.**	week. **TEACHER NOTE: Students should not answer the driving question at this time. Students will need to collect information, data and understanding from the phenomenon strategy, inquiry activity, investigation, text or video protocol and vocabulary strategy to develop a response in the claim-evidence-reasoning format. 4. Sound Stud. Samples.pdf The teacher or students should read over student sample(s) to analyze claim-evidence-reasoning protocol. Ask students to use the CER observations chart to complete the following analysis protocol: Claim-Evidence-Reasoning Record Observations Document (google doc) Claim-Evidence-Reasoni… (PDF) *1. Identify the student's claim in the sample and have the teacher or students write their observations or questions.* *2. Identify the student's evidence in the sample and have the teacher or students write their observations or questions.* *3. Identify the student's reasoning in the sample and have the teacher or students write their observations or questions.*	Morse Code. They consider how they can use various instruments to make long and short sounds to send a message. Students will need and will use the student lab sheet for "What does sound say?" provided in their consumable book or the access to the graphic organizer. **Graphic Organizer** **01_T1_L3_uInvestigate_…** **Materials** (Suggested Materials) Keyboard digital chimes drumsticks Morse Code Google Chrome Music Lab **TEACHER NOTE: Produce a large poster with Morse Code on it for students to use, or provide each group with a copy of the code. **TEACHER NOTE: Students will find that sounds made by instruments with keys or buttons can vary depending on how long they hold down the key.	following student handout as they work through the text annotation protocol: K-2 Text Annotation Student Document (editable) K-2 Text Annotation Stu… During the teacher-led discussion, the teacher should ask the following questions: 1. Why would using drums be better for sending a message a long distance than shouting? 2. Is television a way that people communicate? Explain why or why not? 3. Why did messages have to be simple when using early forms of sound communication? **TEACHER NOTE: Read and review the annotation protocol before providing this lesson to students. Students will need to be placed in groups or understand how the groups will change to limit the time used for transitioning. **Vocabulary Strategy** **Vocabulary Words:** *communicate* **Understanding Vocabulary Strategy** Provide students with the graphic organizer (editable) or pdf handout, explaining its sections: word, antonym, synonym, picture, *in my own*	from the phenomenon, inquiry activity, investigation, and information analysis protocol to develop an answer to the question. **Writing evidence** Students should provide observational or numerical data as their evidence from their investigation and write a short caption or brief description of the data they provide to support their claim. **Writing the reasoning** Students will use textual evidence from the "text annotation graphic organizer" to generate the reasoning or justification in the CER format. **TEACHER NOTE: Have students review the student sample(s) of claim-evidence-reasoning on Day 2. Have students compare their writing to those students' samples. Ask the following questions: *How are your thoughts or understanding similar to another writer on the topic? How are your thoughts or understanding different to another writer on the topic? What would you like to learn more about? Why?*

	Ask the following questions to students as they analyze the student samples: Claim-Evidence-Reasoni… **TEACHER NOTE: As students review the student samples, they will begin to see or read vocabulary. Begin or continue a reference chart of questions or observations about vocabulary. Students will explicitly learn vocabulary on Day 4.		*words* (meaning), and sentence Use a Think Aloud to demonstrate how to use the graphic organizer with one of the provided vocabulary words. The teacher should provide and post the meaning of the word for students to refer to. Allow students to work in collaborative groups to discuss an antonym and a synonym. The group should draw or provide/insert an image of the word based on their understanding, write the provided meaning in their own words and write a sentence using the vocabulary word. Have students collaborate, in groups, to complete the strategy for the other vocabulary terms.	

Week 5				
GSE: S1P1d		**Focused Concept: Sending sound over a distance**		
Learning Target:	**I can investigate vibrations as a source of sound.**			
Lab Safety:	**General Safety Practices for the Elementary Science Classroom- TOC.docx**			
Phenomenon: Mystery Science: Cartoon Sound Effects		**DQ: Where do sounds come from?**		
Day 1: Opening	**Day 2 : Guided Practice/ Transition**	**Day 3: Independent Practice**	**Day 4: Independent Practice**	**Day 5: Assessment / Summary**

Phenomenon Introduction
Show students the phenomenon card :
Mystery Science: How do they make silly sounds in cartoons?
Exploration: Video for Sound Effects

The teacher should follow the video instructions. Students will explore "Bring a Sound Effect Artist" video. Allow students to stop and talk at various points following question prompts. The teacher should facilitate discussions within the activity to allow students to use prior knowledge, note possible misconceptions, and share out their ideas and questions.

Inquiry Activity

SEP Teacher Tip:

To support students with the science and engineering practices for this week, follow the guidance in this protocol:

Developing model construction questions

Provide constructive feedback for building a model

Student back pocket questions

Mystery Science: How do they make silly sounds in cartoons?
Hands-On Activity: Thunderstorm

The teacher should want a way to make thunder. It's fun to add the rumble and crash of thunder and is another visible

Introduce the Driving Question:

Have students review the driving question:

Where do sounds come from?

Use the strategy to support students with making connections and understanding the driving question (DQ).

Visualizing the Driving Question

Click here to access question words reference chart

The process can be recorded on chart paper with the students or the teacher can complete the graphic organizer.

Be sure to create a reference for students to have throughout the week.

**TEACHER NOTE: Students should not answer the driving question at this time. Students will need to collect information, data and understanding from the phenomenon strategy, inquiry activity, investigation, text or video protocol and vocabulary strategy to develop a response in the claim-evidence-reasoning format.

Use a student sample developed in Day 5 of Week 4 to provide as a sample this week.

The teacher or students should read over student sample(s) to

Investigation Facilitation

SEP Teacher Tip:

To support students with the science and engineering practices for this week, follow the guidance in this protocol:

Developing model construction questions

Provide constructive feedback for building a model

Student back pocket questions

SAVVAS uEngineer it
ALERT! ALERT!
SAVAAS T.E. Page 26

Objective: Students will improve the design of a smart phone's bad weather alert.

Assign **SAVAAS Interactivity: Notify the Residents** or complete activity together before beginning the engineering process.
SAVAAS Interactivity: Notify the Residents: Have students complete screens 1 and 2 (or complete together) to learn about the activity. If students have difficulty answering questions on screen 3, the teacher should discuss with students the different types of alerts they might experience in their own lives, such as weather alerts, emergency alerts, and time alerts. After viewing screen 5, discuss what each of the four alert options mean.

SAVVAS Improve It T.E. pg.

Text Annotation Strategy

Have students explore and read aloud **Mystery Science- Where Do Sounds Come From? Digital Book**

Digital Book

The teacher should facilitate the following process. Have the students follow the text protocol facilitation directions provided in the following strategy:

K-2 Text Annotation Prot…

Students should complete the following student handout as they work through the text annotation protocol:

K-2 Text Annotation Student Document (editable)
K-2 Text Annotation Stud…

During the teacher-led discussion, the teacher should ask the following questions:

1. How is the guitar making sound?
2. What do you think will happen to the music when Lin touches the guitar strings? Explain your answer.
3. Where does sound come from when we talk?

**TEACHER NOTE: Read and review the annotation protocol prior to providing this lesson to students. Students will need to be placed in groups or have an understanding of how the groups will change to limit time

Claim-Evidence-Reasoning

Students will write a response to the following driving question in the CER format.

Where do sounds come from?

Review the claim-evidence-reasoning poster with the students

**TEACHER NOTE: Provide students with sentence starters by sharing on the board:
K-2 Claim-Evidence-Rea…

Have students write their claim-evidence-reasoning **Graphic Organizer**
Graphic Organizer- CER
Have students develop a claim which is their answer to the driving question, claim. Students should use all their knowledge from the phenomenon, inquiry activity, investigation, and information analysis protocol to develop an answer to the question.

Writing evidence
Students should provide observational or numerical data as their evidence from their investigation and write a short caption or brief description of the data they provide to support their claim.

Writing the reasoning
Students will use textual evidence from the "text annotation graphic organizer" to generate the reasoning or justification in the CER format.

demonstration of vibration creating sound. Watch this video to see how to use the optional items to make thunder.

Inquiry Activity Continued

The teacher should use facilitation instructions for students to create their own sound effects. Students will need a ruler and to follow the directions provided. Once students complete the activity, allow them to try creating a different sound with the rulers to go with the bouncing ball cartoon. Allow students to share what they noticed, how sound is created to make sound effects. Have students dictate their responses on the graphic organizer:

Sound Effects Inquiry Ac…

analyze claim-evidence-reasoning protocol. Ask students to use the CER observations chart to complete the following analysis protocol:

Claim-Evidence-Reasoning Record Observations Document (google doc)

Claim-Evidence-Reasoni… (PDF)

1. Identify the student's claim in the sample and have the teacher or students write their observations or questions.

2. Identify the student's evidence in the sample and have the teacher or students write their observations or questions.

3. Identify the student's reasoning in the sample and have the teacher or students write their observations or questions.

Ask the following questions to students as they analyze the student samples:

Claim-Evidence-Reasoni…

**TEACHER NOTE: As students review the student samples, they will begin to see or read vocabulary. Begin or continue a reference chart of questions or observations about vocabulary. Students will explicitly learn vocabulary on Day 4.

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Materials

Student Journals

**TEACHER NOTE:

Students demonstrate how to analyze a solution and figure out a way to improve it based on certain criteria. The teacher should have a smartphone available for demonstrating alert sounds for students- consider Flash Flooding Alert, Amber Alert, etc. Have students write responses to the following questions to help them develop and improve their thinking for an alert.

1. What kind of weather is the alert for?
2. What will the alert sound like?
3. Will there be follow-up alerts?

used for transitioning.

Vocabulary Strategy

Vocabulary Words:

vibrate

Understanding Vocabulary Strategy

Provide students with the graphic organizer (editable) or pdf handout, explaining its sections: word, antonym, synonym, picture, *in my own words* (meaning), and sentence

Use a Think Aloud to demonstrate how to use the graphic organizer with one of the provided vocabulary words. The teacher should provide and post the meaning of the word for students to refer to.

Allow students to work in collaborative groups to discuss an antonym and a synonym. The group should draw or provide/insert an image of the word based on their understanding, write the provided meaning in their own words and write a sentence using the vocabulary word.

Have students collaborate, in groups, to complete the strategy for the other vocabulary terms.

**TEACHER NOTE: Have students review the student sample(s) of claim-evidence-reasoning on Day 2. Have students compare their writing to those students' samples. Ask the following questions:

How are your thoughts or understanding similar to another writer on the topic? How are your thoughts or understanding different to another writer on the topic? What would you like to learn more about? Why?

Week 6				
GSE: S1P1d		**Focused Concept: Sound Review**		
Learning Target:	**I can describe sound.**			
Lab Safety:	**General Safety Practices for the Elementary Science Classroom- TOC.docx**			
Phenomenon:		**DQ: What happens when objects vibrate?**		
Day 1: Opening	**Day 2 : Guided Practice/ Transition**	**Day 3: Independent Practice**	**Day 4: Independent Practice**	**Day 5: Assessment / Summary**
Anchoring Phenomenon: **Answer the essential question: What happens when objects vibrate?** **Turn to a partner. Make an object around you vibrate. Take turns describing the sound.** Use the see, think wonder strategy to guide student thinking. Teachers should provide students opportunities to share observations and develop questions. The teacher should record students' observations on chart paper and refer back to initial student ideas throughout the week. **Inquiry Activity** **SEP Teacher Tip:** To support students with the	**Introduce the Driving Question:** Have students review the driving question: ***What happens when objects vibrate?*** Use the strategy to support students with making connections and understanding the driving question (DQ). Visualizing the Driving Question Click here to access question words reference chart The process can be recorded on chart paper with the students or the teacher can complete the graphic organizer. Be sure to create a reference for students to have throughout the week. **TEACHER NOTE: Students should not answer the driving	**Review the Driving Question:** **What happens when objects vibrate?** **Investigation Facilitation** **SEP Teacher Tip:** To support students with the science and engineering practices for this week, follow the guidance in this protocol: Developing model construction questions Provide constructive feedback for building a model Student back pocket questions **uDemonstrate Lab: How do the spines of a cacti help them? (SAVAAS Living Things Assessment- T.E. pg. 182)** Have students follow the procedure provided in the lab. **Objective:** Students will design	**Text Annotation Strategy** Have students read and annotate the following text: **All About Sound** **TEACHER NOTE: The teacher should be signed in to SAVVAS Realize to access the link above. The links will be separated by headers. However, this will be one text available to the students. Use the links above to help navigate to the text for this week. The teacher should facilitate the following process. Have the students follow the text protocol facilitation directions provided in the following strategy: K-2 Text Annotation Protoc… Students should complete the following student handout as they work through the text annotation protocol:	**Assessment for Learning:** Have students complete the following assessment. (Download and create a pdf for printing and online editable document) **SAVVAS Topic: Sound Assessment** Facilitate student assessment: The test can be administered via laptop by assigning Topic Test: Living Things or use Topic Test Assessment: The topic test facilitation instructions: SAVAAS T.E. pg. 178-182. **TEACHER NOTE: Follow Topic Test: Living Things **Assessment and Remediation Insturctions**,

science and engineering practices for this week, follow the guidance in this protocol: Developing model construction questions Provide constructive feedback for building a model Student back pocket questions **Play Topic: Sound Show What You Know: Partner Talk- Students have a discussion with partners or small groups reviewing their description of sound. (SAVAAS Sound T.E. pg. 30)** Optional: Allow students to explore **SAVAAS Interactivities from Topic: Sound** **Lesson 1: Sound of Sounds** **Lesson 2: Length and Sound**	question at this time. Students will need to collect information, data and understanding from the phenomenon strategy, inquiry activity, investigation, text or video protocol and vocabulary strategy to develop a response in the claim-evidence-reasoning format. **Use a student sample created within this unit to provide as a sample this week.** The teacher or students should read over student sample(s) to analyze claim-evidence-reasoning protocol. Ask students to use the CER observations chart to complete the following analysis protocol: Claim-Evidence-Reasoning Record Observations Document (google doc) Claim-Evidence-Reasoning… (PDF) *1. Identify the student's claim in the sample and have the teacher or students write their observations or questions.* *2. Identify the student's evidence in the sample and have the teacher or students write their observations or questions.* *3. Identify the student's reasoning in the sample and have the teacher or students write their observations or questions.* Ask the following questions to students as they analyze the student samples:	and build the model of a cactus **Graphic Organizer** Students will need and will use the student lab sheet for provided in their consumable book or the access to the activity sheet: **Materials** **TEACHER NOTE: Use this lab as a performance based assessment. Students should be able to demonstrate mastery of the standard.	K-2 Text Annotation Student Document (editable) K-2 Text Annotation Stude… During the teacher-led discussion, the teacher should ask the following questions: 1. **How much air do you need to shout and how much air do you need to whisper?** 2. **What kind of string makes a high sound when it vibrates?** 3. **What kind of sound does a thin string make?** **TEACHER NOTE: Read and review the annotation protocol prior to providing this lesson to students. Students will need to be placed in groups or have an understanding of how the groups will change to limit time used for transitioning. **Vocabulary Strategy** **Vocabulary Words:** *Voice* *Vocal Chords* *high sound* *low sound* vocal chords **Understanding Vocabulary Strategy** Provide students with the graphic organizer (editable) or pdf handout, explaining its sections: word, antonym, synonym, picture, *in my own words* (meaning), and	**Error Analysis, and Assessment Rubric** to analyze student results.

	Claim-Evidence-Reasoning… **TEACHER NOTE: As students review the student samples, they will begin to see or read vocabulary. Begin or continue a reference chart of questions or observations about vocabulary. Students will explicitly learn vocabulary on Day 4.		sentence Use a Think Aloud to demonstrate how to use the graphic organizer with one of the provided vocabulary words. The teacher should provide and post the meaning of the word for students to refer to. Allow students to work in collaborative groups to discuss an antonym and a synonym. The group should draw or provide/insert an image of the word based on their understanding, write the provided meaning in their own words and write a sentence using the vocabulary word. Have students collaborate, in groups, to complete the strategy for the other vocabulary terms. Allow groups to share their thinking through academic dialogue and compare their completed task with members of other groups.	

Assessment Prep

Prepare students for assessment by reviewing the following Assessment Prep Presentation.

Provide the following guidance:

Ask the students to use what they know about the tasks completed to answer the provided assessment prep question.

- What is the question asking you?
- What do you know about the vocabulary or concept in the question?
- Is this question similar to any investigations or tasks we've completed?
- How can what you've done help you answer this question?

- Just view the assessment question: What is the question asking you?

Guide students to think about how their experience connects to the question.
Using the answer choices provided, ask the students the following:

- Identify a wrong answer: How do I know this answer is incorrect?
- Identify the right answer: How do we know this answer is correct?

Allow the students time to discuss in collaborative groups.

TEACHER NOTE: If students struggle with the question, review it the next day. Do not rush to the next question; instructional time is the only time they have to prepare for the end-of-year assessment.

Labs / Investigations

Mandatory Labs	Explore Learning	Mystery Science
SAVAAS uConnect Lab: How can a Ruler make a Sound? **SAVAAS uInvestigate Lab: What does that sound say?** **SAVAAS uInvestigate Lab: How does size affect sound?**	**Science 4 Us: Sound** **Science 4 Us Sound Engage.pdf**	Mystery Science: How do they make silly sounds in cartoons? **Exploration: Video for Sound Effects**

Additional- Resources/Tasks

Supplemental Labs	**SAVAAS Interactivities from Topic: Sound** **Lesson 1: Sound of Sounds** **Lesson 2: Length and Sound**
Culminating Performance Task	**CER Where do Sounds come From?** **CER How can I use sound to communicate over a distance?** **CER What causes sound?** **CER What happens when objects vibrate?**
STEM Activities	**SAVVAS uEngineer it! ALERT! ALERT!**