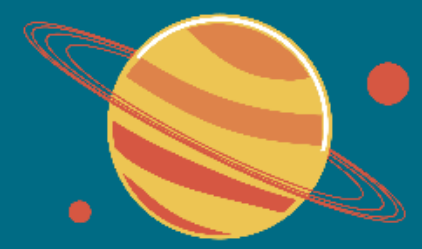


# Recorder



# Introduction



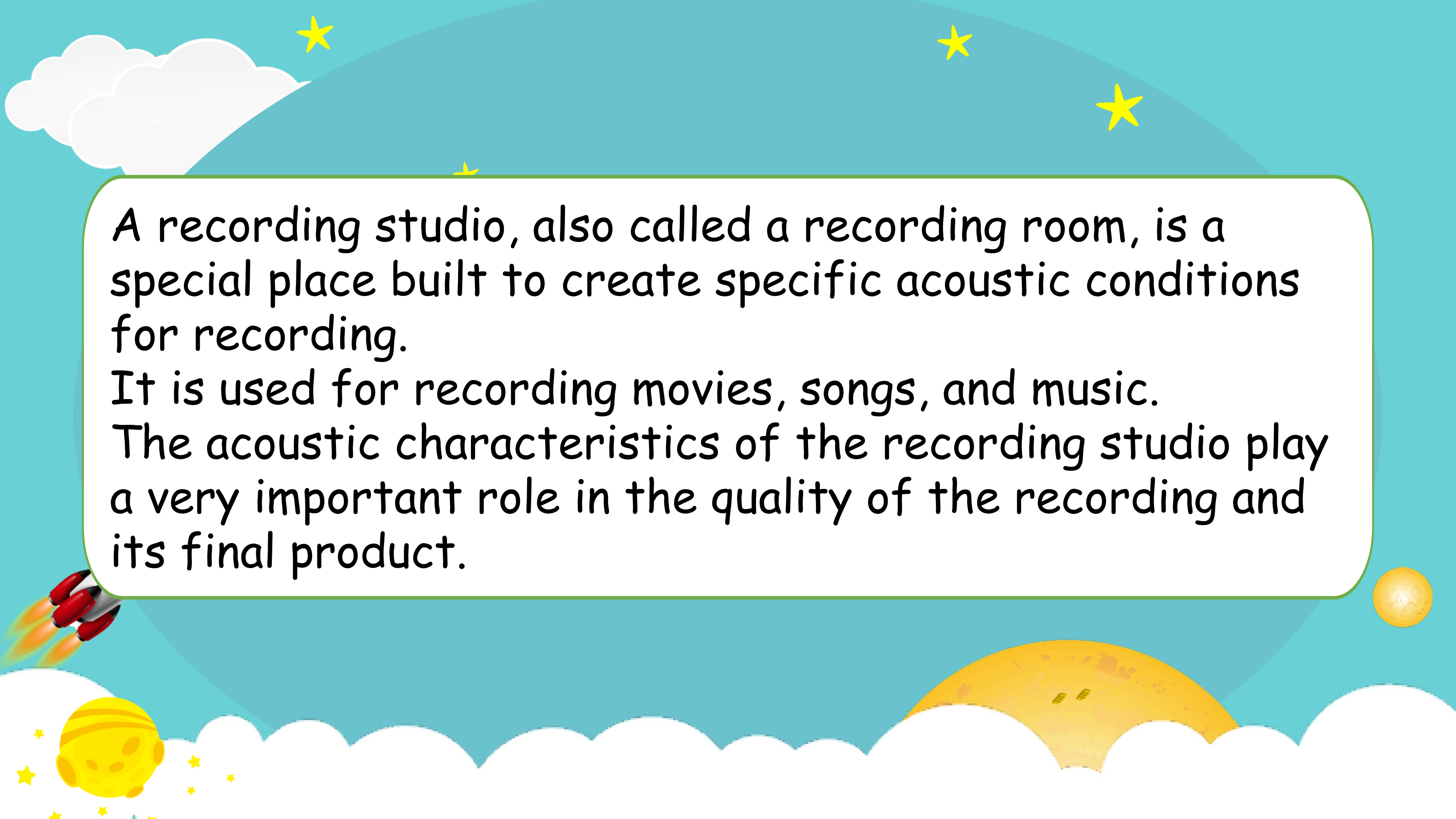


Can you guess how music is transmitted to the computer so that we can hear it?



# Recording Studio





A recording studio, also called a recording room, is a special place built to create specific acoustic conditions for recording.

It is used for recording movies, songs, and music.

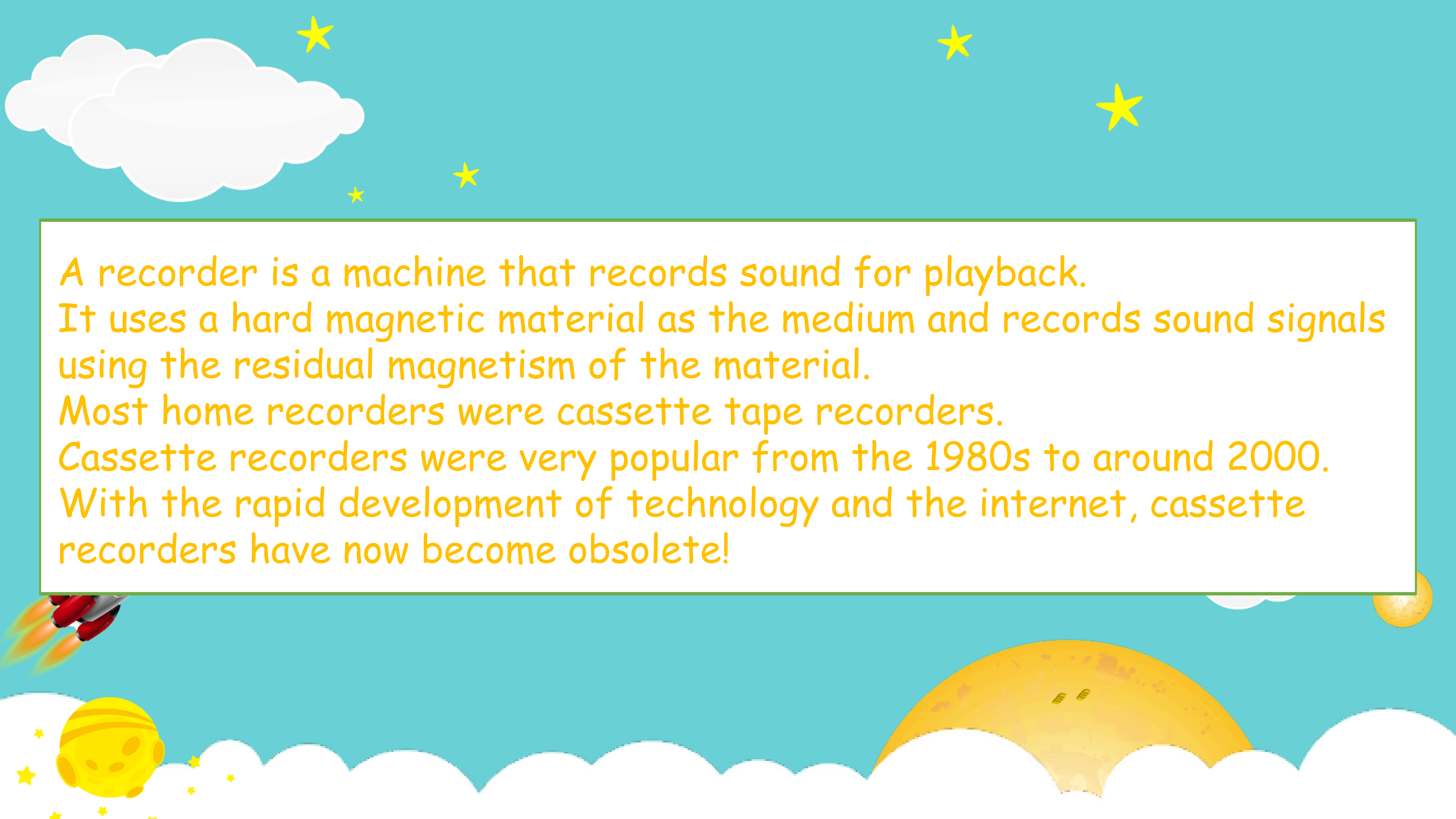
The acoustic characteristics of the recording studio play a very important role in the quality of the recording and its final product.



Old-fashioned Recorder



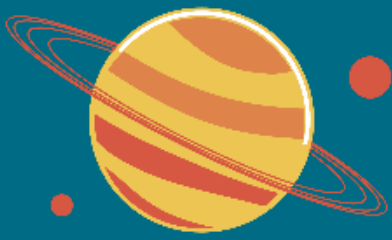
Modern Recorder



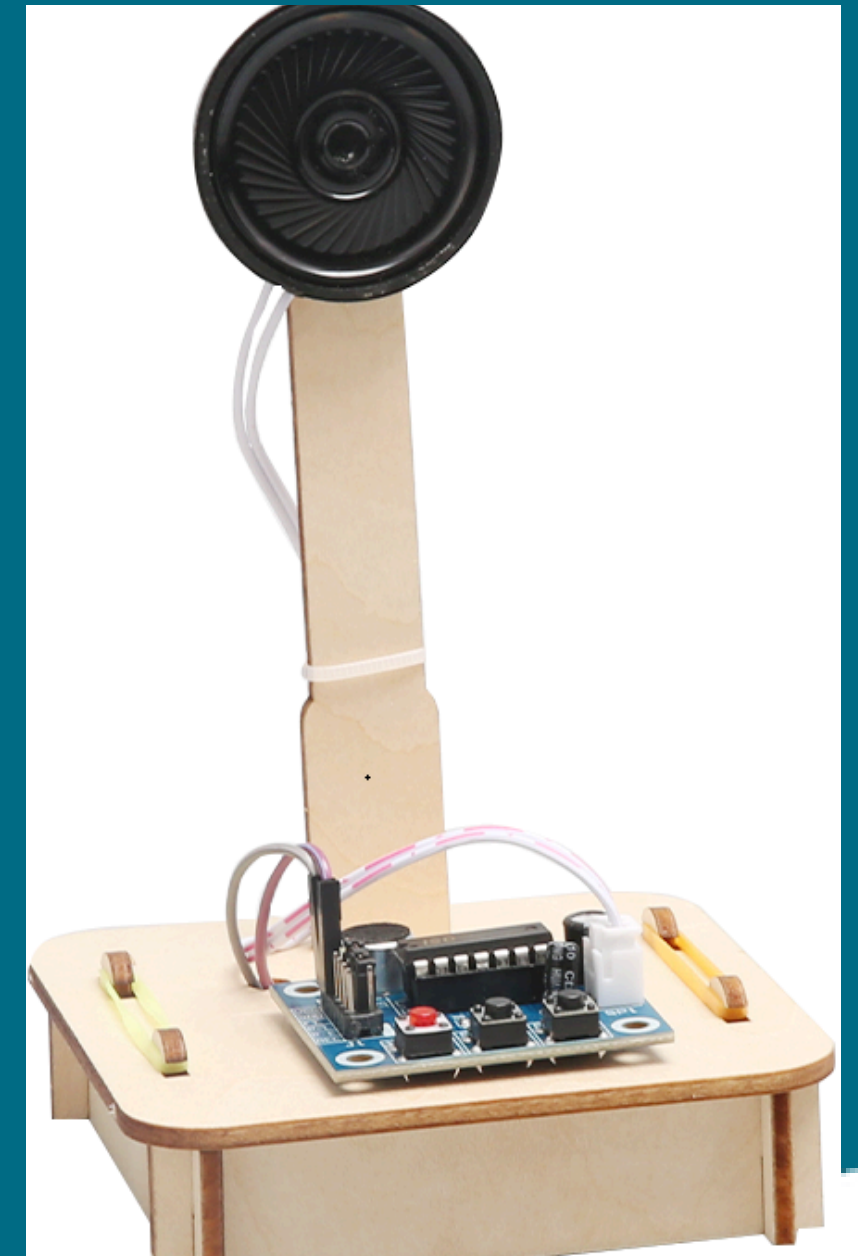
A recorder is a machine that records sound for playback. It uses a hard magnetic material as the medium and records sound signals using the residual magnetism of the material. Most home recorders were cassette tape recorders. Cassette recorders were very popular from the 1980s to around 2000. With the rapid development of technology and the internet, cassette recorders have now become obsolete!

Did you know?  
Our mobile phones also  
have a recording function!





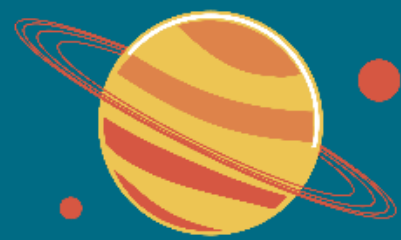
Let's make a fun  
recorder!



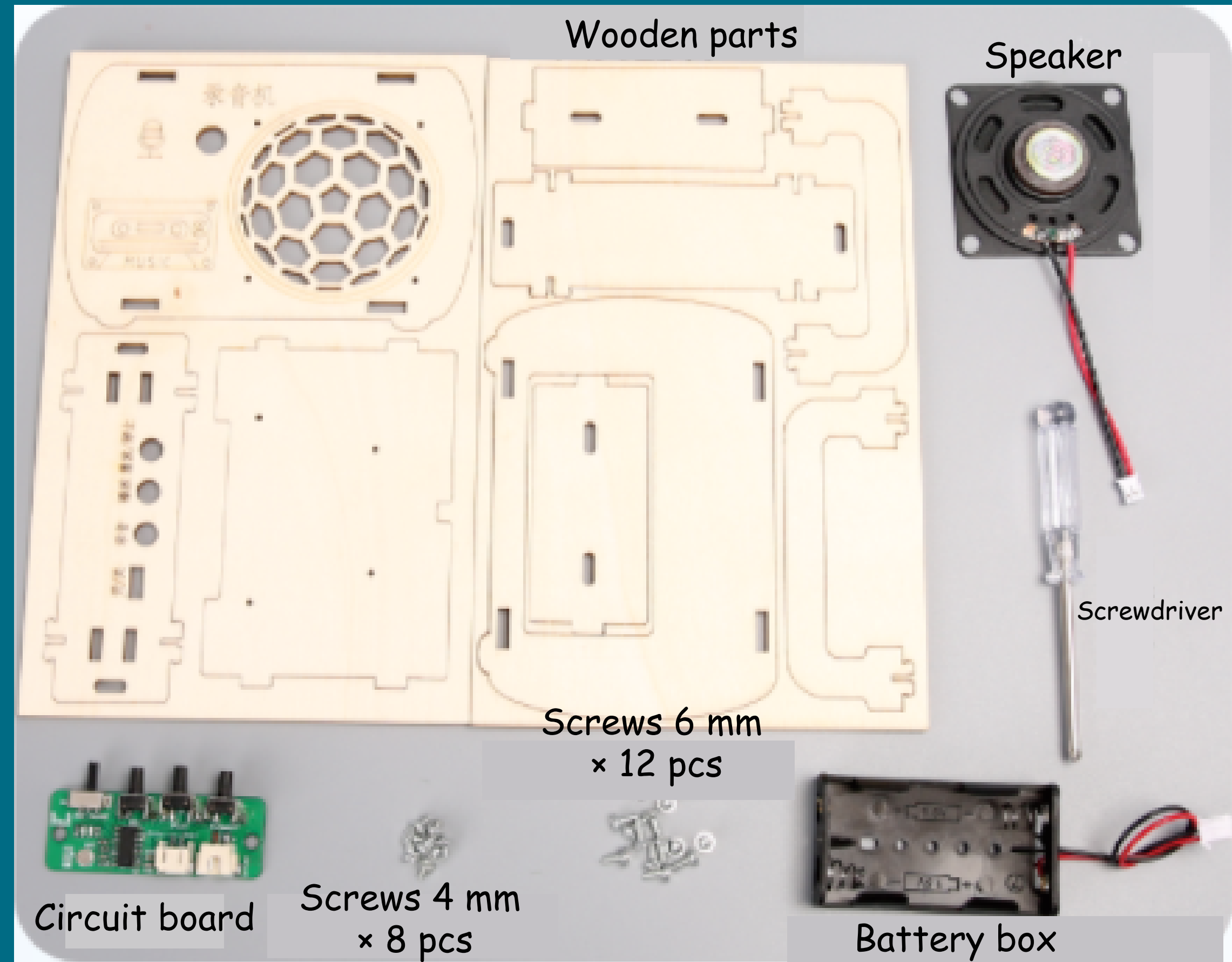
# Experiment Steps

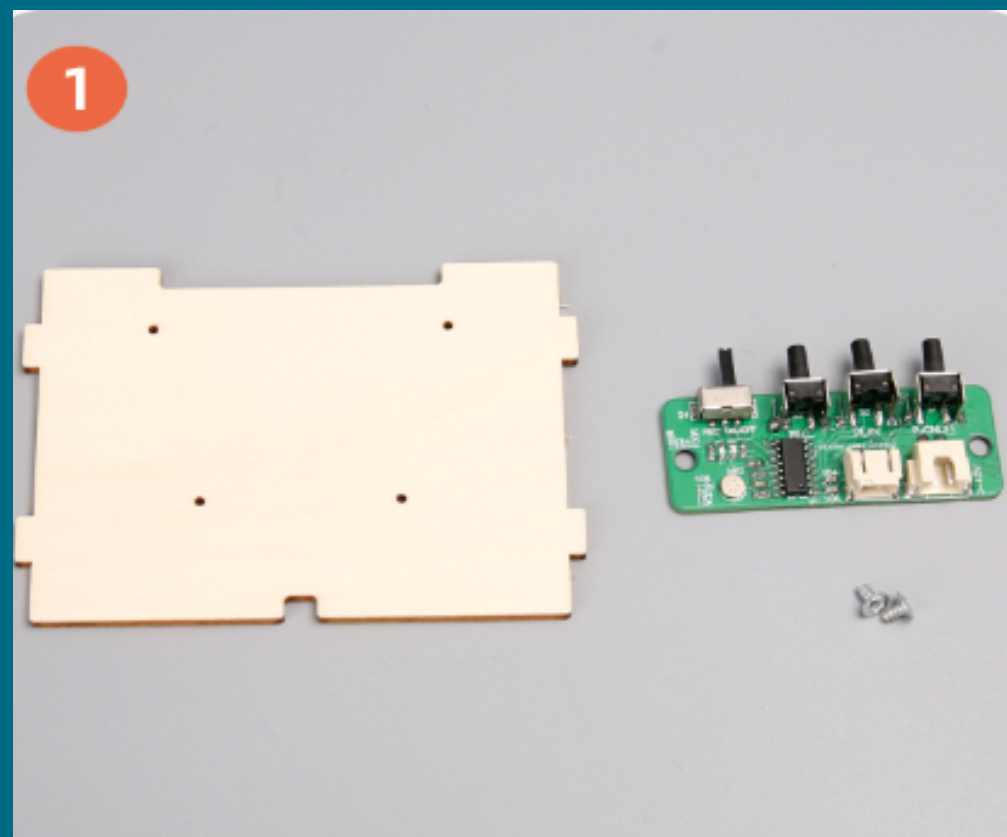
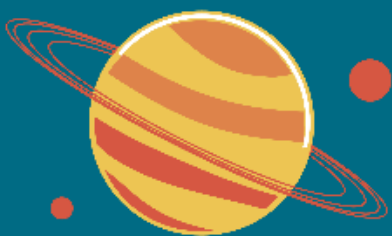
Let's begin!



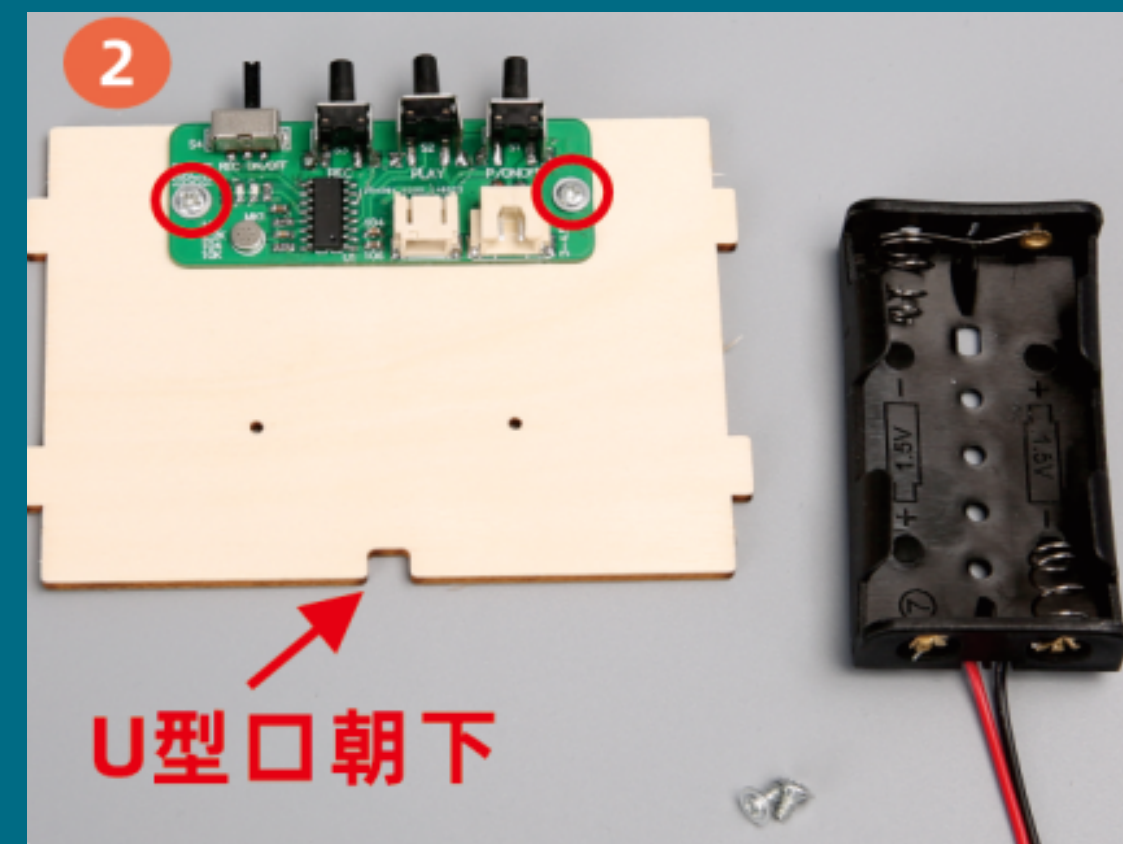


# Materials

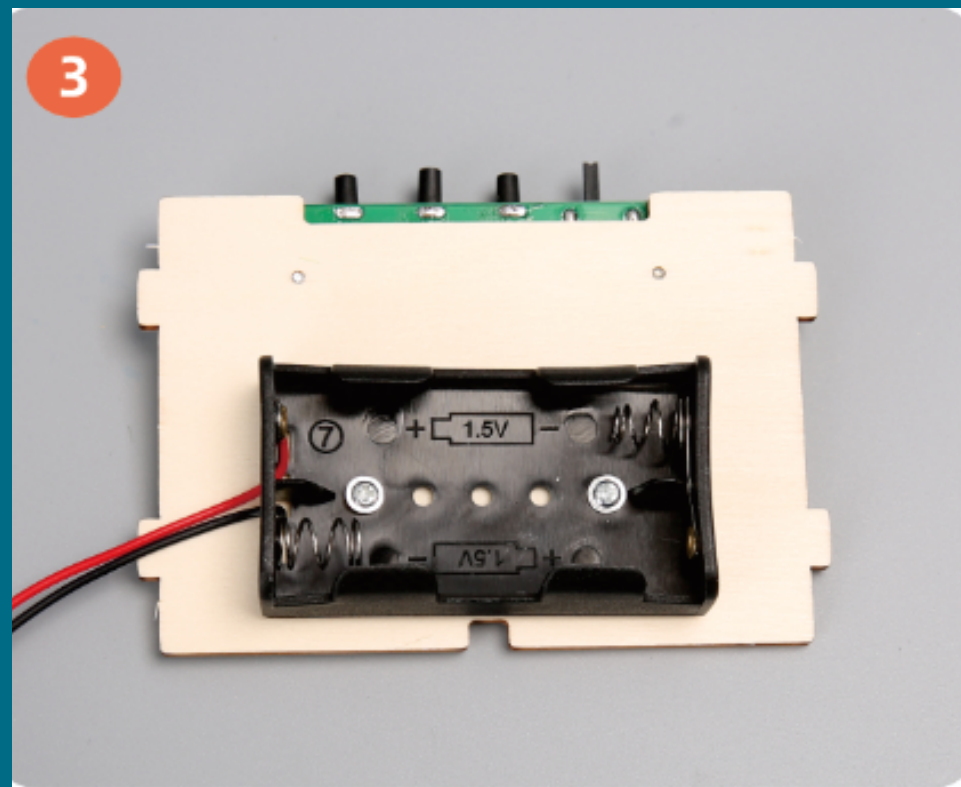
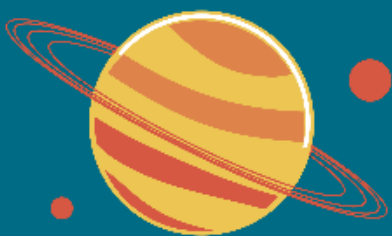




Prepare the above parts and two short screws.

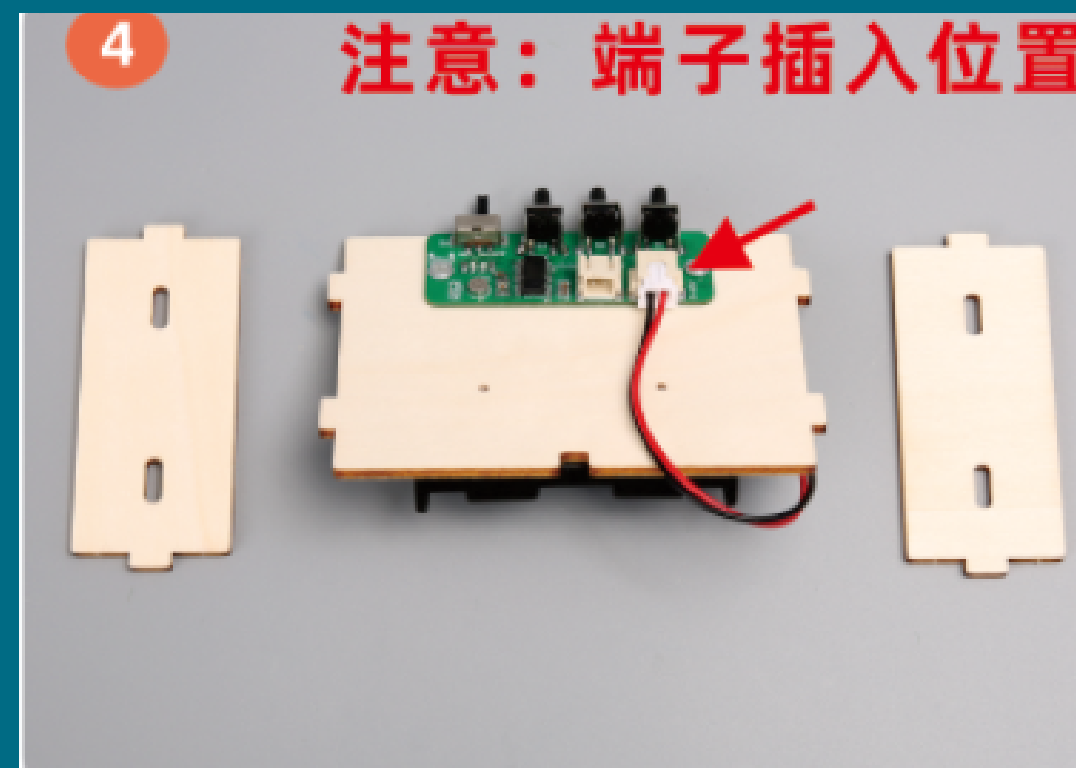


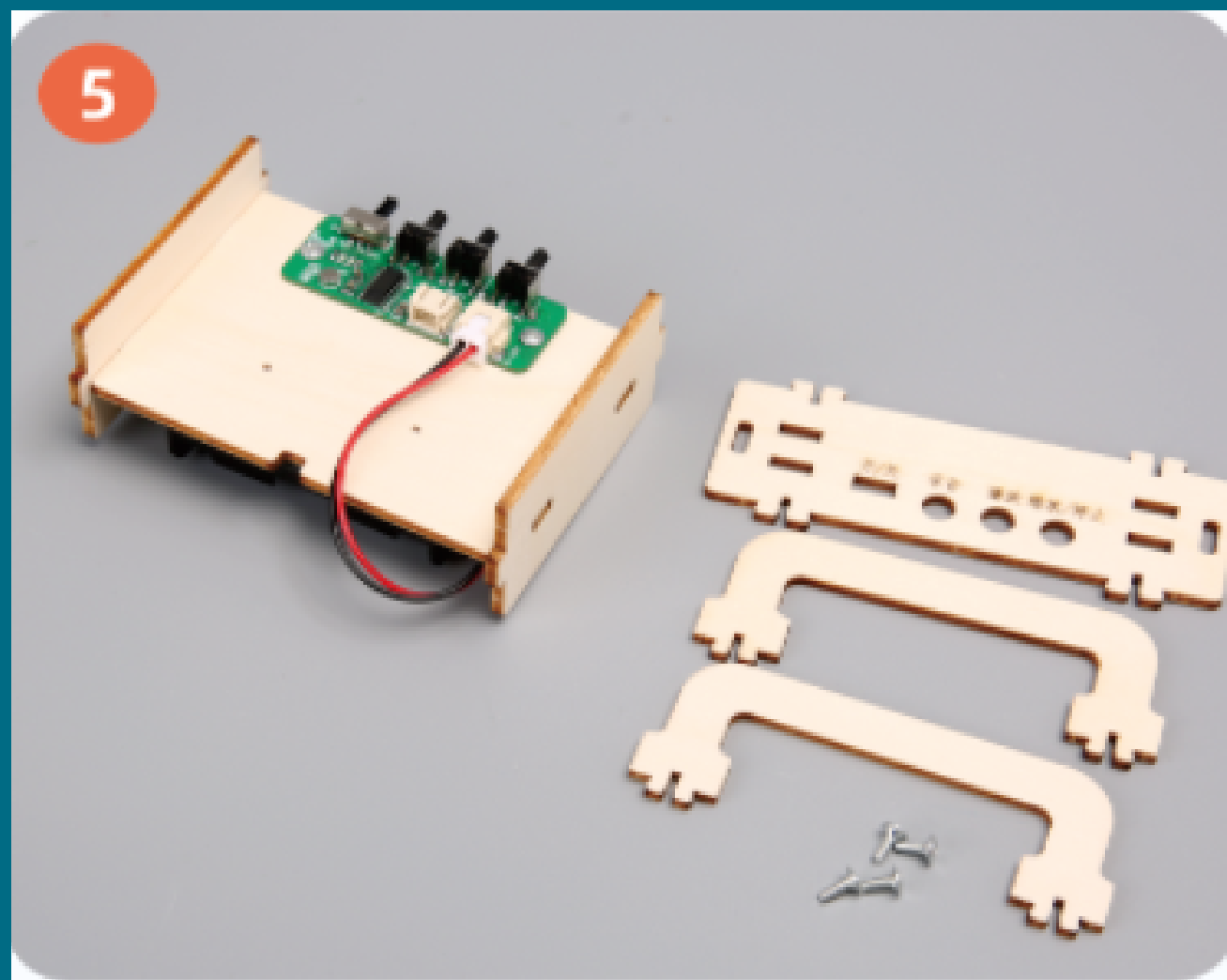
Use screws to fix the circuit board onto the wooden board. Prepare the battery box with terminal wires and two short screws.



Use screws to fix the battery box on the back of the wooden board.

Insert the terminal wires of the battery box into the circuit board.  
Prepare two side panels.



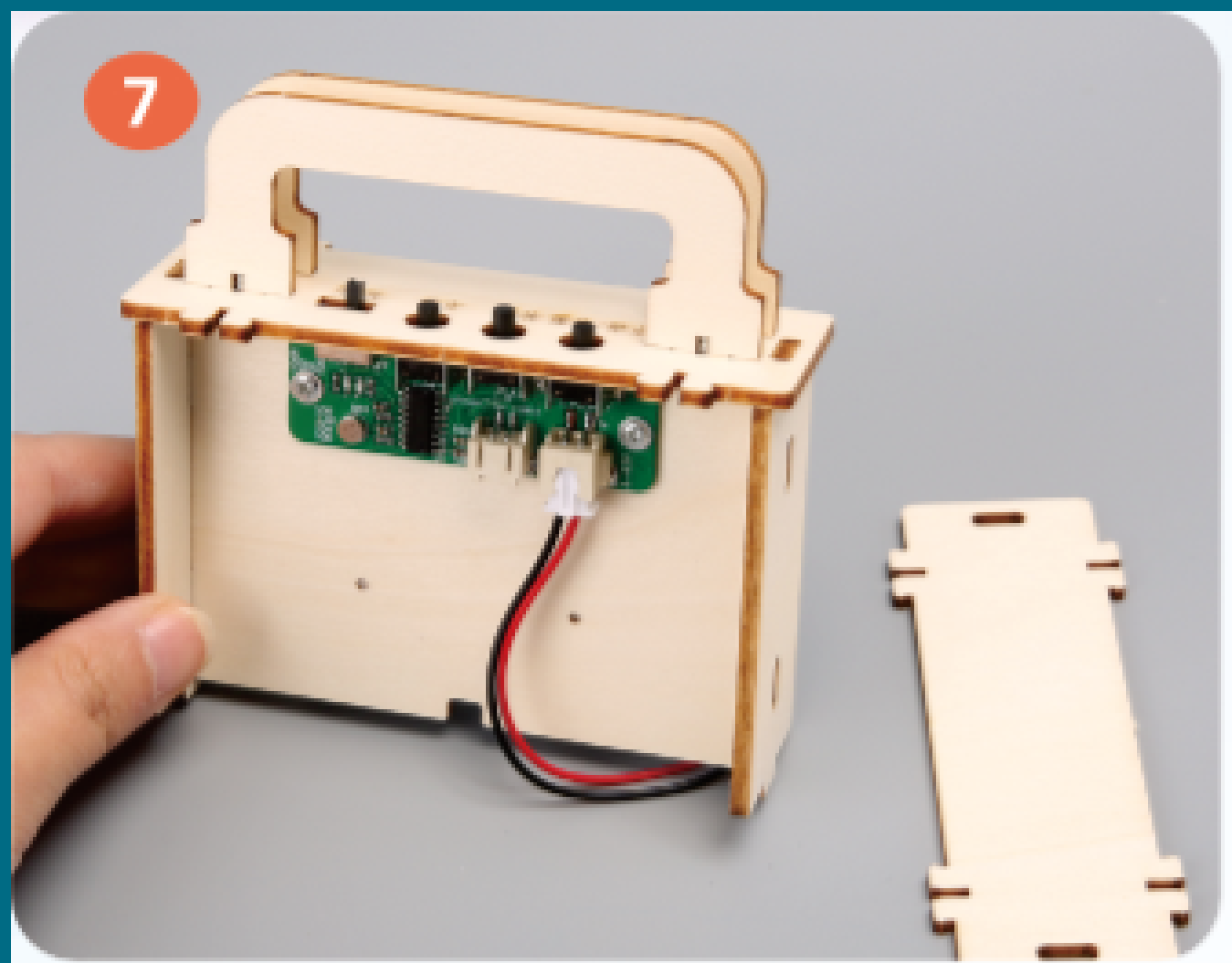
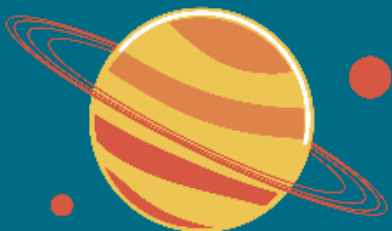


Install the side panels as shown.  
Prepare the next set of parts and  
four long screws.

Install the two handle panels  
onto the top board, and fix  
them with long screws from  
the back.



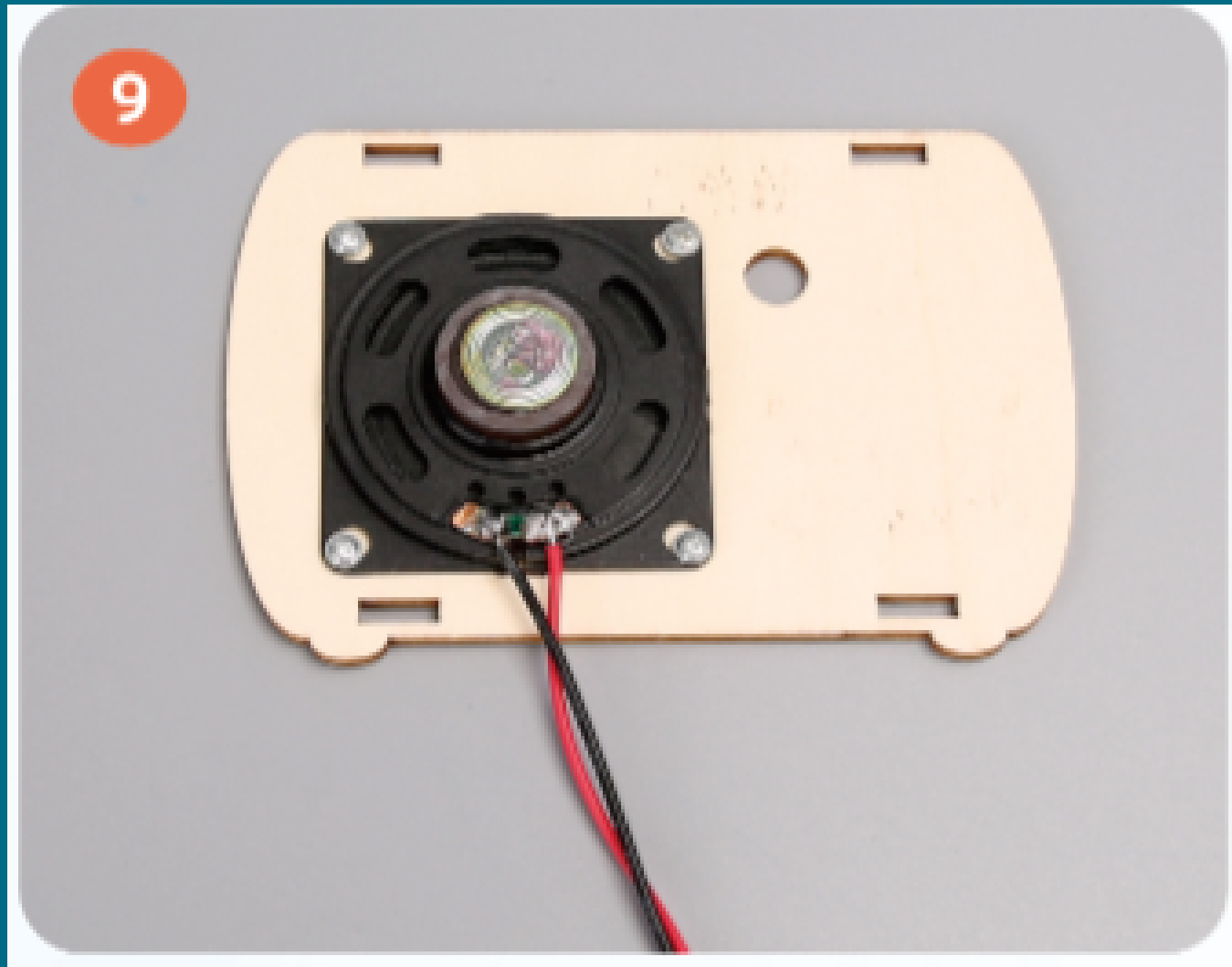
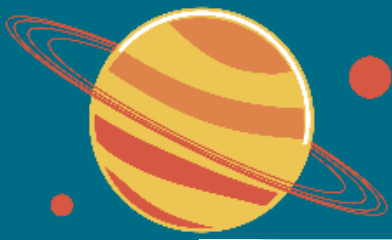
注意：带字的朝上



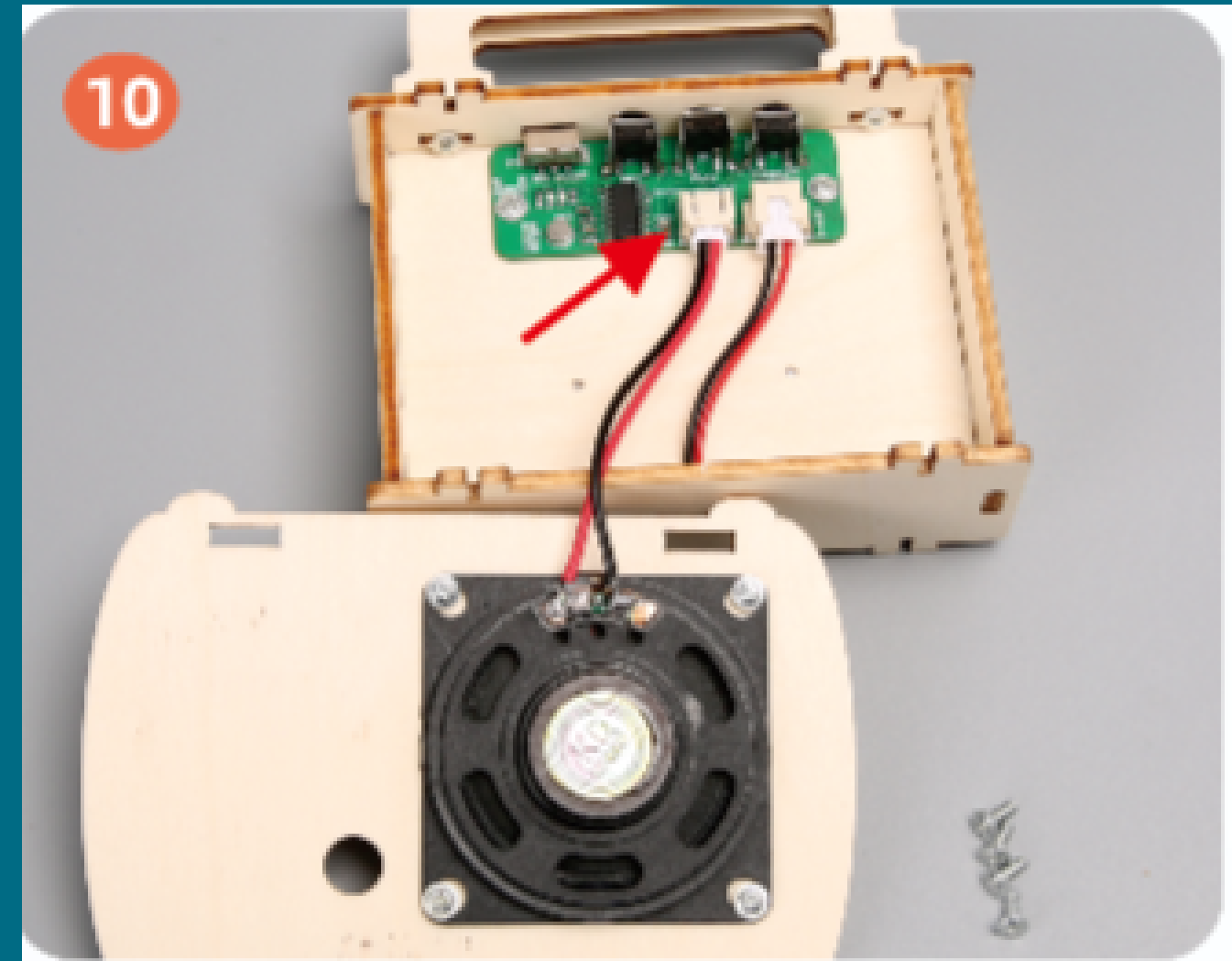
Align and install the round hole on the top board with the button on the circuit board.  
Prepare the next set of part.

Prepare the speaker with terminal wires and four short screws.

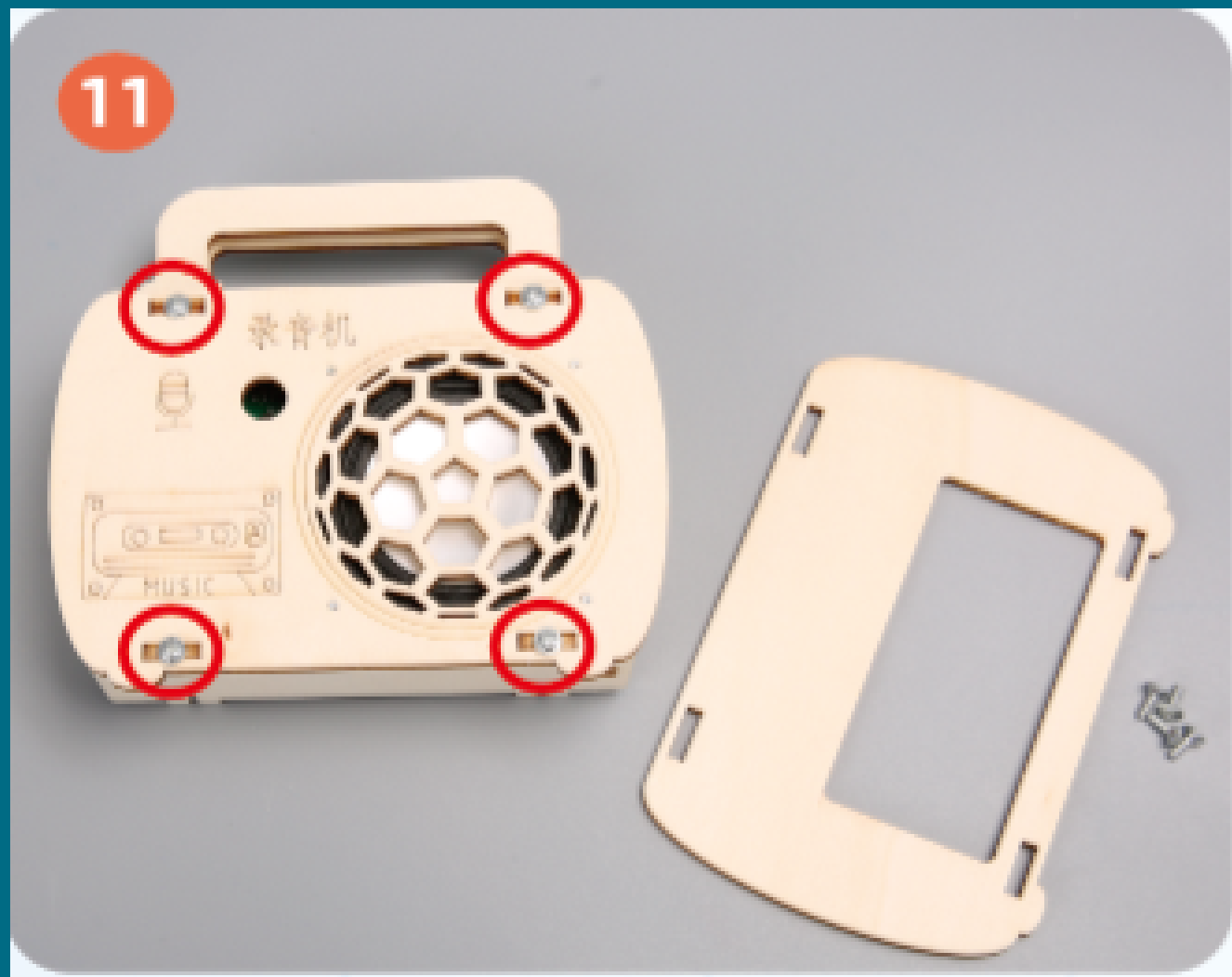
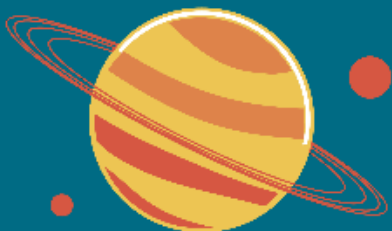




Insert the speaker's terminal wires  
into the circuit board.  
Prepare four long screws.



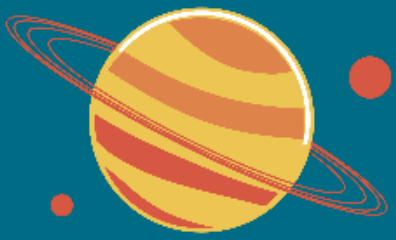
Use short screws to fix the speaker  
(with terminal wires) onto the back of  
the front panel.



Install the front panel and fix it with long screws.

Then install the back panel and fix it with long screws.



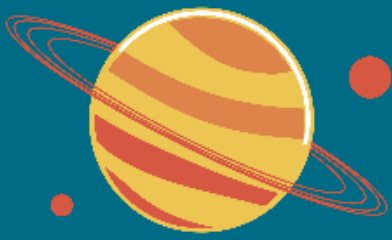


## Notes:

1. Turn on the switch. Press the record button once to start recording. Press it again to stop recording.
2. Press the play button to play back the recording.

# Science Knowledge





## Experiment Principle

The battery box supplies power to the circuit board and the sound device.

When sound enters the microphone, it generates an induced current that varies with the sound.

The audio current is amplified by the amplifier circuit and then enters the coil of the recording head, producing a magnetic field that changes with the audio current.

During playback, the circuit board converts the induced current into sound through the speaker.