

A1. Making Predictions

In your notebook, record your prediction:

- What would you expect to see if you looked closely at another object besides the speaker, like a musical instrument, while it is making sounds?
- Do you think that instruments move back and forth when they make sounds, like the speaker does?

B1. Exploring Musical Instruments

We will have the opportunity to observe a number of different musical instruments making sounds.

In your notebook:

1. Create an observation table like the one below.
2. In the left column, record the names of the instruments you observe.
3. In the right column, record observations that you make as you watch and touch the instrument while it's making sounds.
4. For each new instrument, make a new row in your observation table to record your observations.

Data source	Observations

B2. Analyzing Our Data

In your notebook, use the observations you made in the observation table from the previous step to respond to the following questions:

- What patterns or similarities did you notice in how the different objects you observed moved while they were making sounds?
- Why do you think all these objects continued to move even after the thing that initially plucked or struck them was no longer touching them?

When you have responded to these questions, share your ideas with a partner.

C1. Comparing and Sharing Noticings

- What was similar about the motion of different instruments while they made sounds? What was different?
- What type of shape changes did we see in objects when they were struck or plucked?
- How did the shape of objects keep changing after we were done striking or plucking them?

D1. Building a Consensus Model

In your notebook:

1. Create a four-column table like the one shown below. Leave a lot of room to draw in each box. The table has no headings on purpose.
2. Title this table with a question: **How does an object move when it's vibrating?**

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D2. Building a Consensus Model

Use this table to construct a model of how an object moves when it makes sounds. Each box in the table, from left to right, will represent how the shape of a drum changes over time as it is making sounds.

- The first box will be the drum before the sound.
- The second box will be as the stick hits the drum.
- The third box will be what happens after the stick hits the drum.
- The last box will be what happens after a little while.

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D3. Home Learning

For home learning, draw another table in your notebook and repeat the model we just made for a different instrument that you observed during the lesson, like the guitar.

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E1. Scientists Circle

- What's similar about how these different instruments act when they're making sounds?
- What patterns do we see across the different instruments we observed?

E2. Adding to the Model Tracker

Add your new understandings to your Model Tracker. Complete the Model Tracker for Lesson 3, which should be taped in your notebook.

Lesson question	Evidence	What did we figure out?	How can we represent this?
What are the affordances and limitations of sharing a model tracker this way?			

F1. Making Predictions

In your notebook, record your prediction:

- Do you think all objects, even ones that aren't musical instruments, vibrate when they make sounds?

When you have responded to this question, share your ideas with a partner.

F2. Sharing Predictions

- Do all objects change shape (vibrate back and forth) when they make sounds?
- Do all objects, even ones that aren't musical instruments, exhibit this springy behavior when they are pushed or pulled?
- Would a solid object, like a table or the floor, vibrate back and forth when it makes a sound?