



# DIY Hydrophone

Grades  
K-2

Student Activity Workbook

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Engineering  
Notebook



Seaworthy STEM™ in a Box Series

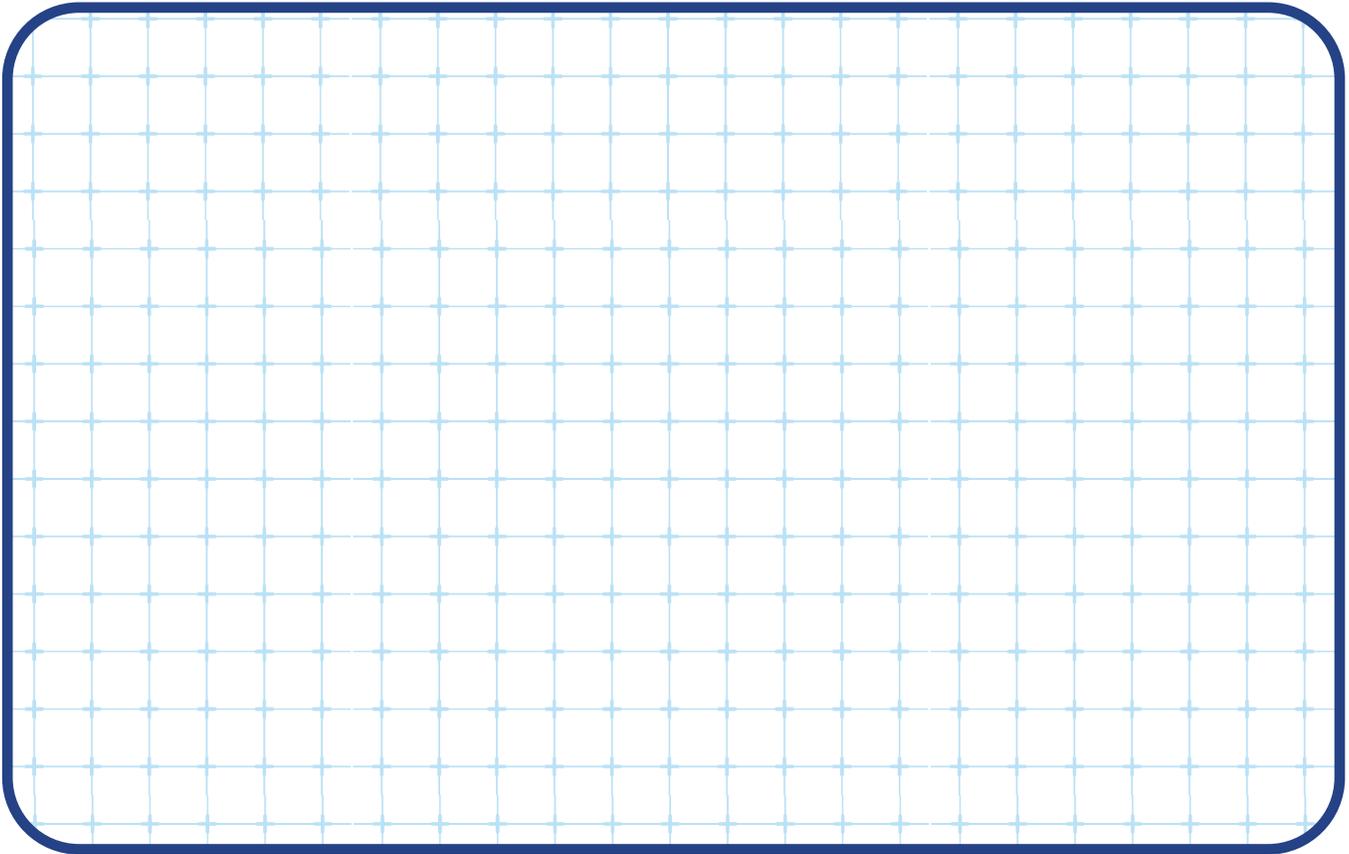
# DIY Hydrophone

## Fun Fact!

- 1 Before starting your experiment, draw your DIY hydrophone and how you have placed the hydrophone in the water.



Sonar is used to identify, track, and navigate safely in the ocean. With advances in technology, newer-generation submarines are extremely quiet and hard to detect in the noisy ocean environment due to new technology in engineering design.



## Fun Fact!

The DDG 1000 is one of the newest naval ships! Its sleek shape is not only cool to look at but purposefully designed this way! The composite superstructure significantly reduces radar cross section and other signatures, making the ship harder to detect by enemies at sea.



2 Inside each box, draw and label what objects you tested with your hydrophone. Under sound, use the text box below and describe the sound you heard when the object hit the bottom of the container.

<p>Object 1</p> <hr/> <p style="text-align: center;">Sound:</p> <hr/>	<p>Object 2</p> <hr/> <p style="text-align: center;">Sound:</p> <hr/>	<p>Object 3</p> <hr/> <p style="text-align: center;">Sound:</p> <hr/>
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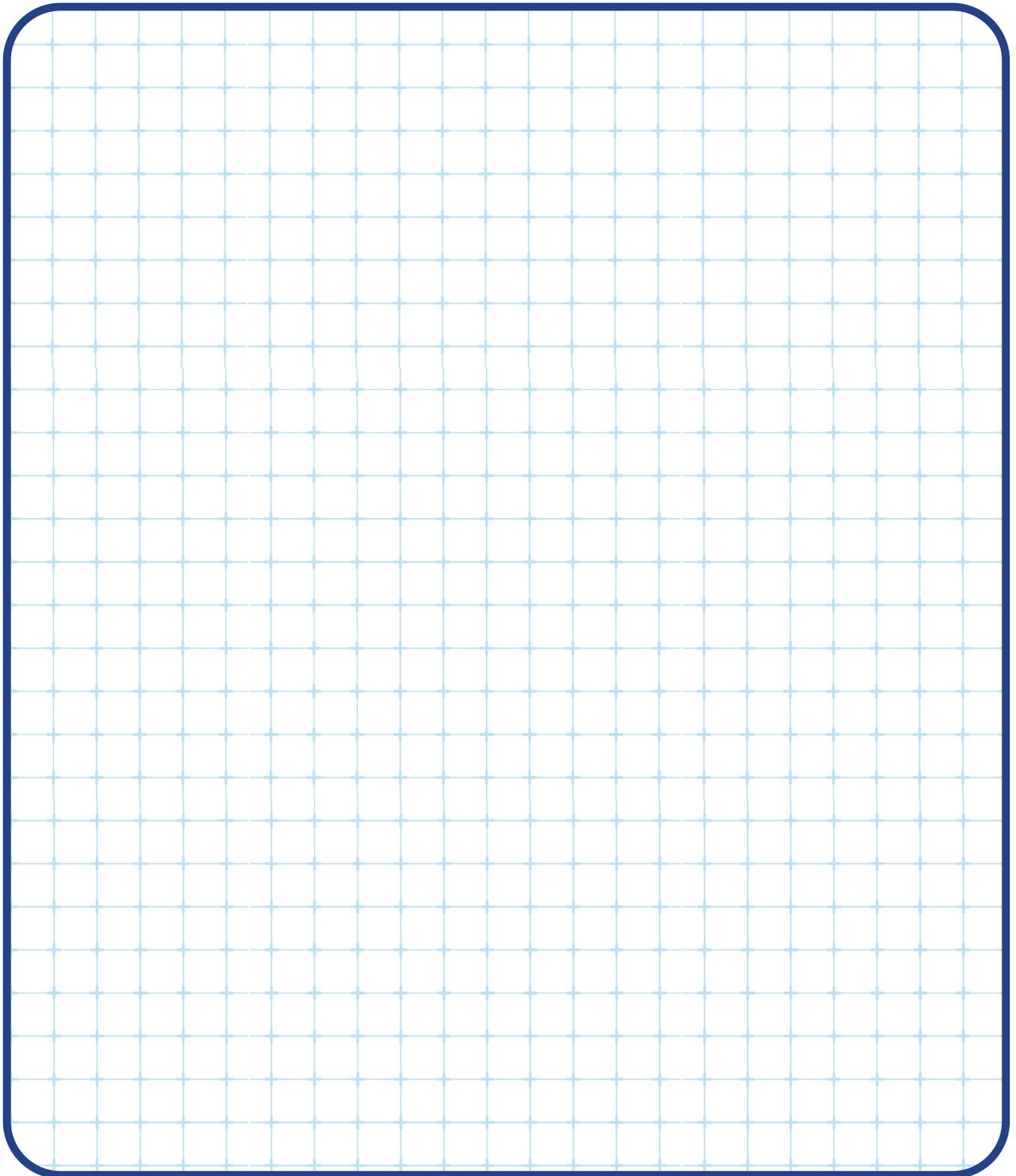
Text Box:

Soft	Quiet	Loud	Gentle	Silent
High	Low	Explosive	Faint	Sharp



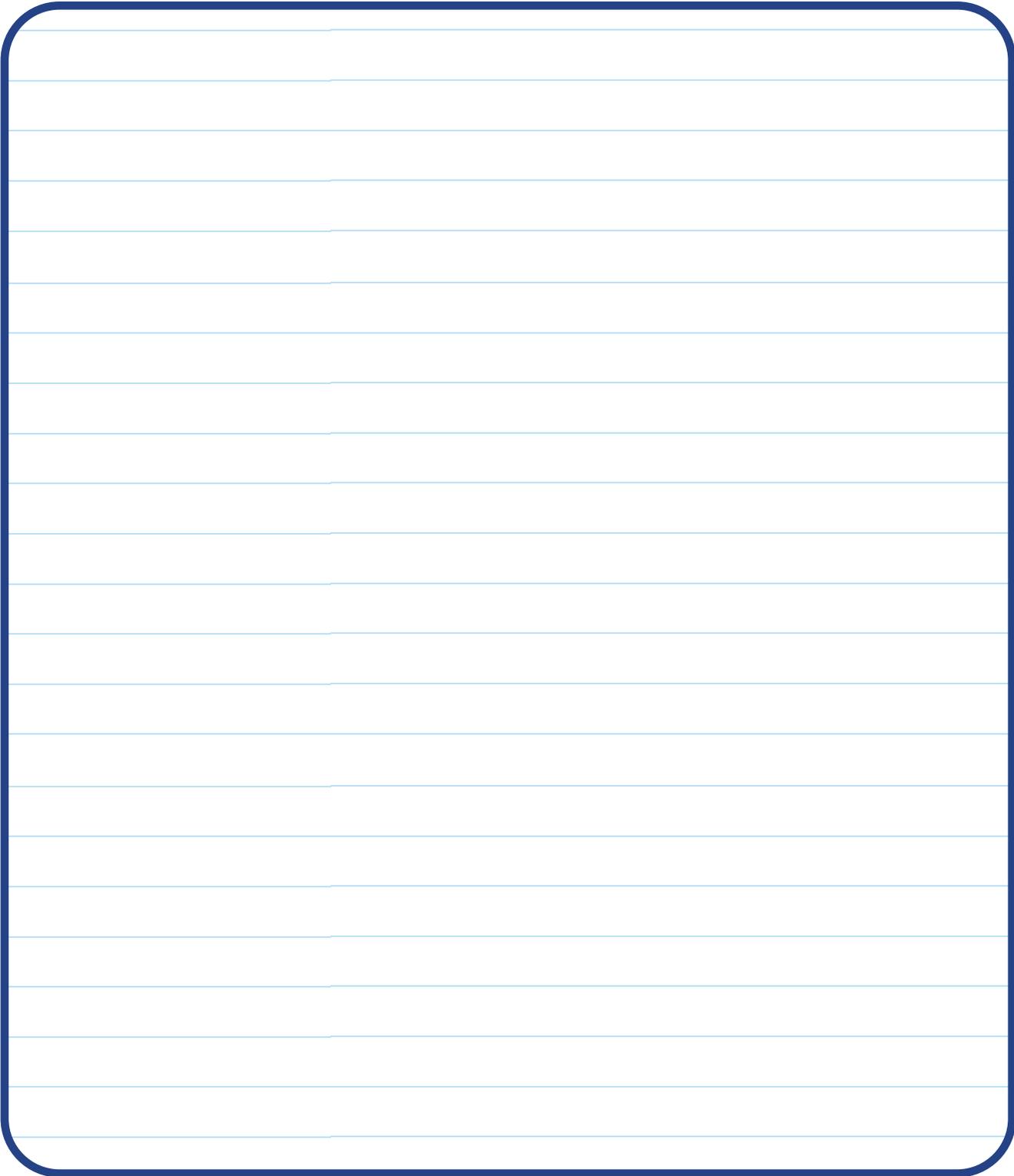
**Fun Fact!**  
The first hydrophone was invented in 1914. It was designed as a way to locate icebergs following the Titanic disaster.

- 3 Listen to the sounds being made when objects are dropped. How do you think sound waves move in the water and through the hydrophone? In the box below, sketch you listening to the sounds in the water. Then draw how you think the sound waves travel to your ear.

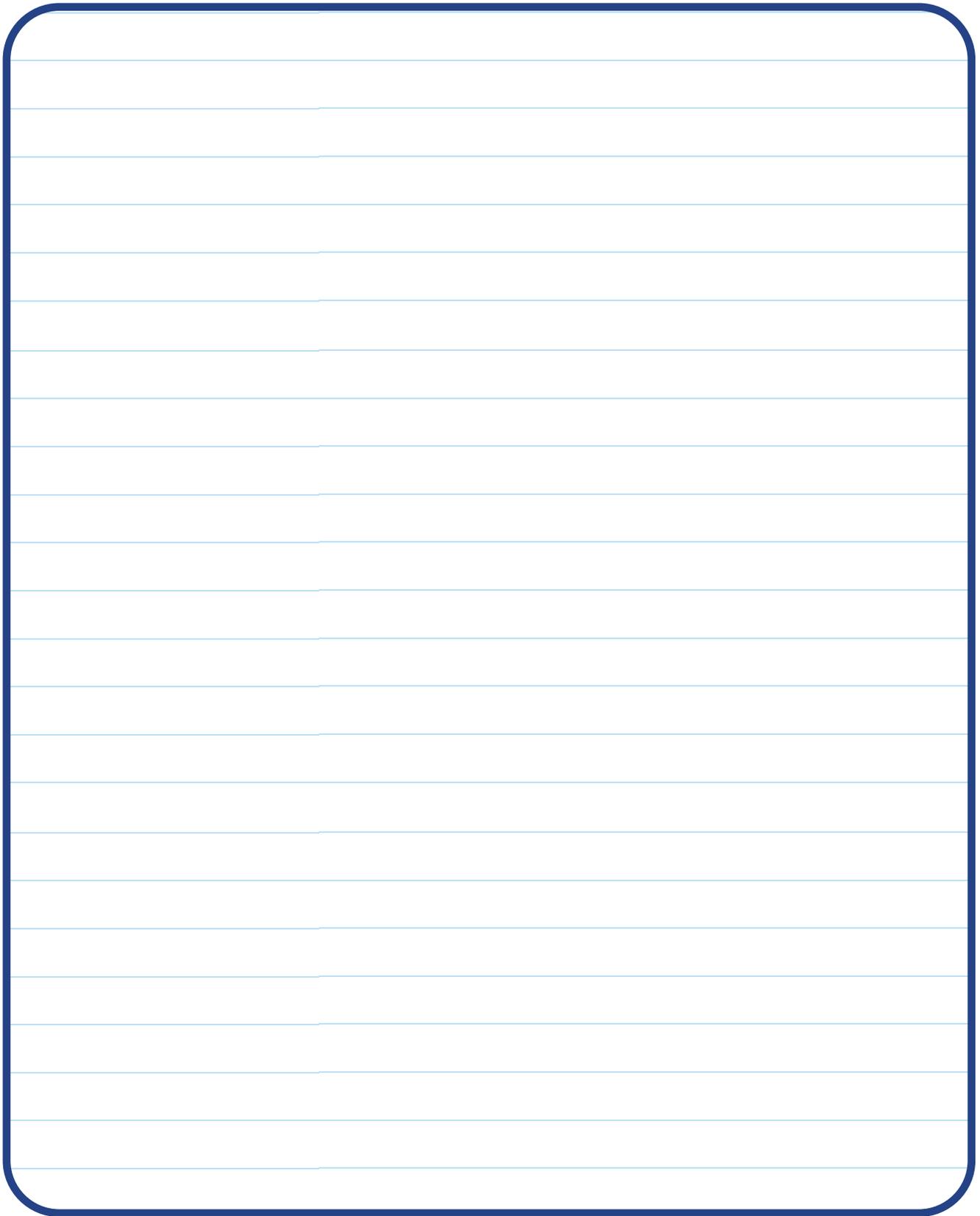


### Extension Activity:

4 Use your plastic cup telephone with a partner. Say "telephone" softly into the cup. Then say "telephone" in a normal volume into your cup. Could your partner hear you? Which was louder: the first word or the second word? Why do you think this happened?



**5** Do you think the sound waves from your first or second word had more energy? Why?





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# DIY Hydrophone Engineering Notebook



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