

Count the little wiggles

How Speakers Turn Waves Into Sound

Name _____

Date _____

Show your thinking with numbers, marks, or words.

1. Little marks 27 cone wiggles, then 36 more. How many wiggles are marked?

$$27 + 36 = \underline{\hspace{2cm}}$$

Show your thinking.

2. Of 64 rice grains on the drum, 28 hop during a gentle tap. How many stay still?

$$64 - 28 = \underline{\hspace{2cm}}$$

Show your thinking.

3. Big records 38 drum taps on one page and 45 on another. How many taps are recorded?

$$38 + 45 = \underline{\hspace{2cm}}$$

Show your thinking.

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4. Little draws 72 waves and colors 46 of them. How many waves are left to color?

$$72 - 46 = \underline{\hspace{2cm}}$$

Show your thinking.

5. A speaker drawing shows 46 wire loops, then Little adds 29. How many loops are drawn?

$$46 + 29 = \underline{\hspace{2cm}}$$

Show your thinking.

6. A notebook has 91 cup-phone turns planned and 57 finished. How many turns remain?

$$91 - 57 = \underline{\hspace{2cm}}$$

Show your thinking.

A wiggle begins

sound?

Little heard a note from the speaker. A wiggly electric signal made something move. Could the notebook's smooth wave become a



Push, then pull

cone moved back and forth.

A wire coil sat near a magnet. The changing signal made it push and pull. The attached paper



A tiny hop

visible.

Little hummed near the rice bowl. Big gently tapped its side. The tight wrap vibrated, and rice hopped.

A small motion became



Two kinds of change

kept the taps gentle.

Rice hopped on the vibrating drumhead too. Faster wiggles make higher sounds. Bigger wiggles make louder sounds. Little



Make a little book



1 Fold it into 8 boxes. Open it flat.



2 Fold short end to short end. Cut the thick line. Open it.



3 Fold the long way, pictures out. Push the ends in.



4 Fold into a book. Page 1 goes on the front!



Along a string

Big spoke into a paper cup. Its bottom vibrated. A taut string carried the motion to little's cup, which moved the air nearby.



A wiggle reaches you

The cone sent pressure waves through air. Little's eardrum vibrated when they arrived. Where would the wiggle travel next?



WONDER DAILY
**How
Speakers
Turn Waves
Into Sound**

Put a wiggle into words

How Speakers Turn Waves Into Sound • Curiosity day

Name _____

Date _____

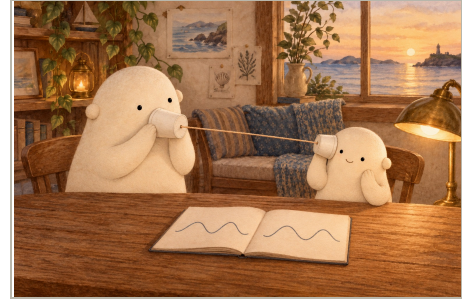
Give a clear command for watching rice move.



Rice gives a clue



A drum can wiggle too



Another path for a wiggle

Draw the bowl before and after a gentle tap. Show the rice.

speaker • cone • coil • magnet • air • wave • ear • rice • gently

Hum ... tell where to make a soft sound

Watch ... tell which surface to observe

Draw ... tell how to show the motion

Does your command begin with an action word, such as Hum, Watch, or Draw?