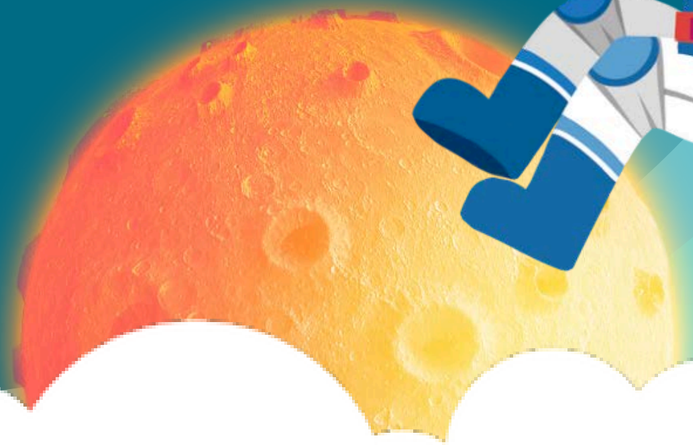
Cable Car

Experiment Objectives

1. To gain a basic understanding of how a cable car works.
2. To let children assemble a cable car.
3. To inspire children's interest in science through experimentation and cultivate scientific thinking.



Introduction

Fun Fact

Let's explore together!
What makes things move?

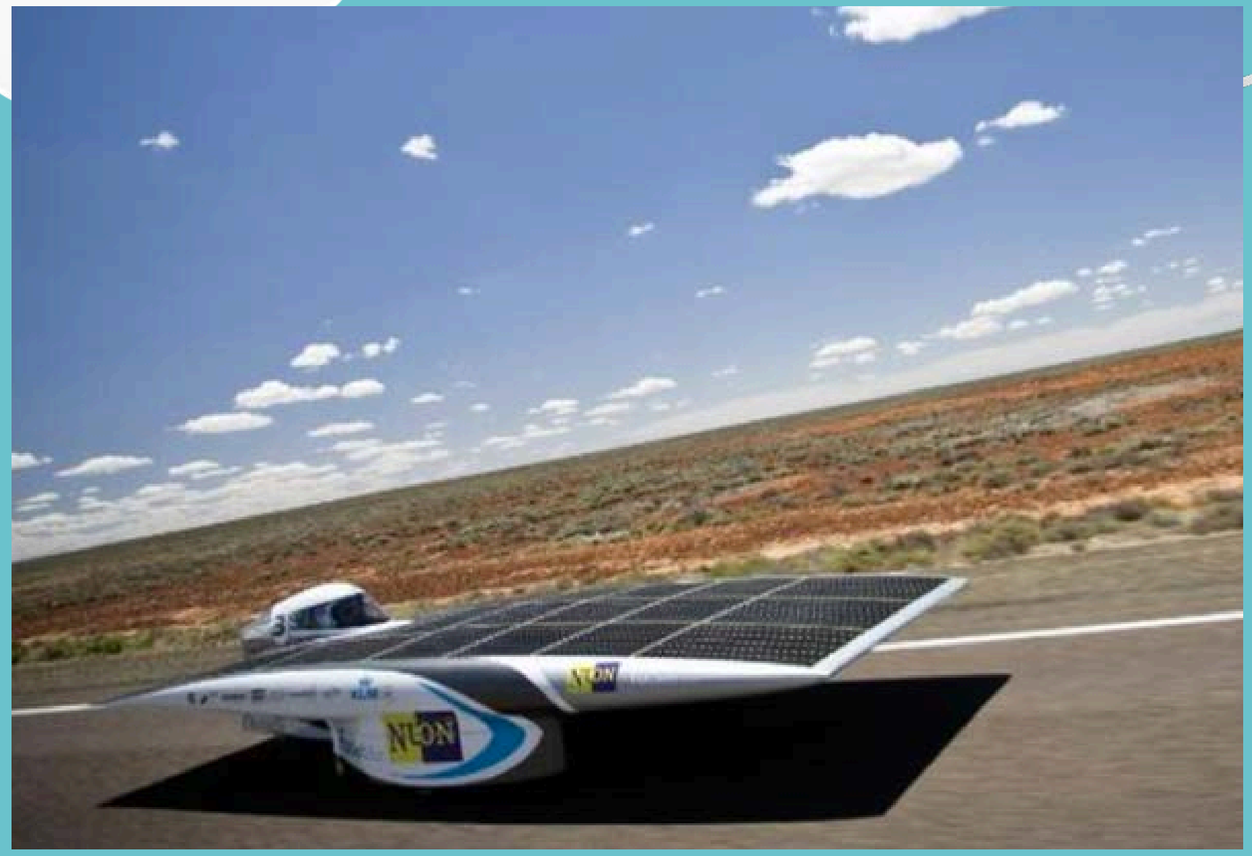
Bicycle — powered by human force.

Electric scooter —
powered by electricity.

Fun Fact

Car —
powered by fuel energy.

Horse carriage —
powered by horse pulling force.



Solar car —
powered by solar energy.

Maglev train —
powered by magnetic force.

Cable car —
powered by ???

Gravity:
Objects are pulled downward by Earth's gravity.

Apple falling to the ground

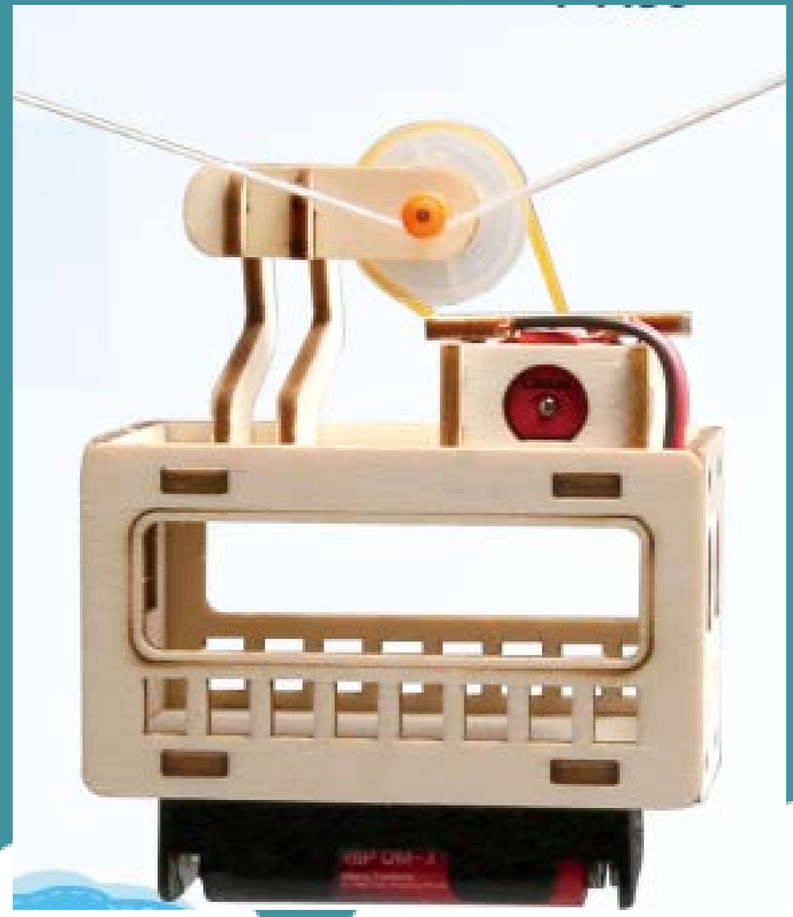
Carrying a water bucket

Wearing a backpack

Cable Car

Let’s make an interesting experiment today

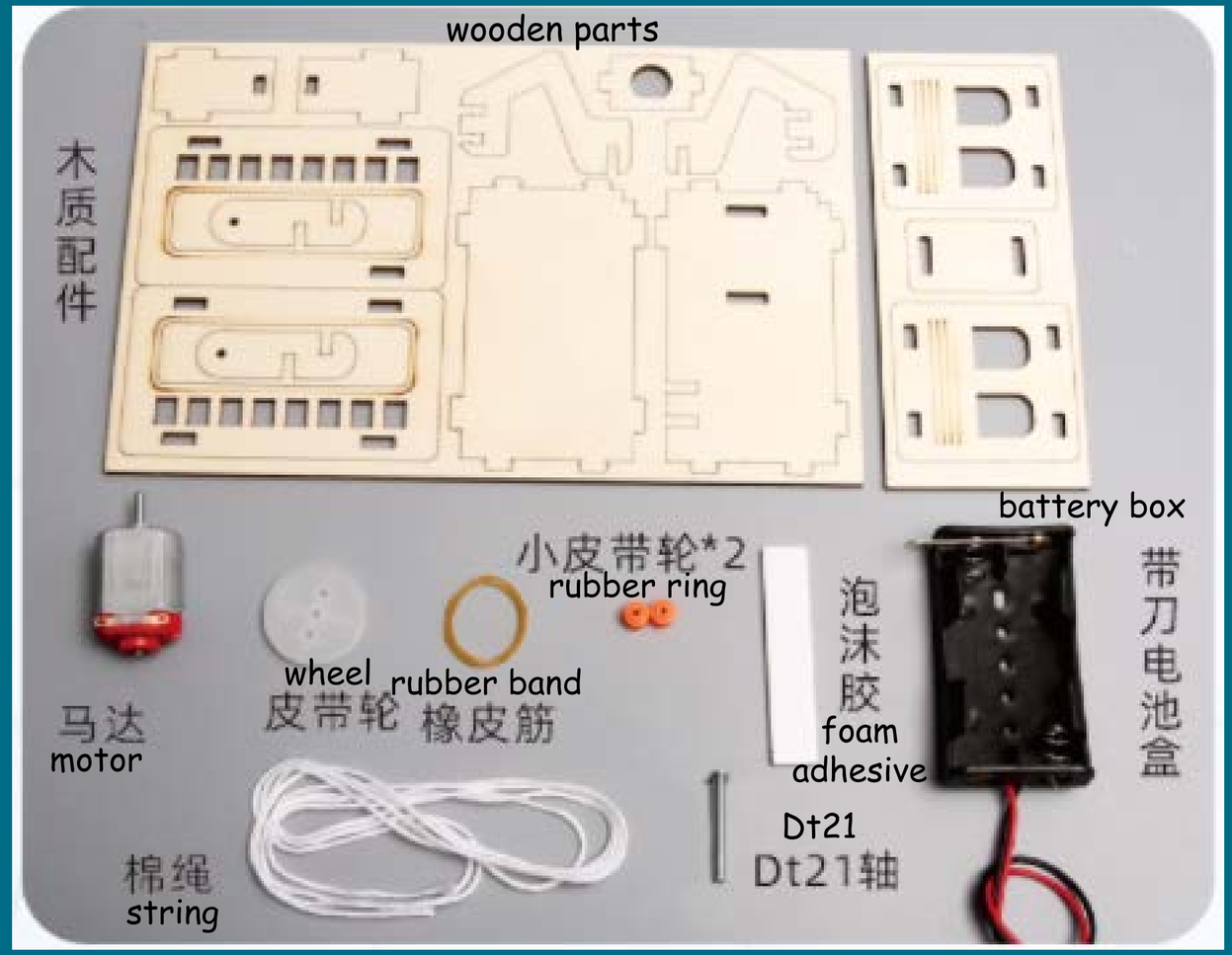
Cable Car!

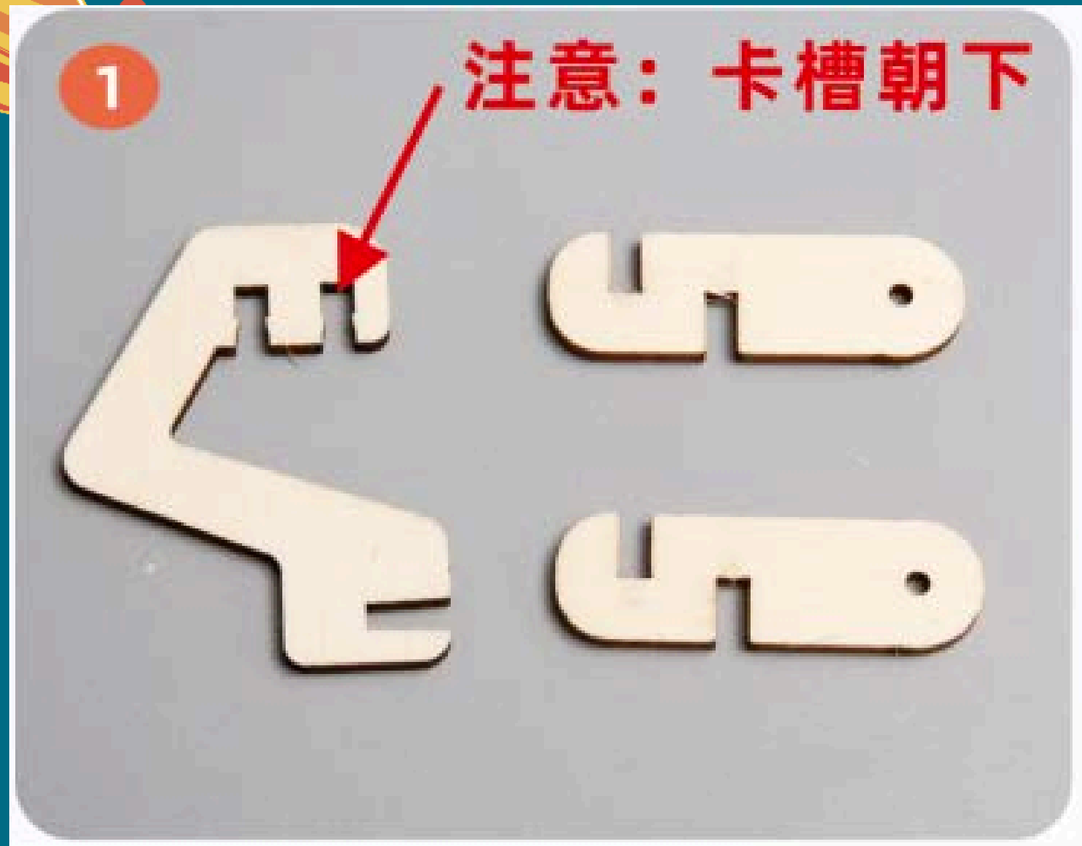


Experiment Steps

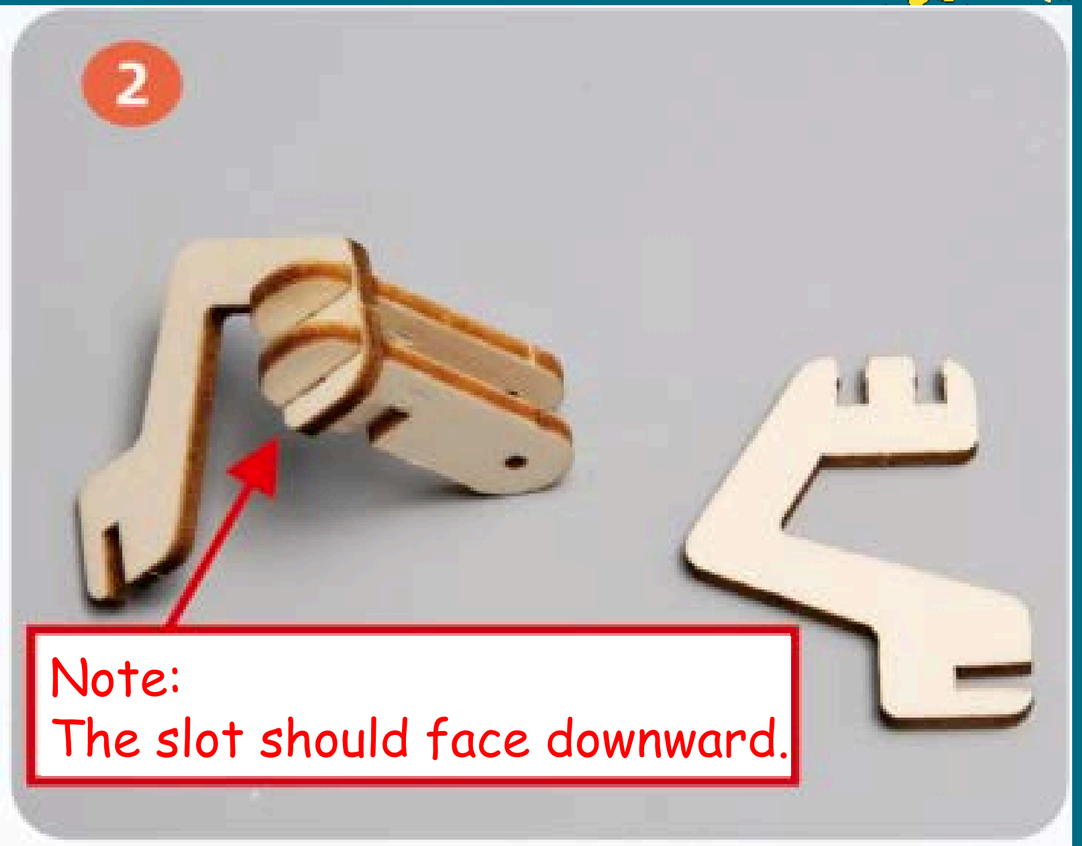
Let's get started!

Recognize the Materials

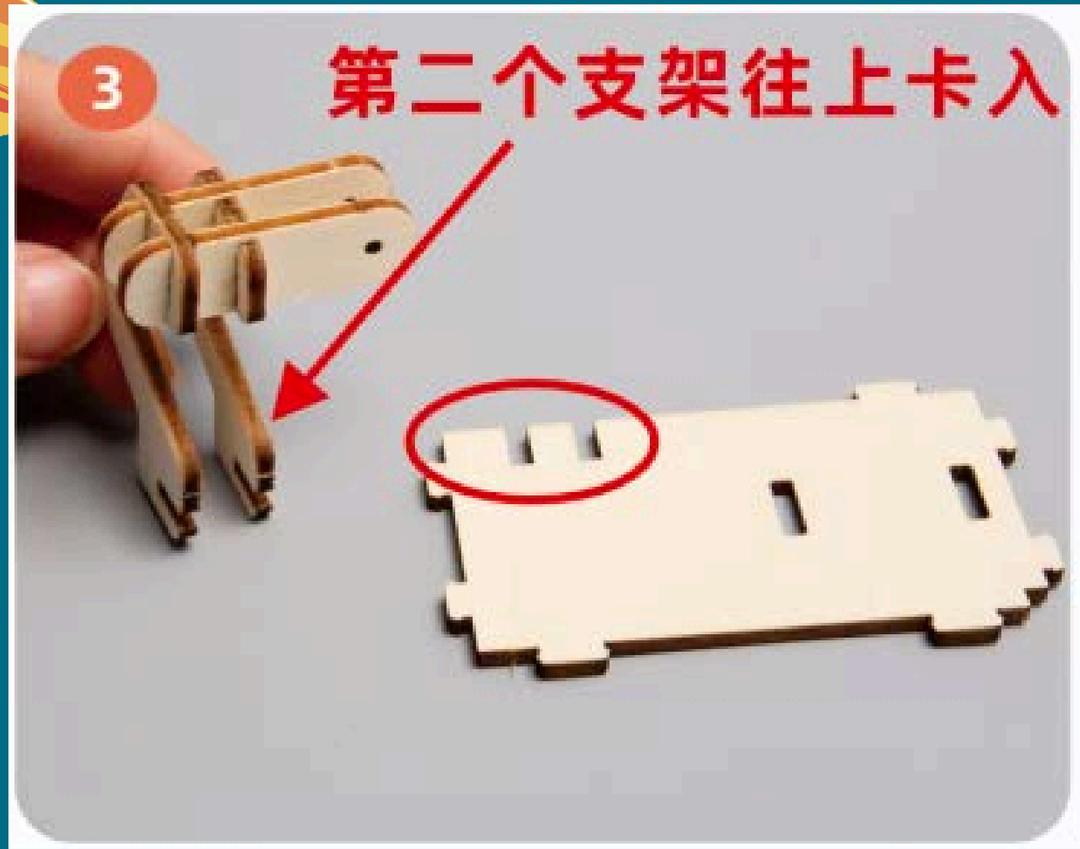




Prepare the parts as shown.

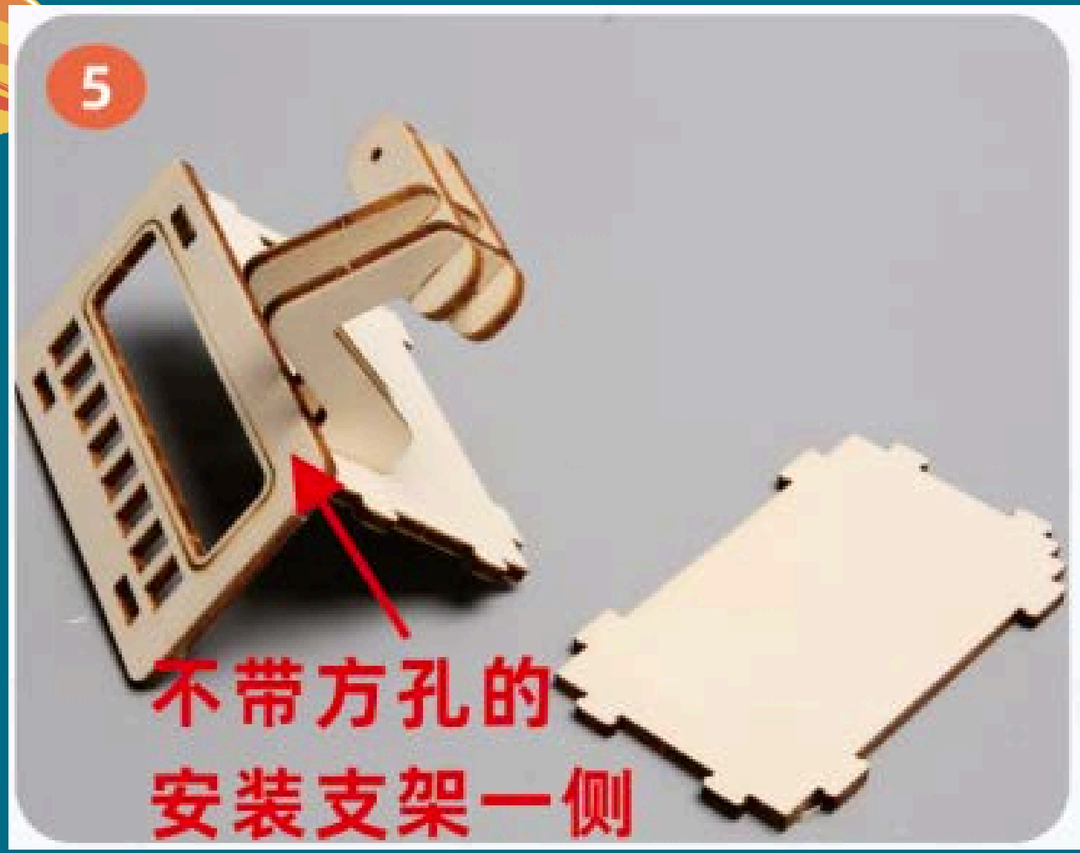


Insert two small boards downward into the upper support frame as shown. Prepare for the next step.

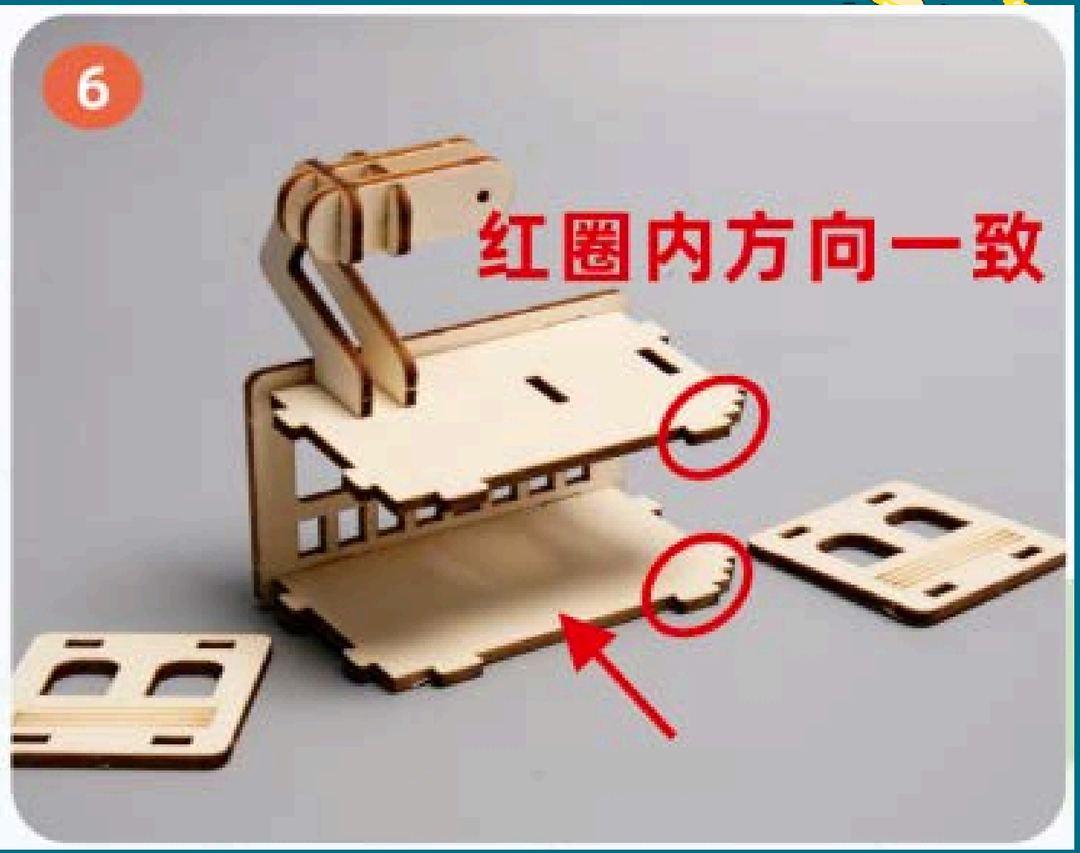


Insert the second support frame into the two small boards as shown.
Prepare for the next step.

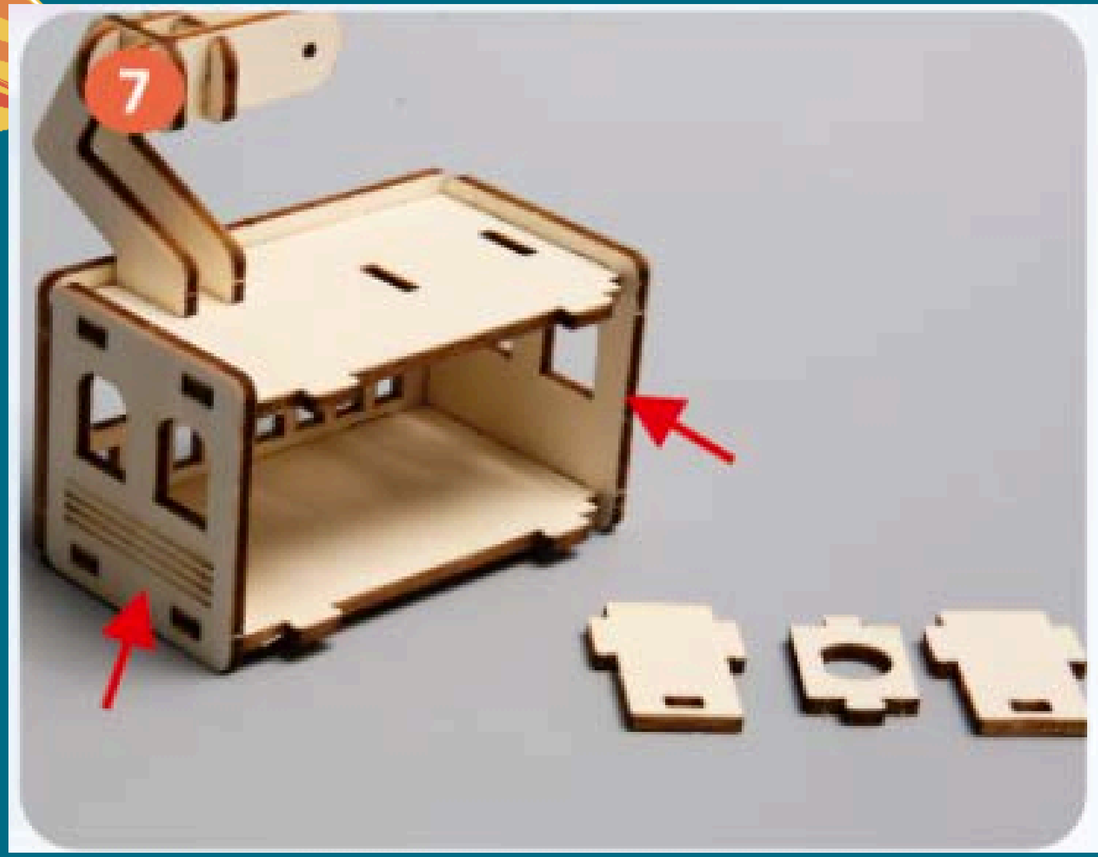
Insert the wooden panel into the slot as shown.
Prepare for the next step.



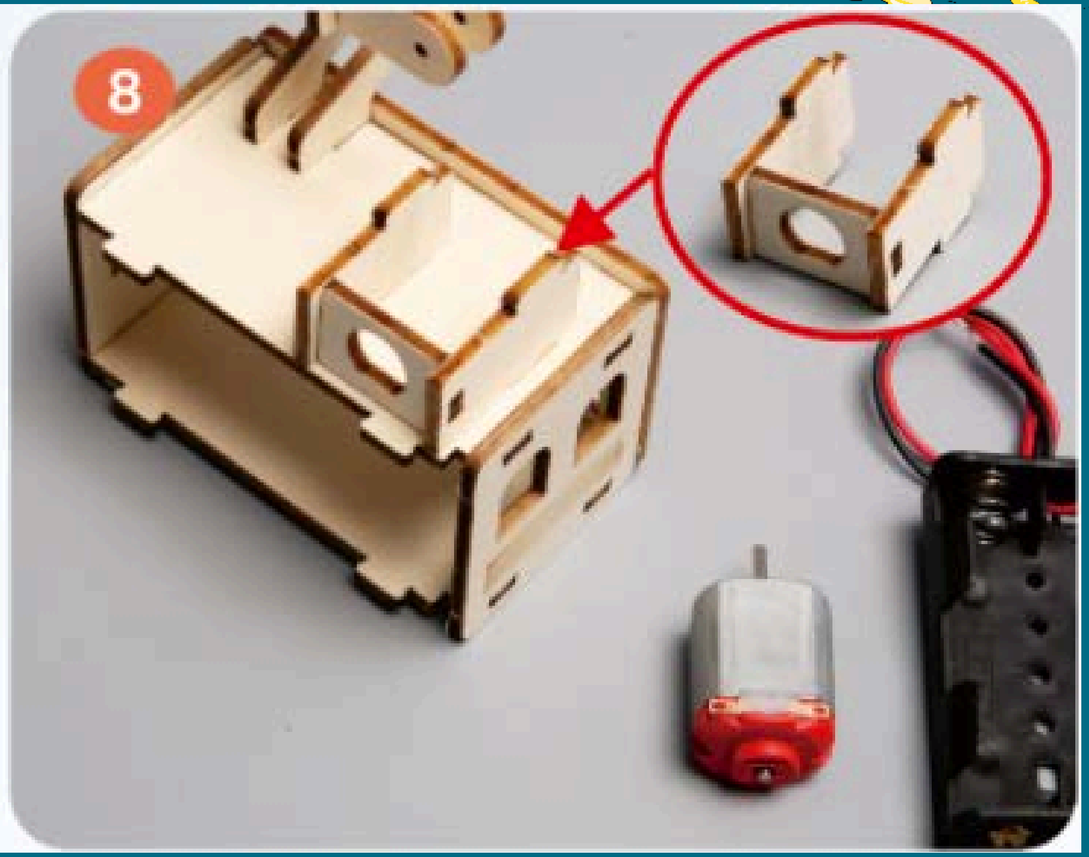
Install support frame on the side without rectangle holes as shown.
Prepare for the next step.



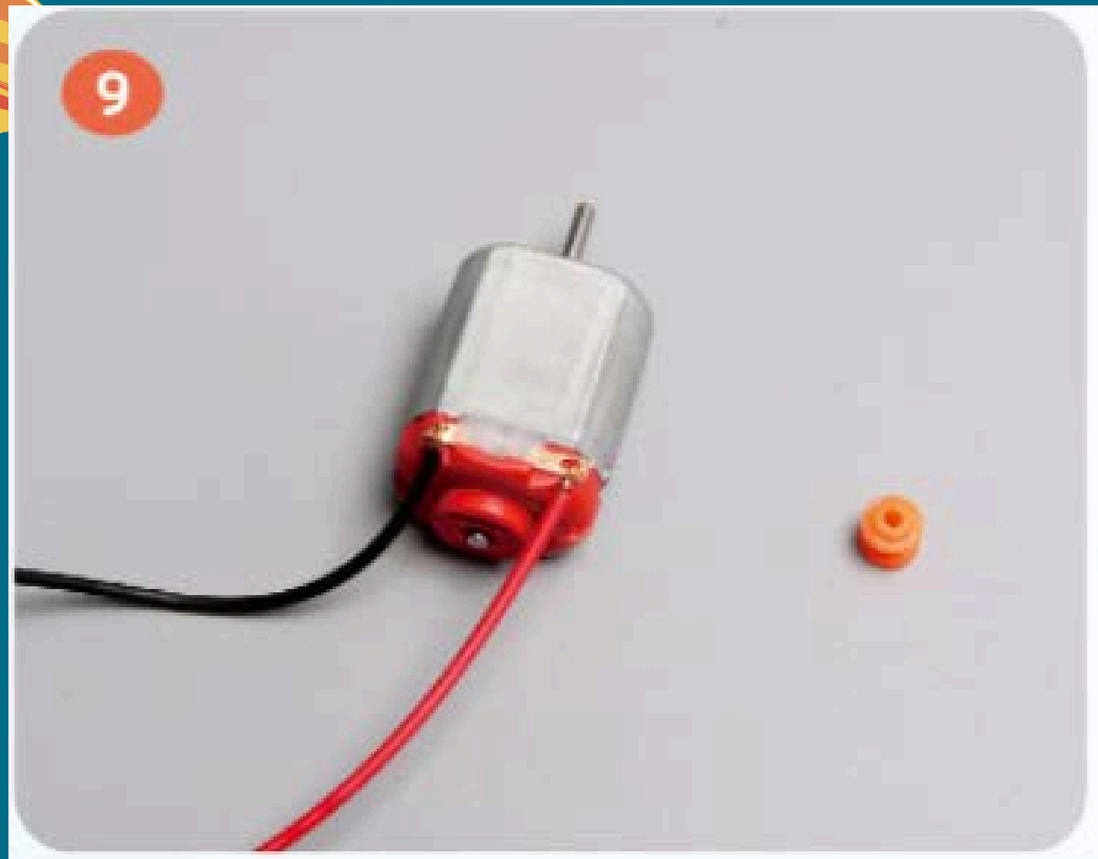
Install as shown.
Ensure the red circles face the same direction as shown.
Prepare for the next step.



Install the two side panels as shown. Prepare for the next step.

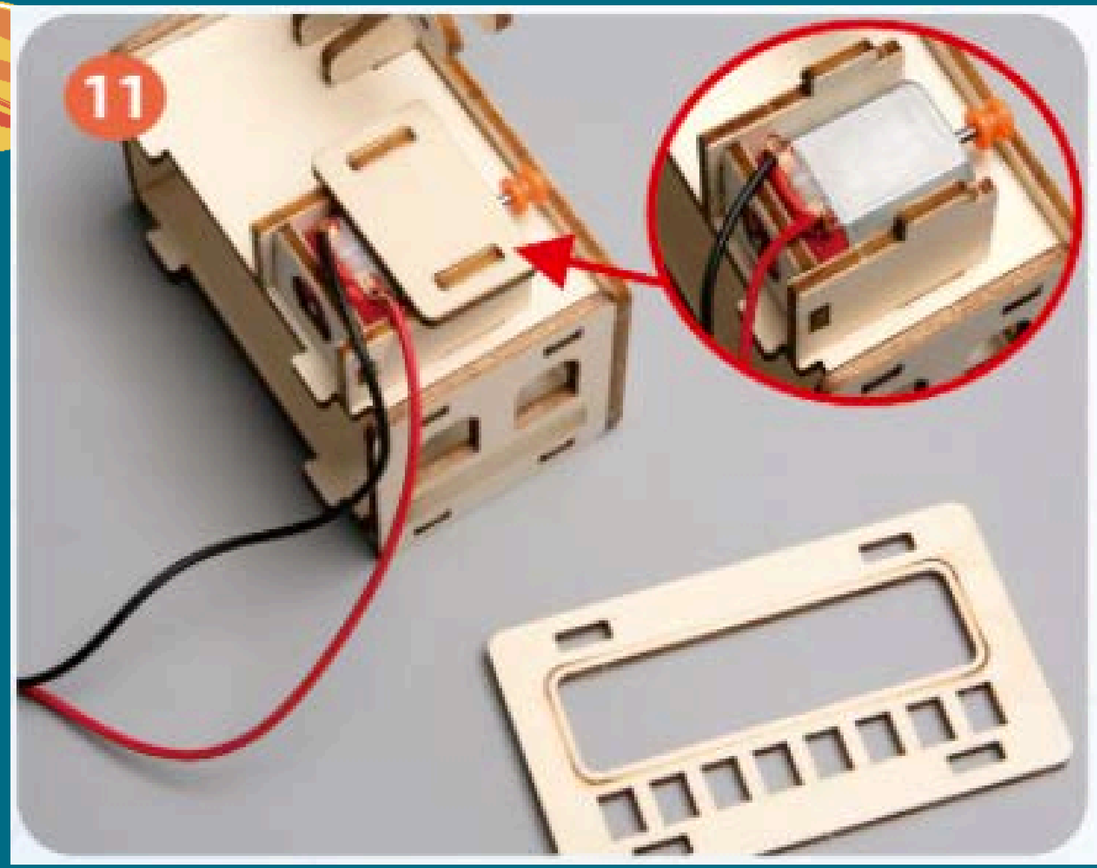


Assemble the top panel and slot, and prepare the motor and battery box.

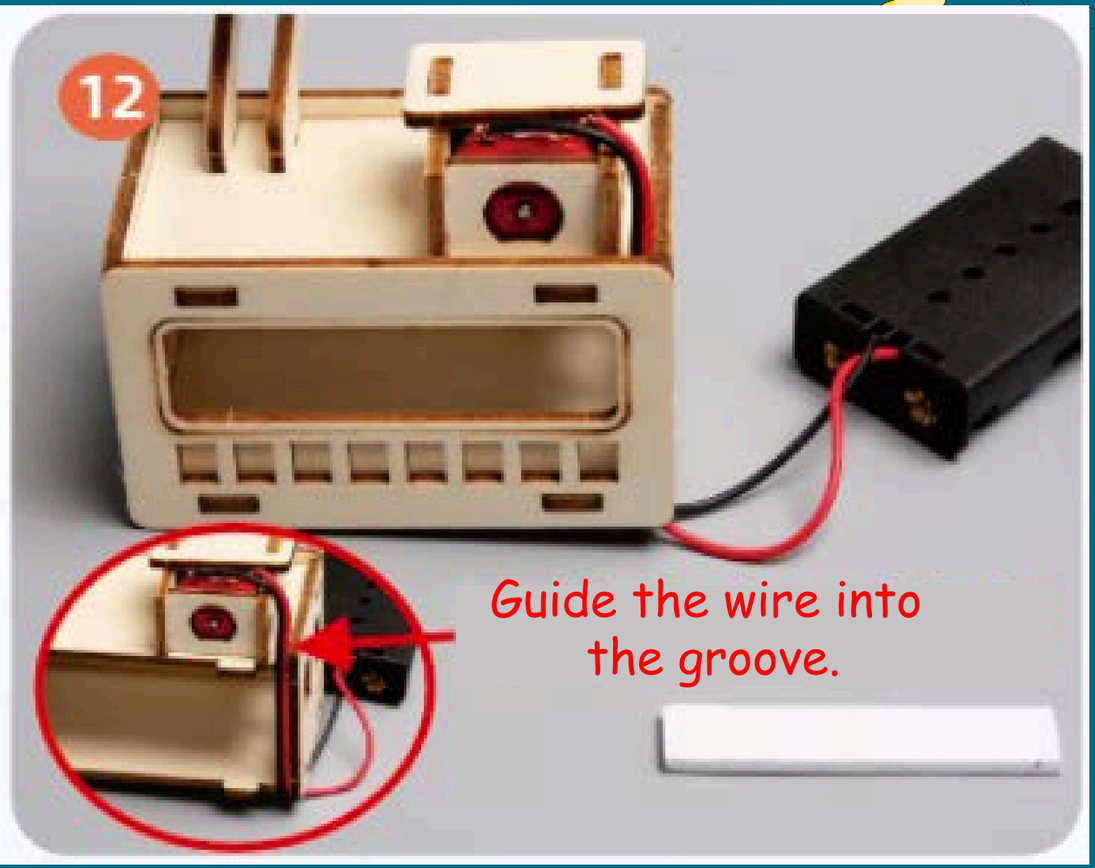


Connect the wires from the battery box to the motor as shown.
Prepare the small rubber ring.

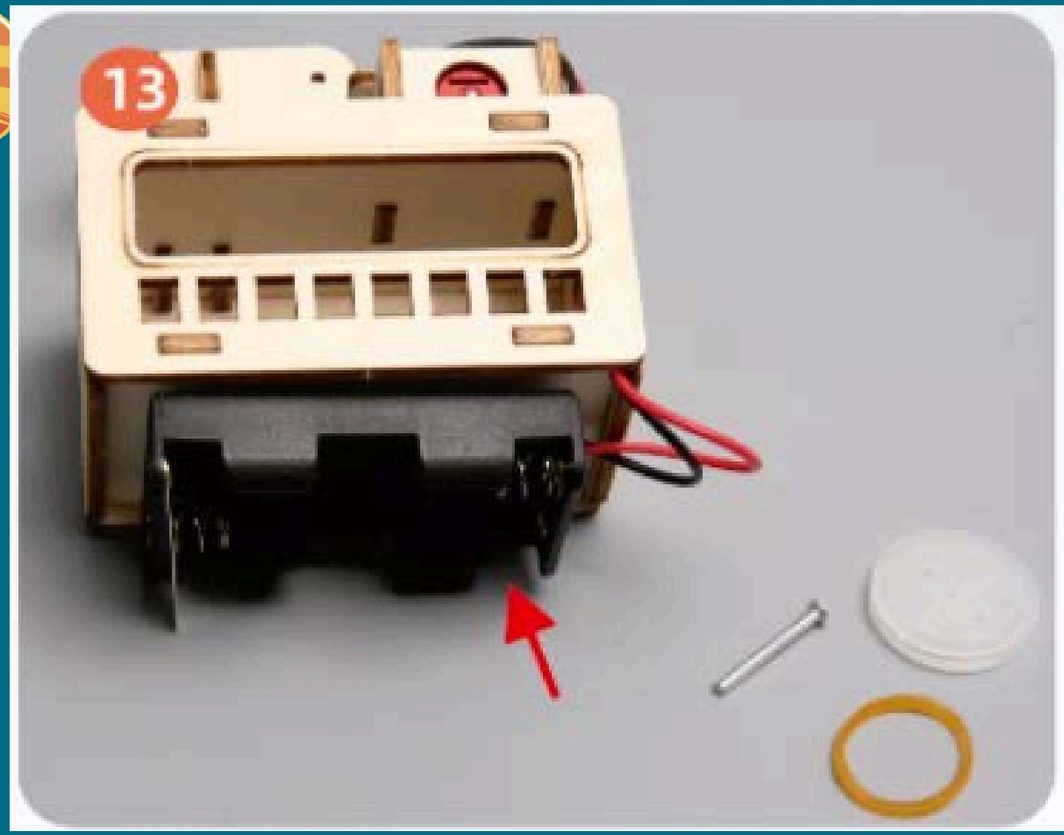
Leave a small gap when installing the rubber ring onto the motor shaft.
Prepare for the next step.



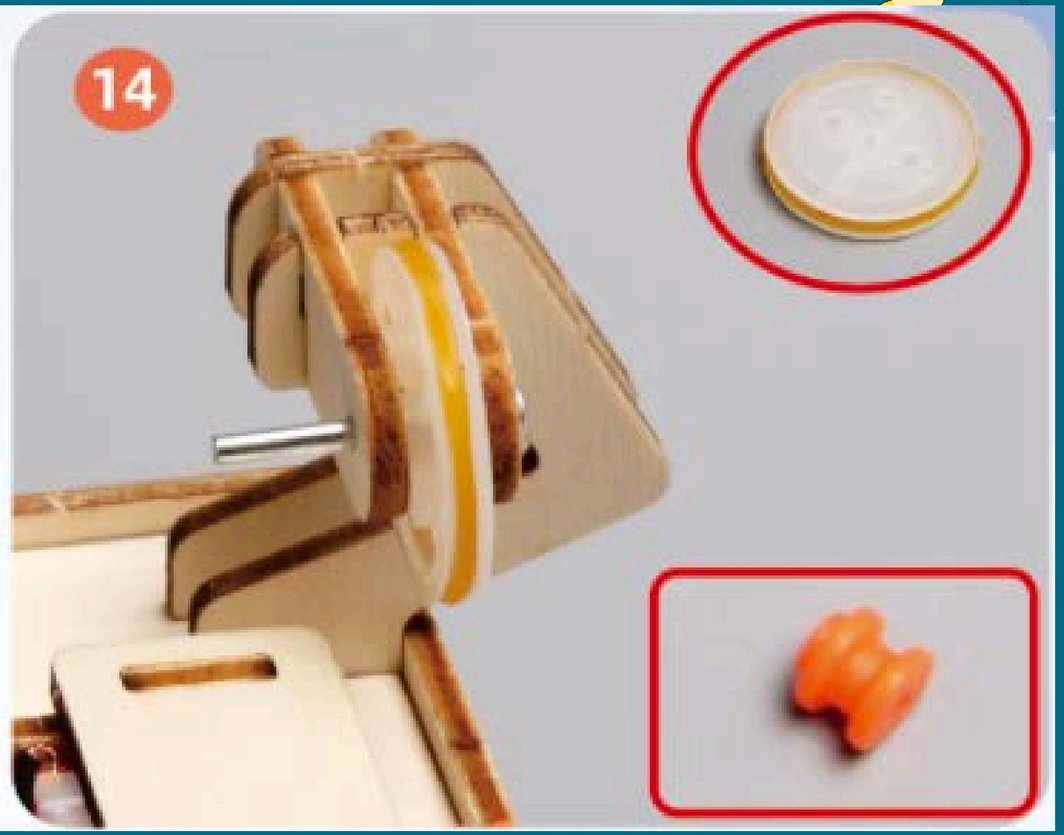
Use small panel to fix the motor in place as shown.
Prepare for the next step.



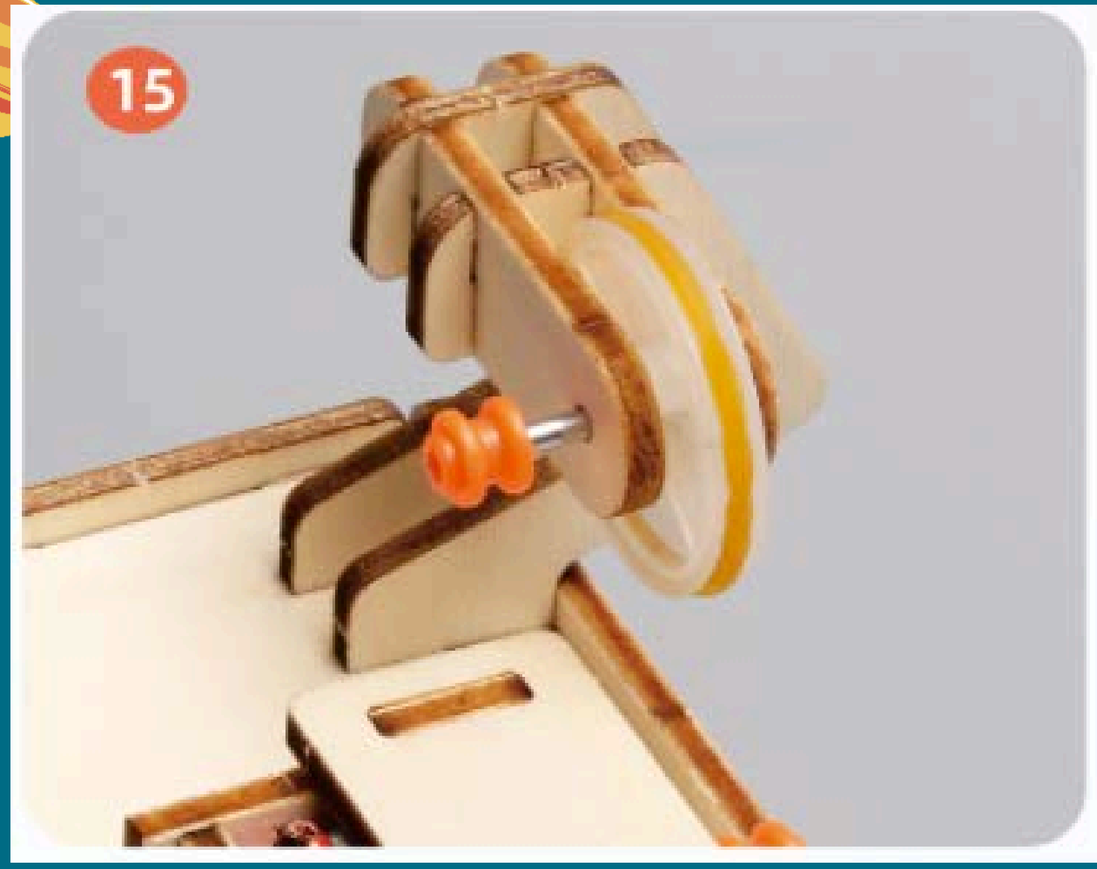
As shown in the picture, install the panel and prepare the foam adhesive .



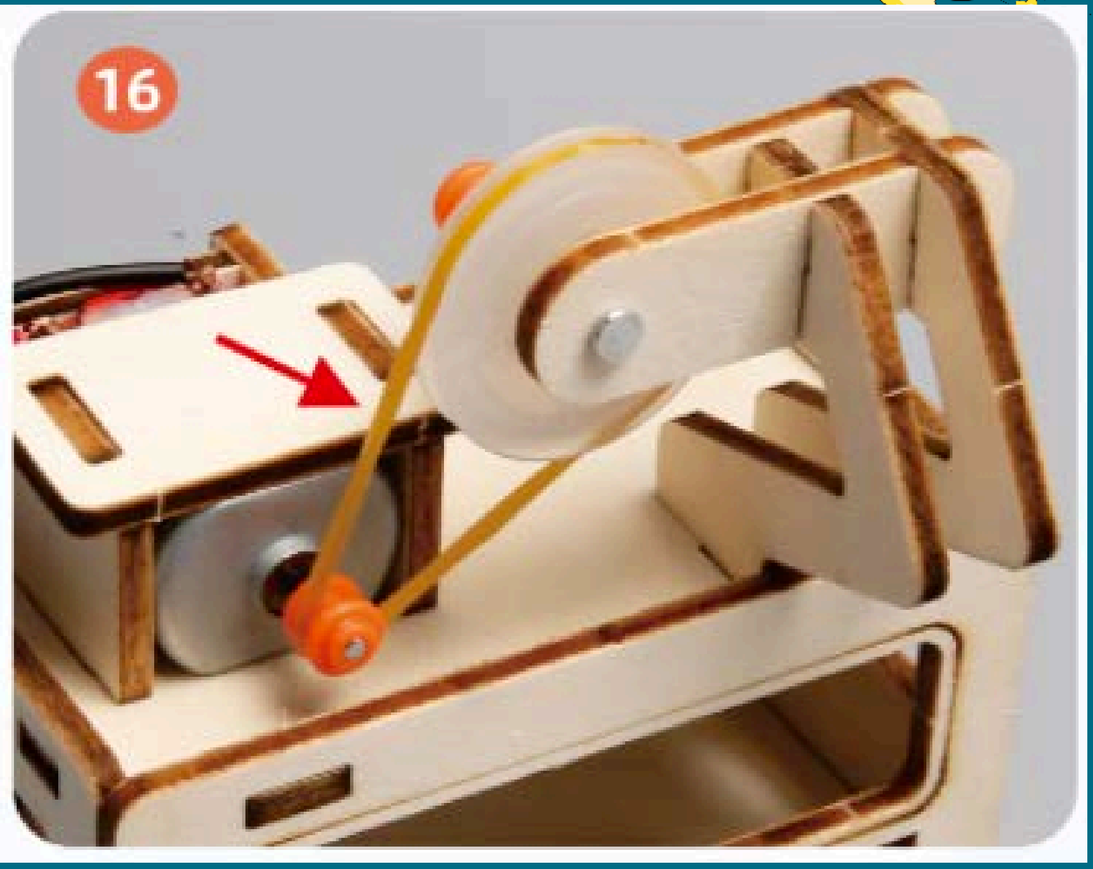
Use foam tape to attach the battery box to the bottom as shown. Prepare the DT21, wheel, and rubber band.



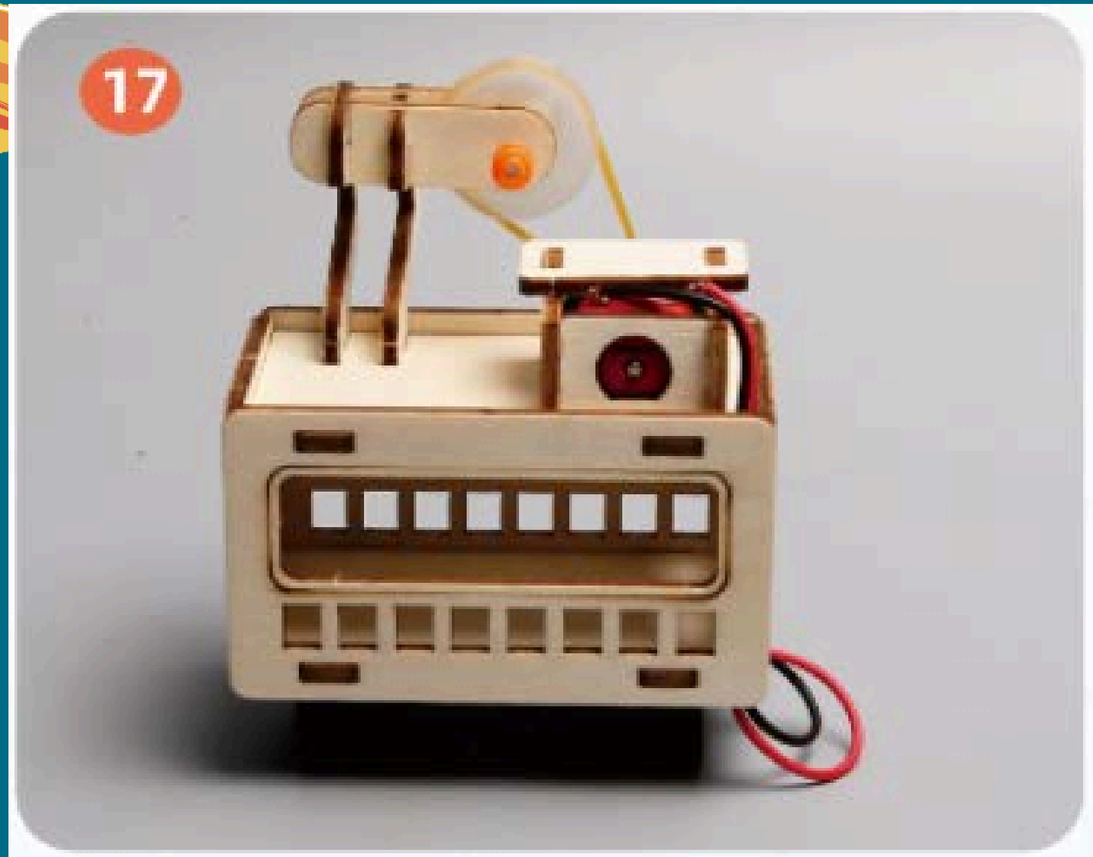
First, attach the rubber band to the wheel, then connect the wheel in between the two small boards with DT21.
Prepare rubber ring.



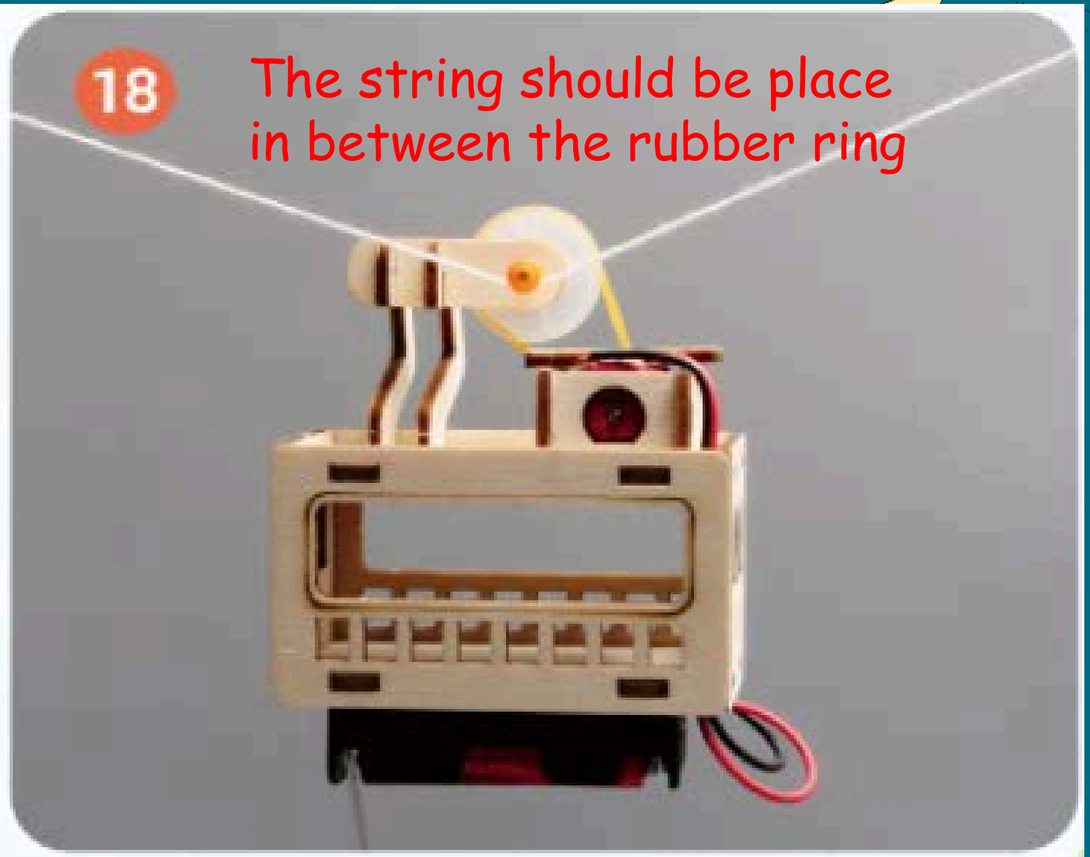
Install the rubber ring onto the DT21 shaft as shown.



Loop the rubber band that is on the wheel onto the motor as shown.



Assembly complete.



Tie the string at two end, place the cable car on the wire as shown and turn on the switch — the cable car will move along the line!

Science Knowledge

The cable car operates based on the conversion of electrical energy into kinetic energy and frictional force.
When the switch is turned on, the battery powers the motor.
The motor converts electrical energy into kinetic energy, driving the rubber wheel to rotate.
The rotating rubber wheel creates friction with the rubber band, which drives the cable car to move.