



Ferris Wheel

Success



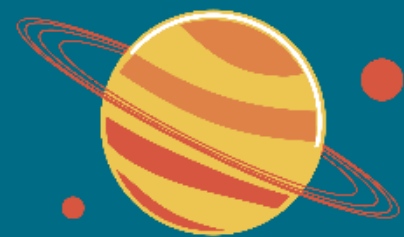
Experiment Objectives

1. Learn about the development history of the Ferris wheel
2. Learn how to assemble a Ferris wheel
3. Inspire children's interest in learning through scientific experiments and cultivate their scientific thinking



Introduction



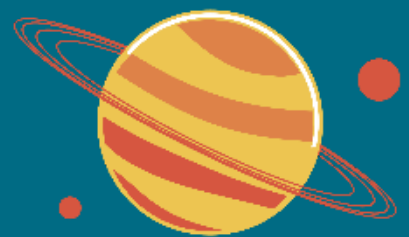


During the School holiday in November,
where did the children and their
parents go to have fun?



Do the children recognize the place in the picture?





What fun things are there
in an amusement park?

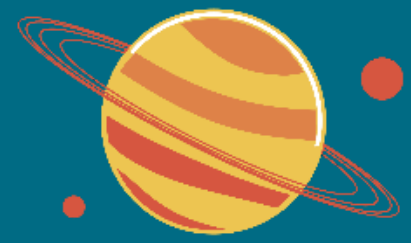




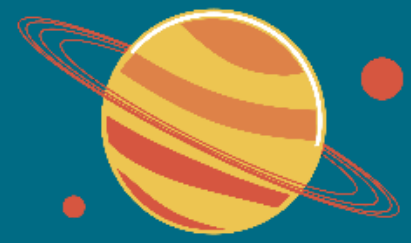
Carousel



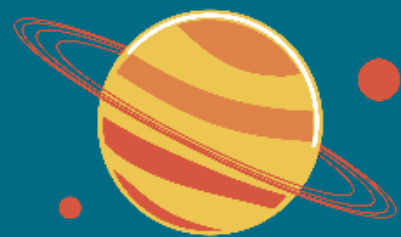
Ferris Wheel



Roller Coaster

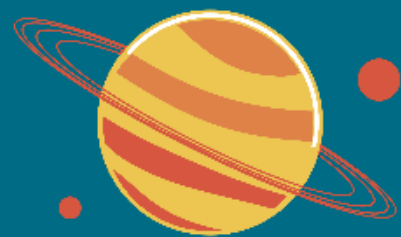


Pirate Ship



Which amusement park ride do you like the most?



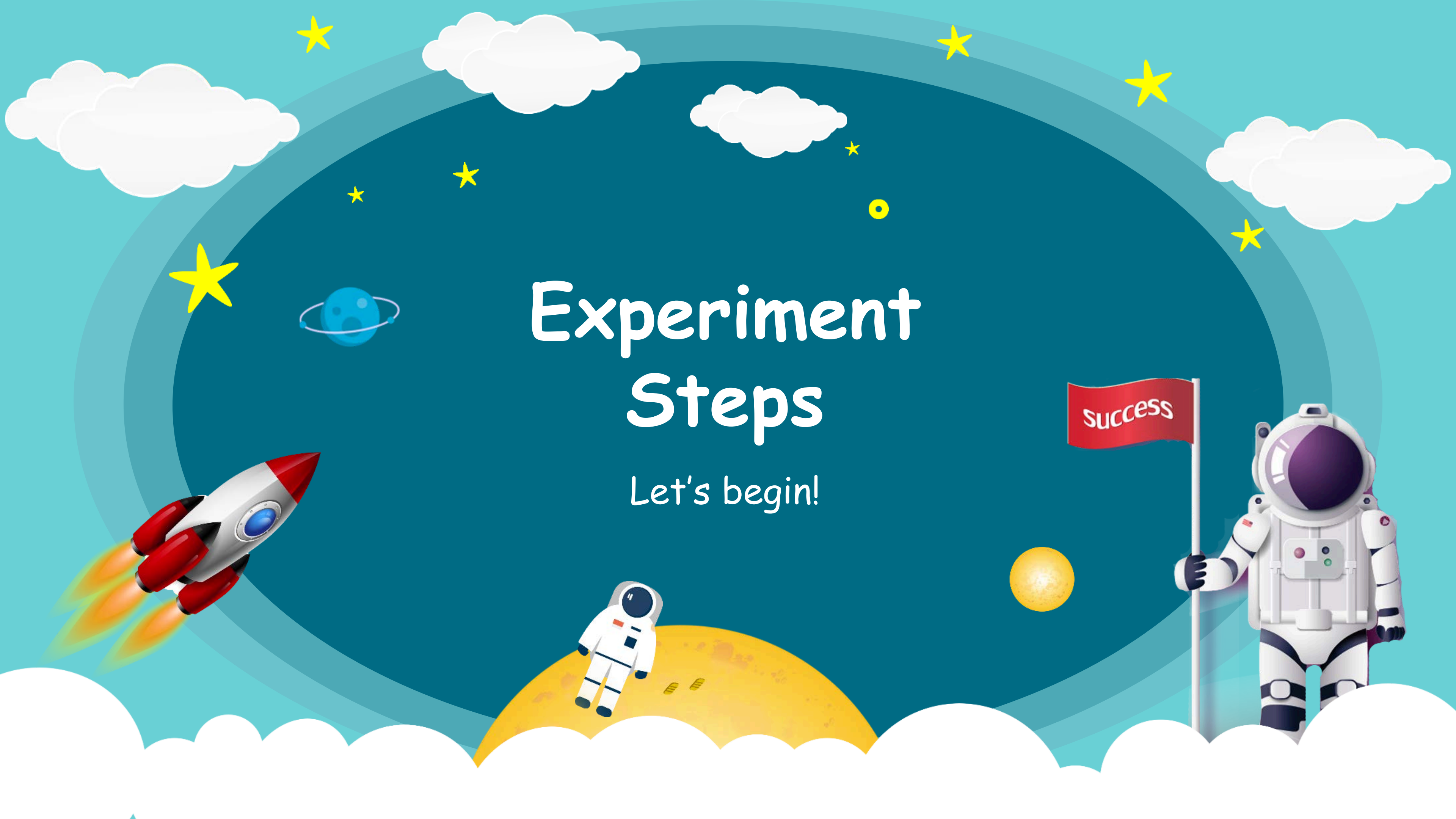


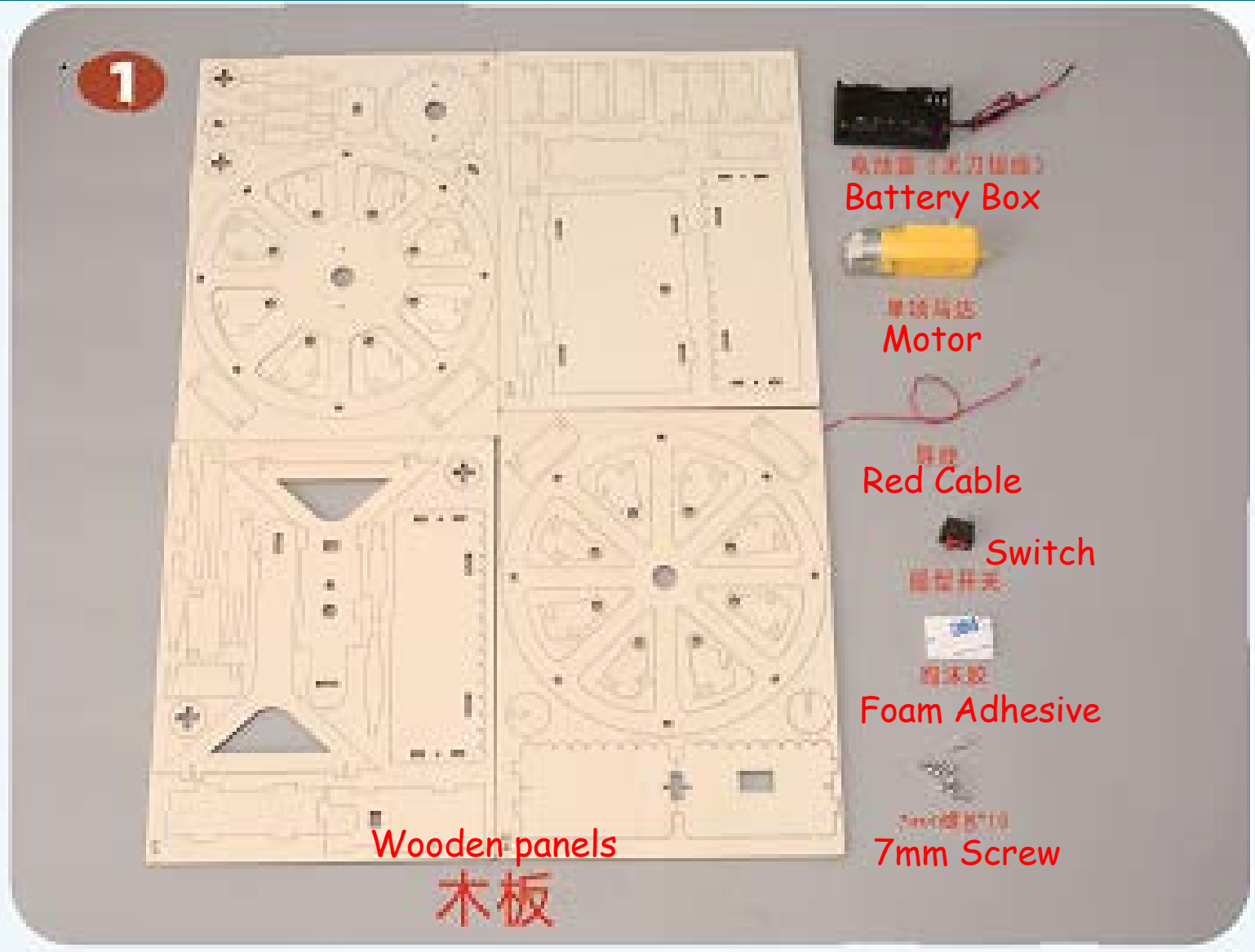
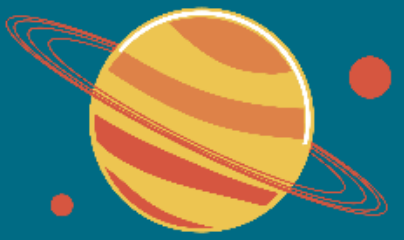
In this lesson, let's
make a magical and
interesting Ferris
wheel!



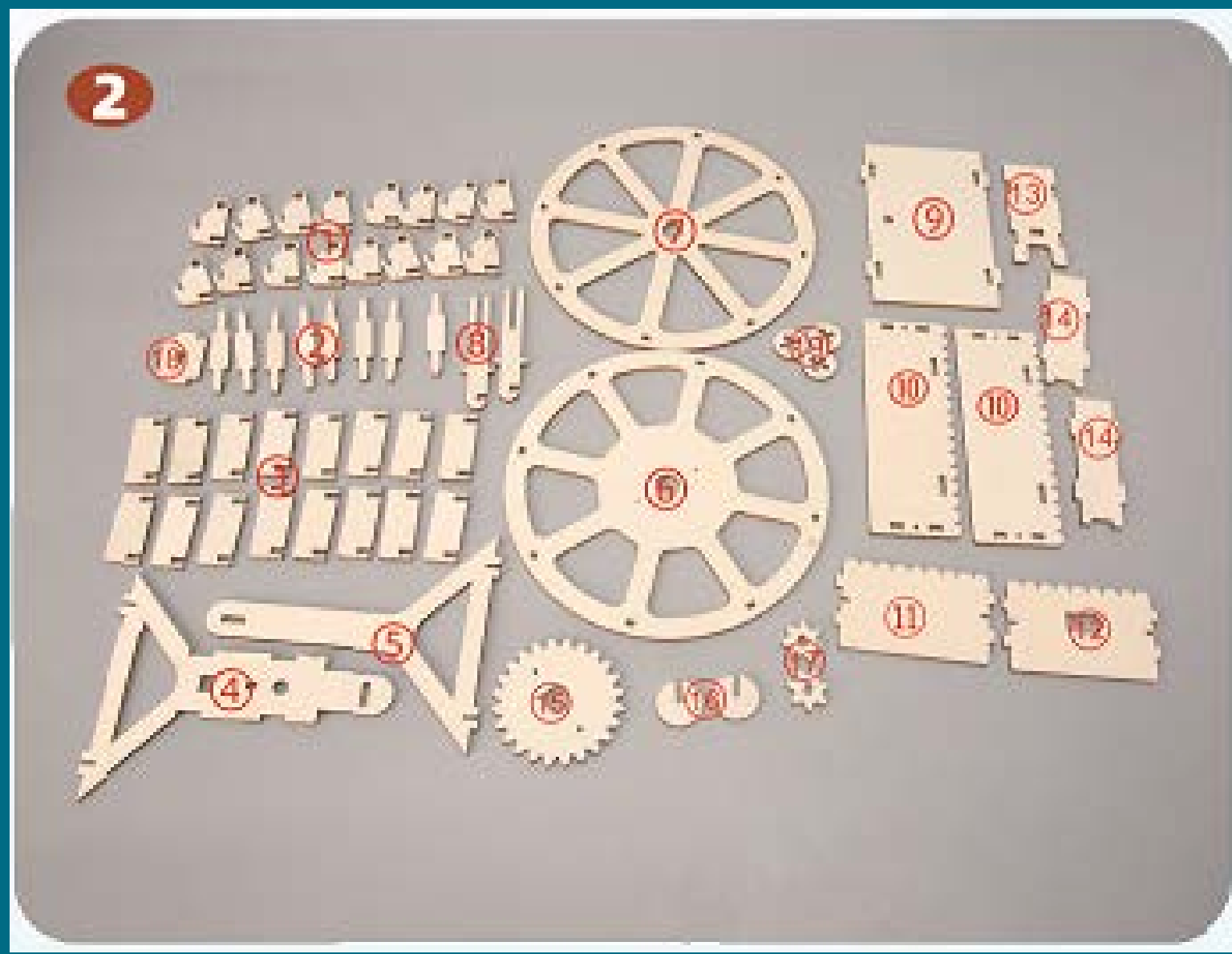
Experiment Steps

Let's begin!

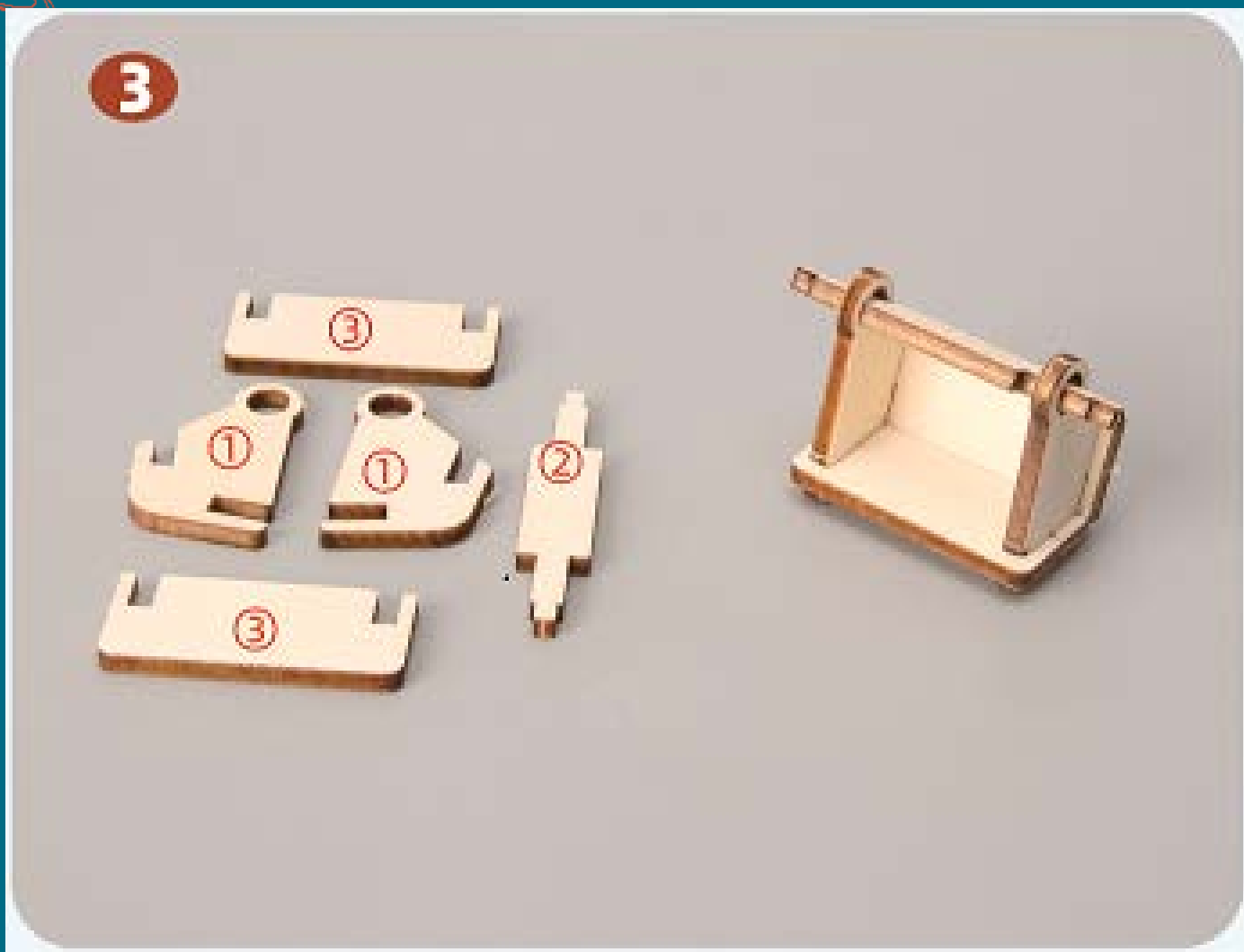
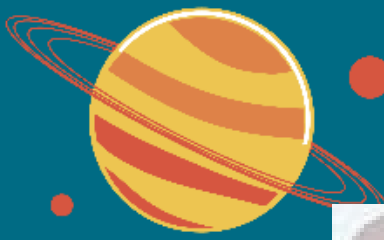




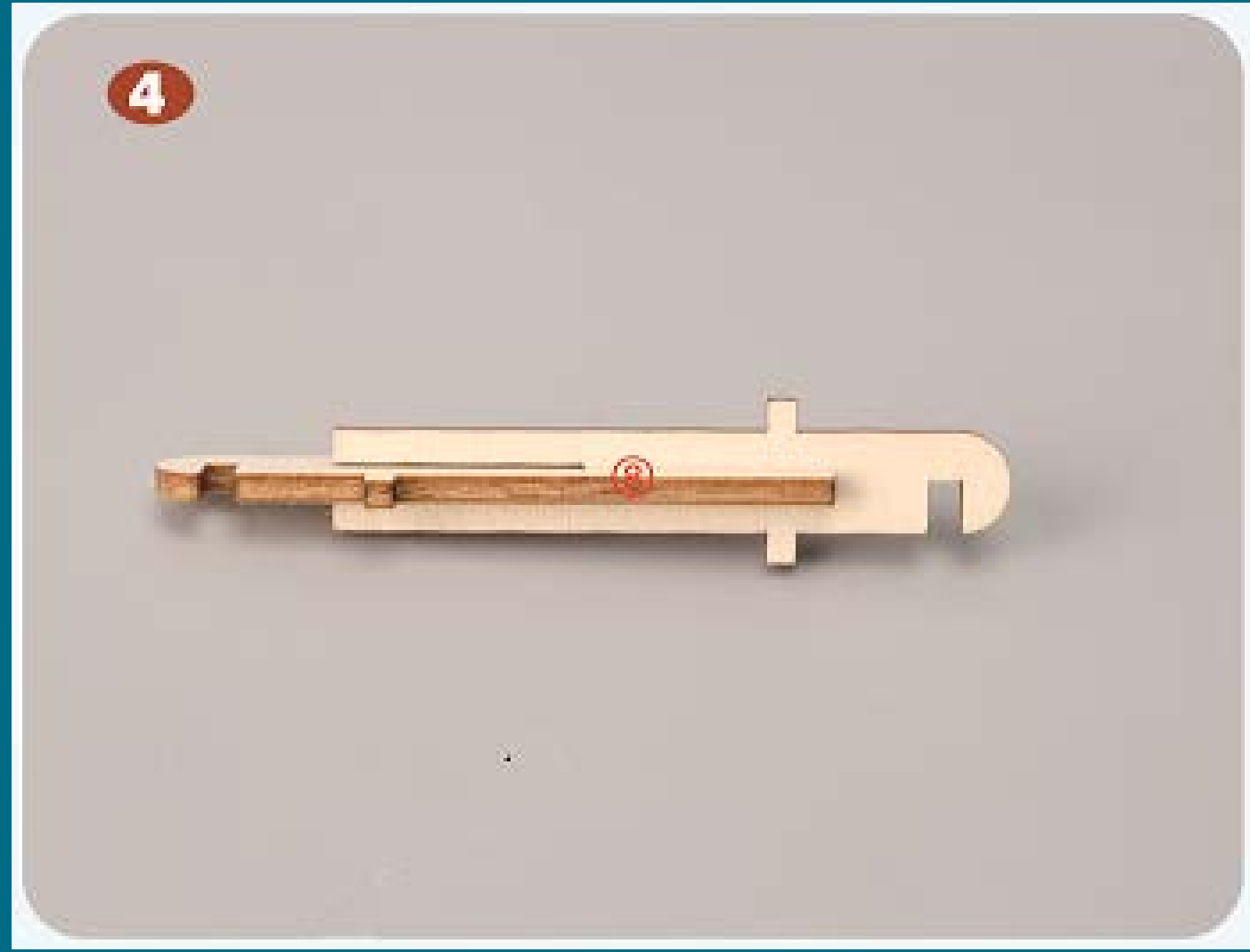
Recognize the materials



Break off all the wooden parts and check the quantities.

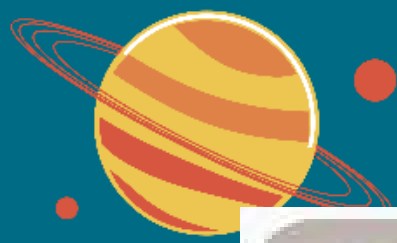


Assemble as shown — there are 8 identical pieces.



Use two pieces labeled No. 8 and insert them together as shown.



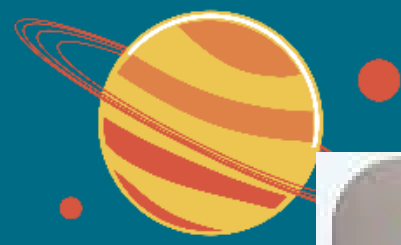


Take the wooden piece labeled No. 7 and the 8 components from Step 3, assemble them together as shown.

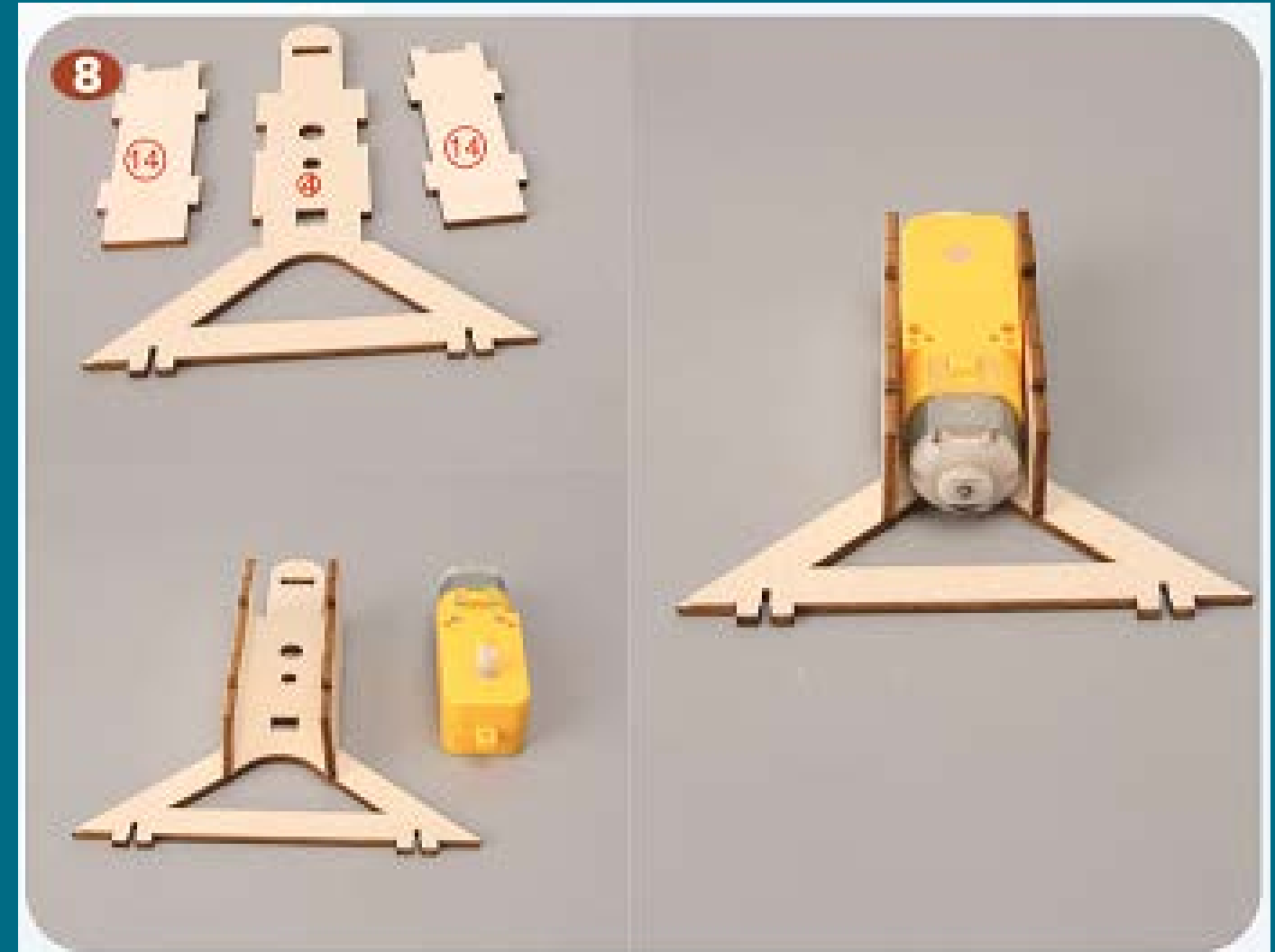


Then take the wooden piece labeled No. 6 and assemble it. (Be careful to align both sides properly.)



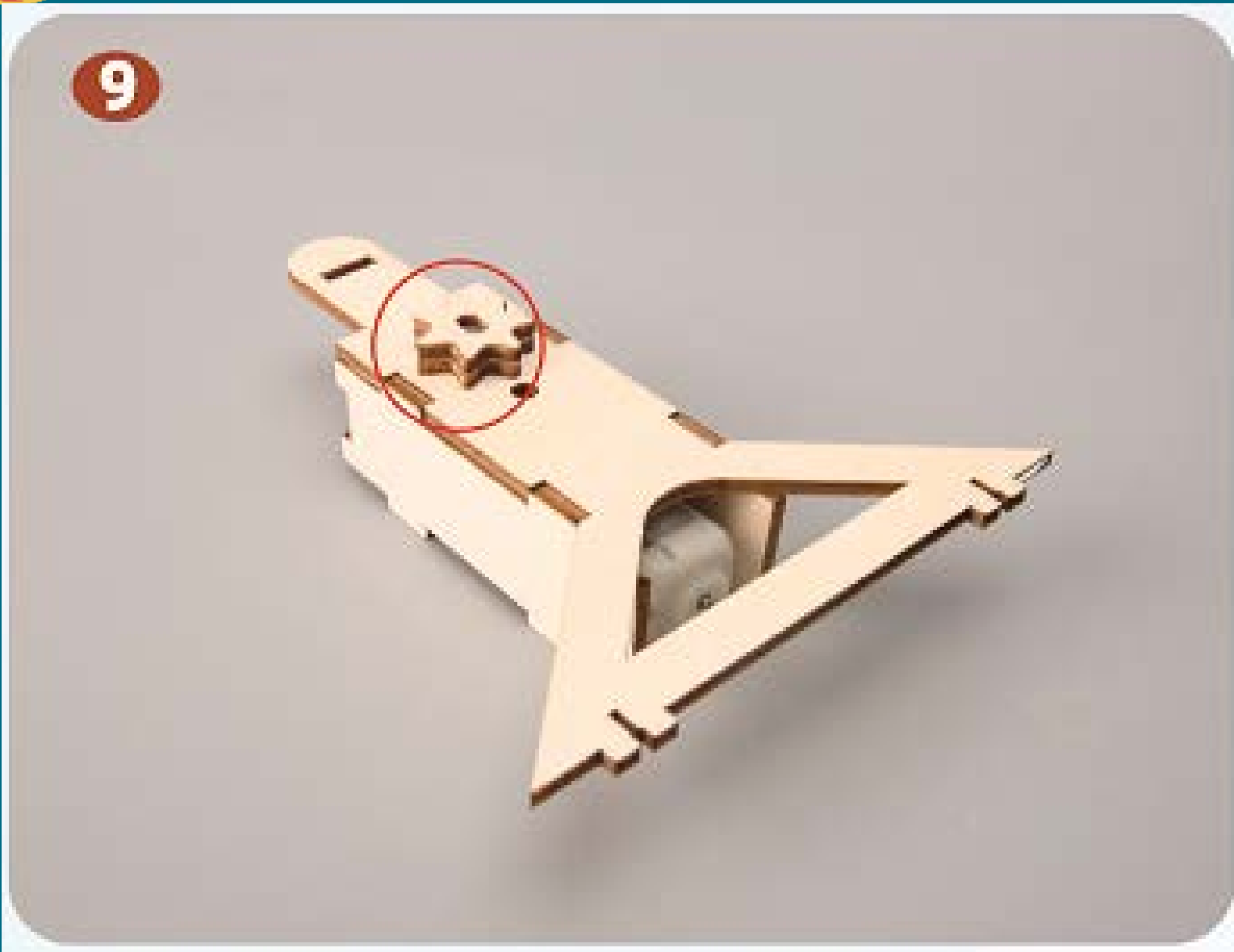


Align the small hole of No.15 & No.6 fix it with a 7mm screw.

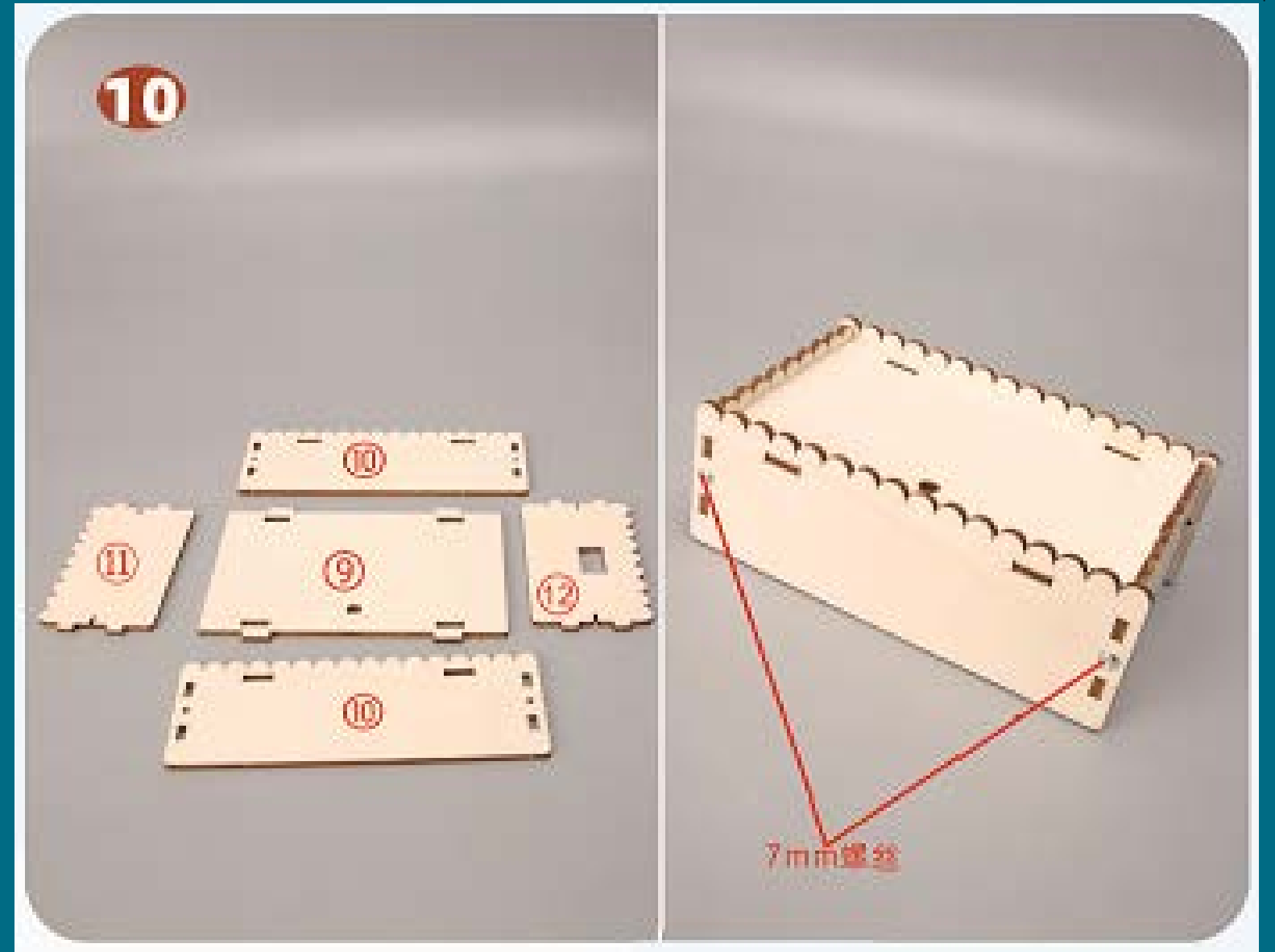


As shown, combine boards No. 4 and No. 14 with the motor.

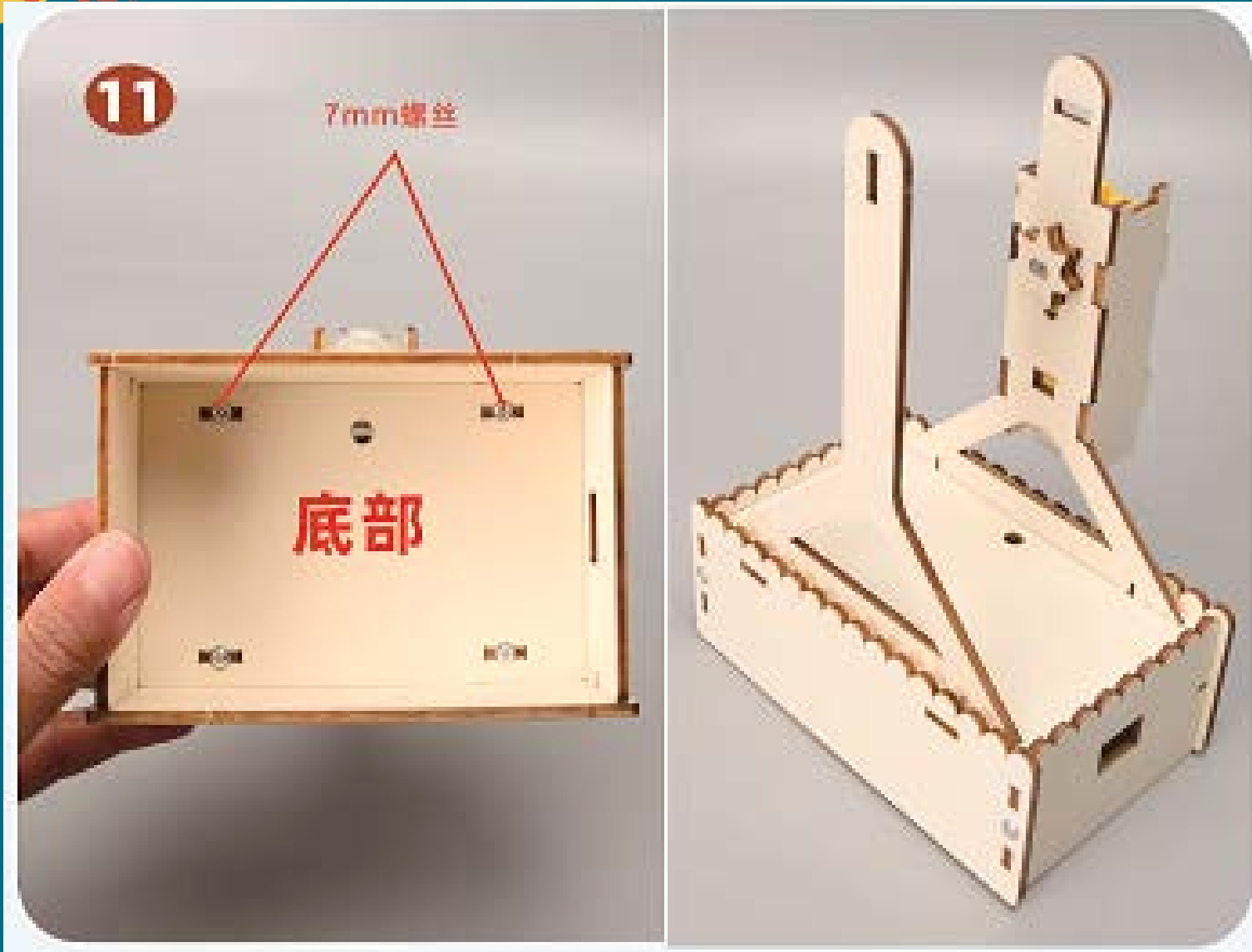




Align the holes of the two gears labeled No. 17 and attach them to the motor with screws.



As shown, combine boards No. 9, 10, 11, and 12, and fix them with 7mm screws.

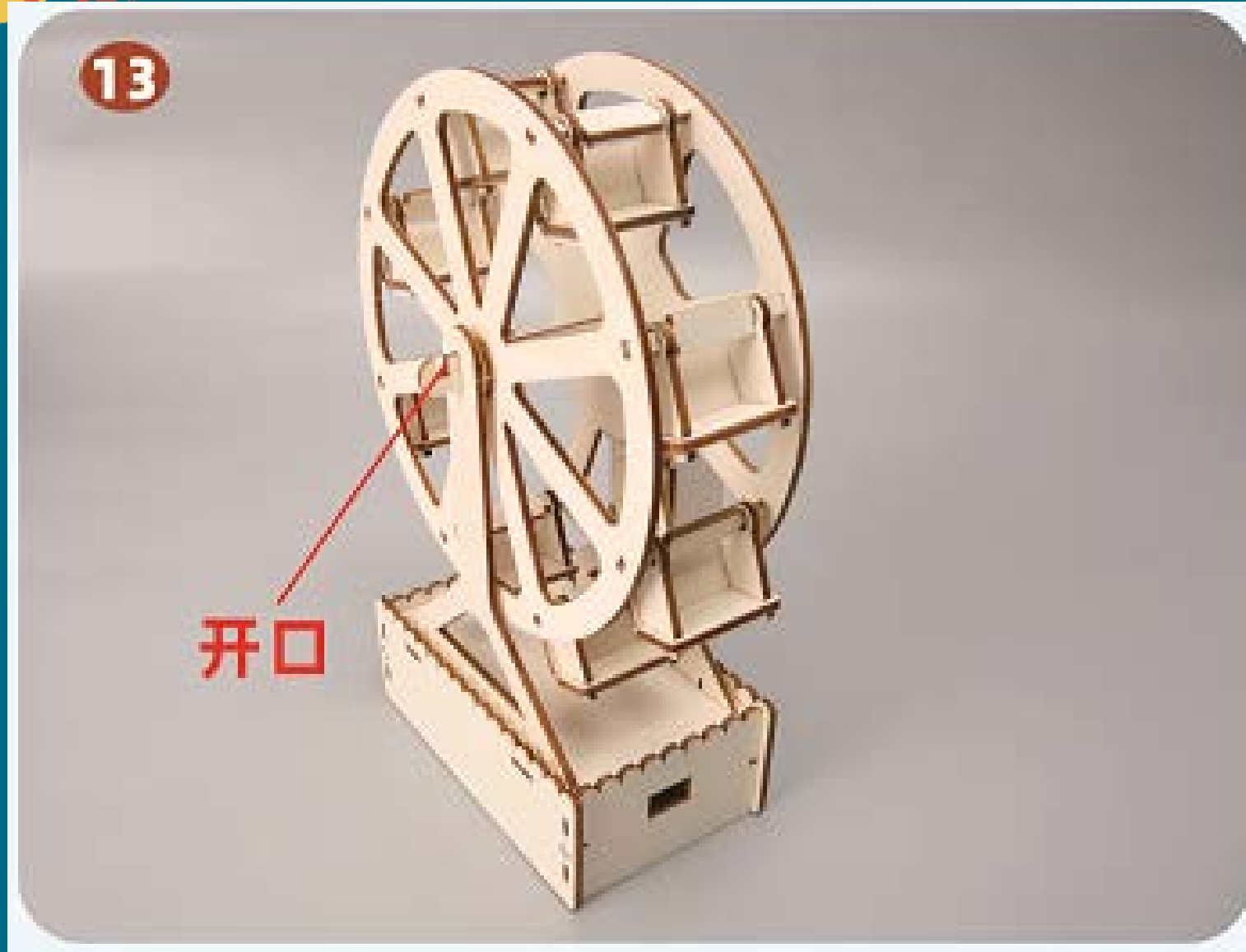


Assemble the base as shown and fix it with 7mm screws.

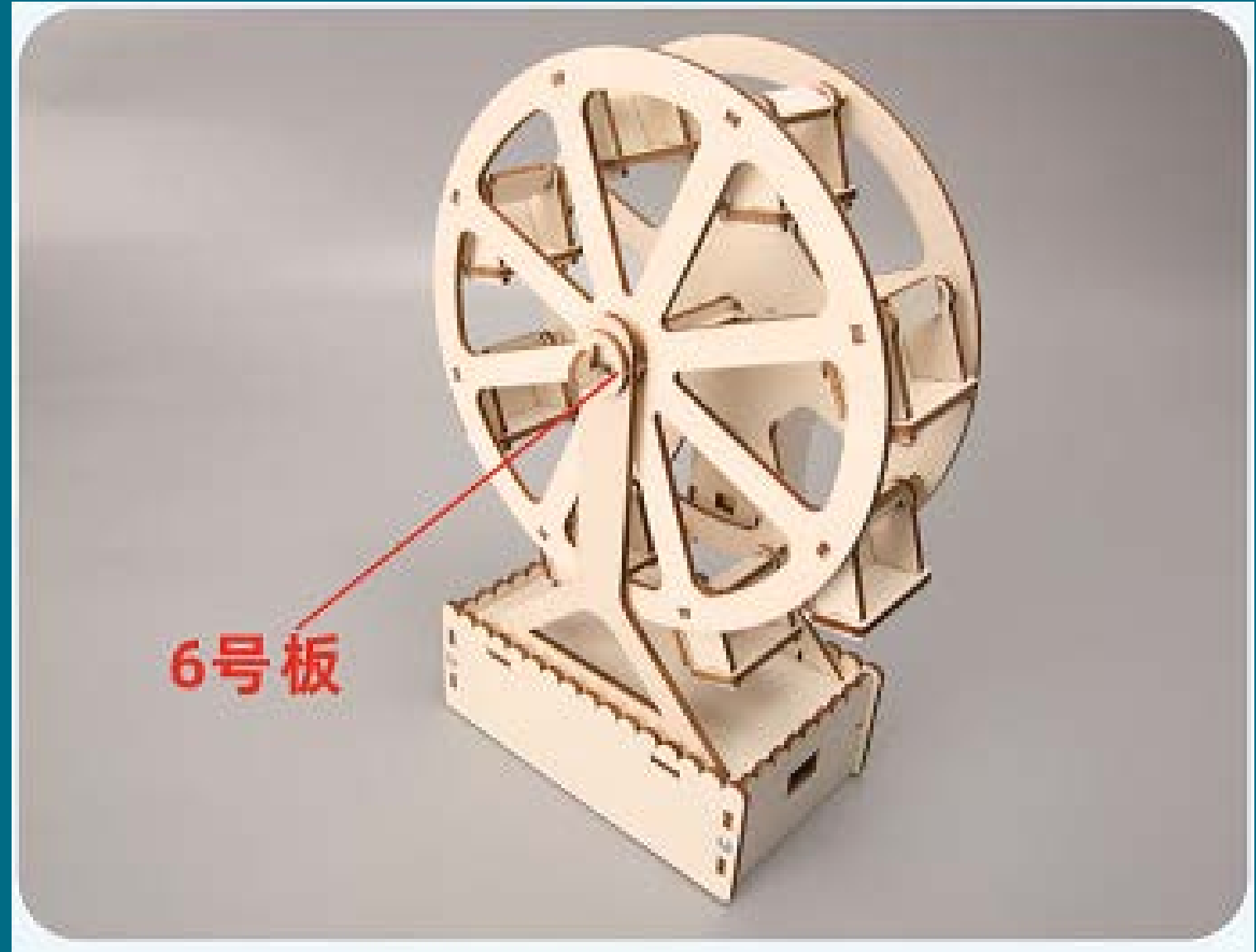


Attach the No. 19 boards on both sides as shown.



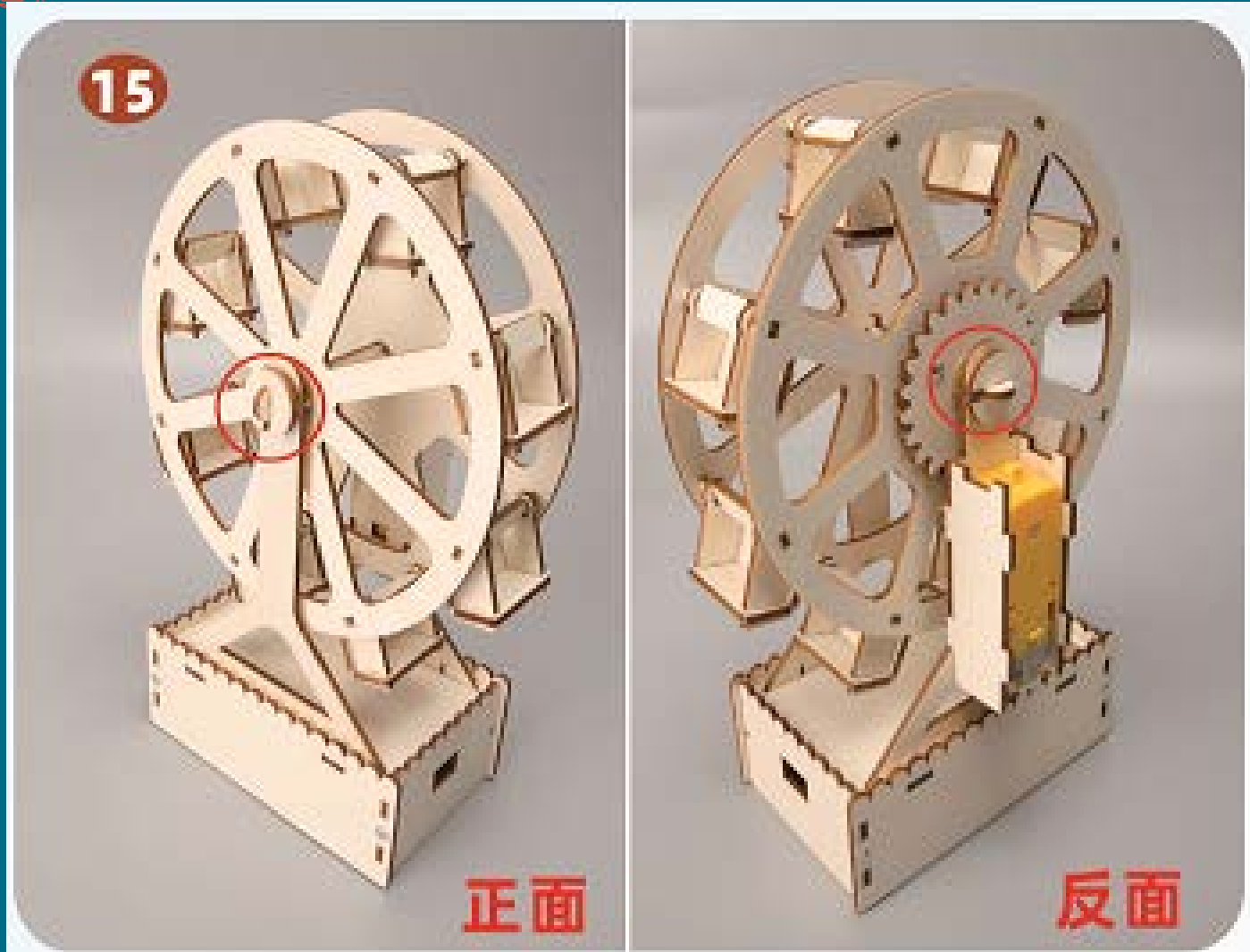
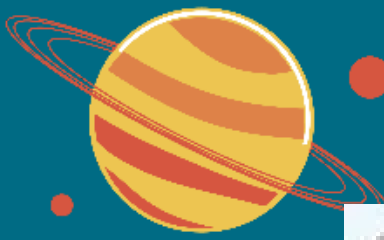


Keep the opening facing upward as shown.

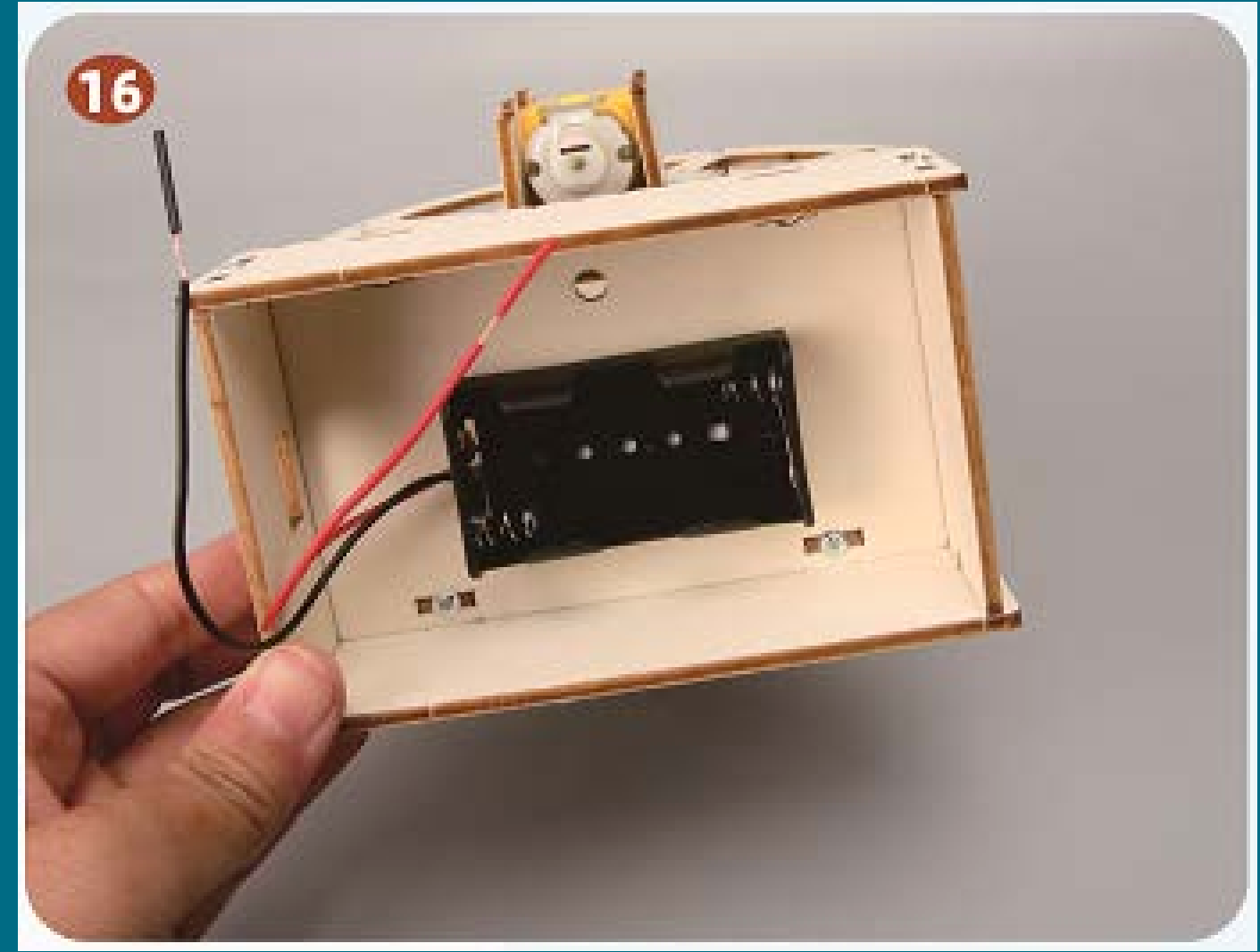


Install the No. 16 board in the position shown.

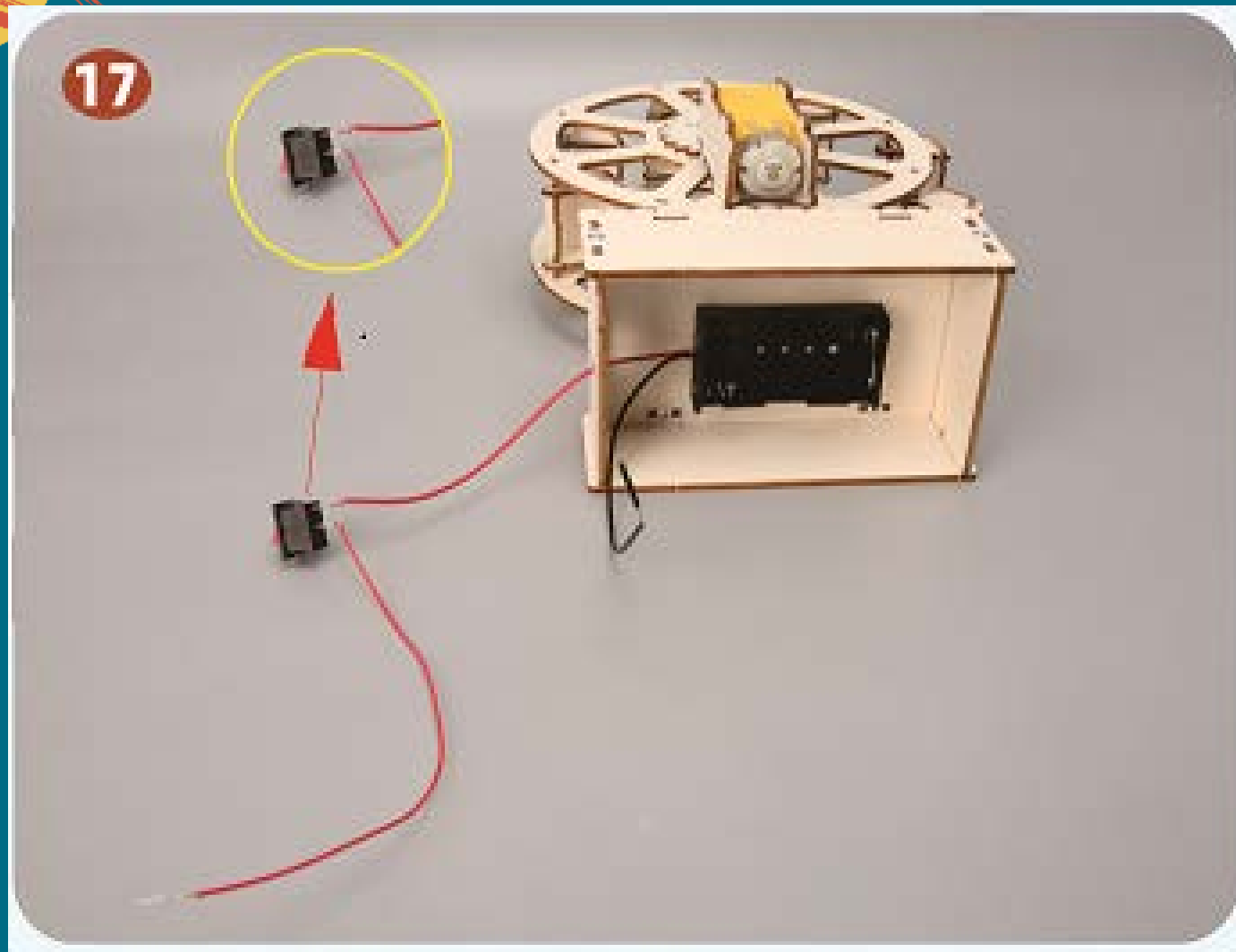




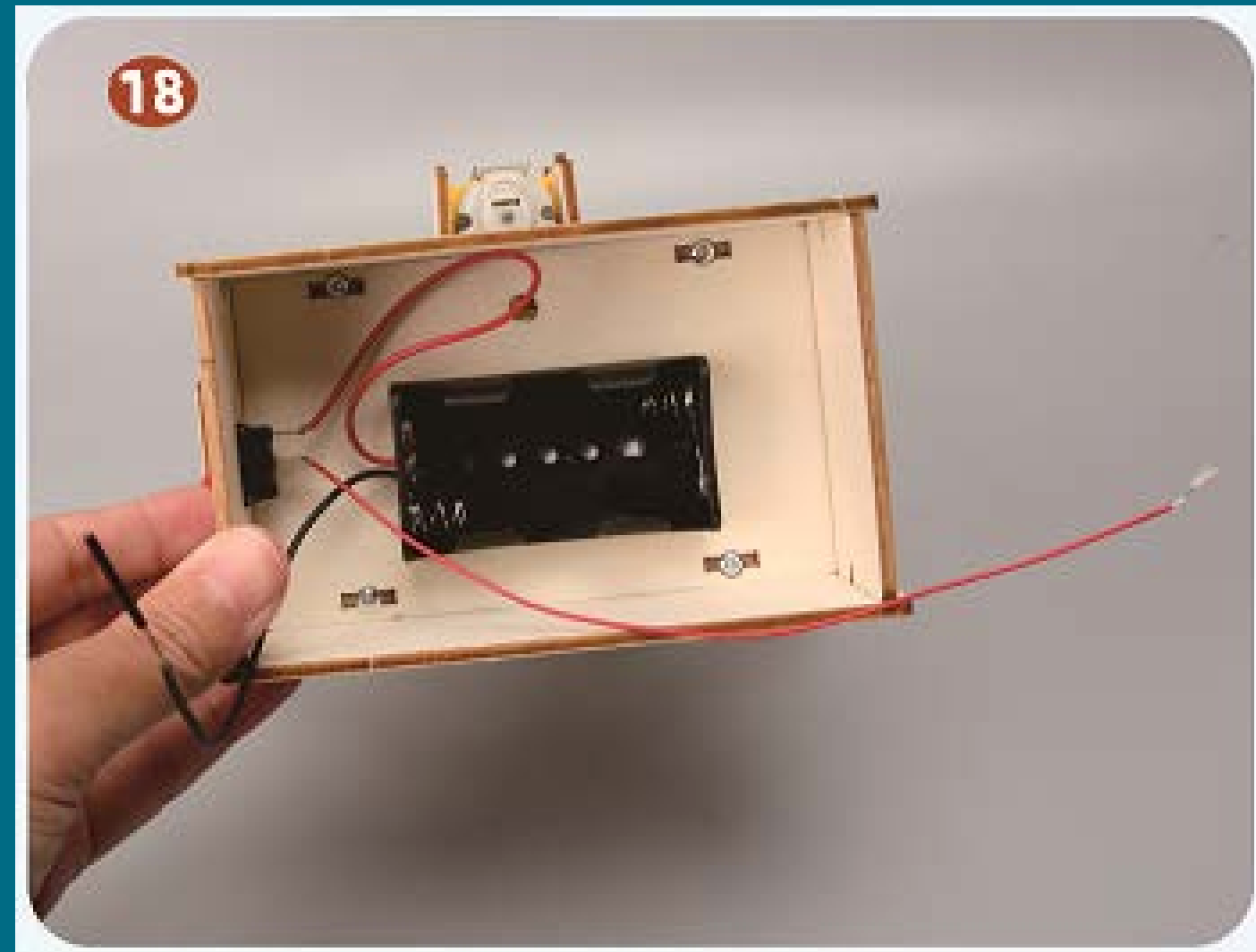
Insert the No. 16 wooden boards on both sides.



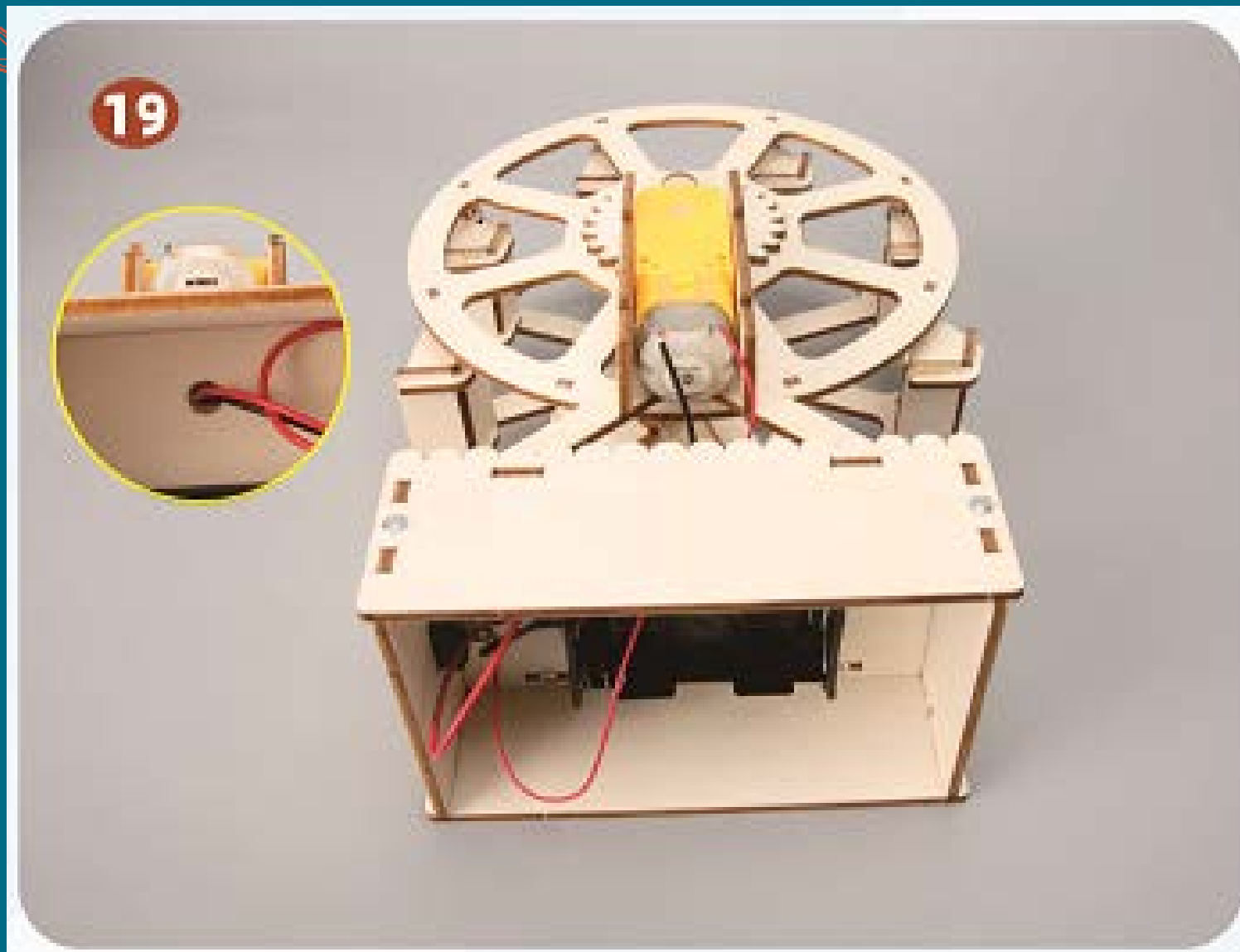
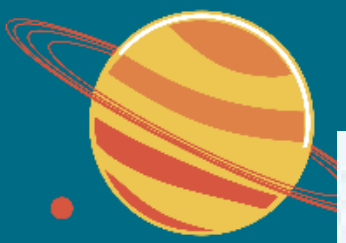
Fix the battery box with foam adhesive as shown.



Connect the wires from the battery box to the switch as shown.



Install the switch as shown.



Pass the red and black wires through the round hole and connect them to the motor as shown.



Assemble boards No. 13 and No. 18 as shown. (The product assembly is now complete.)

Experiment Principle





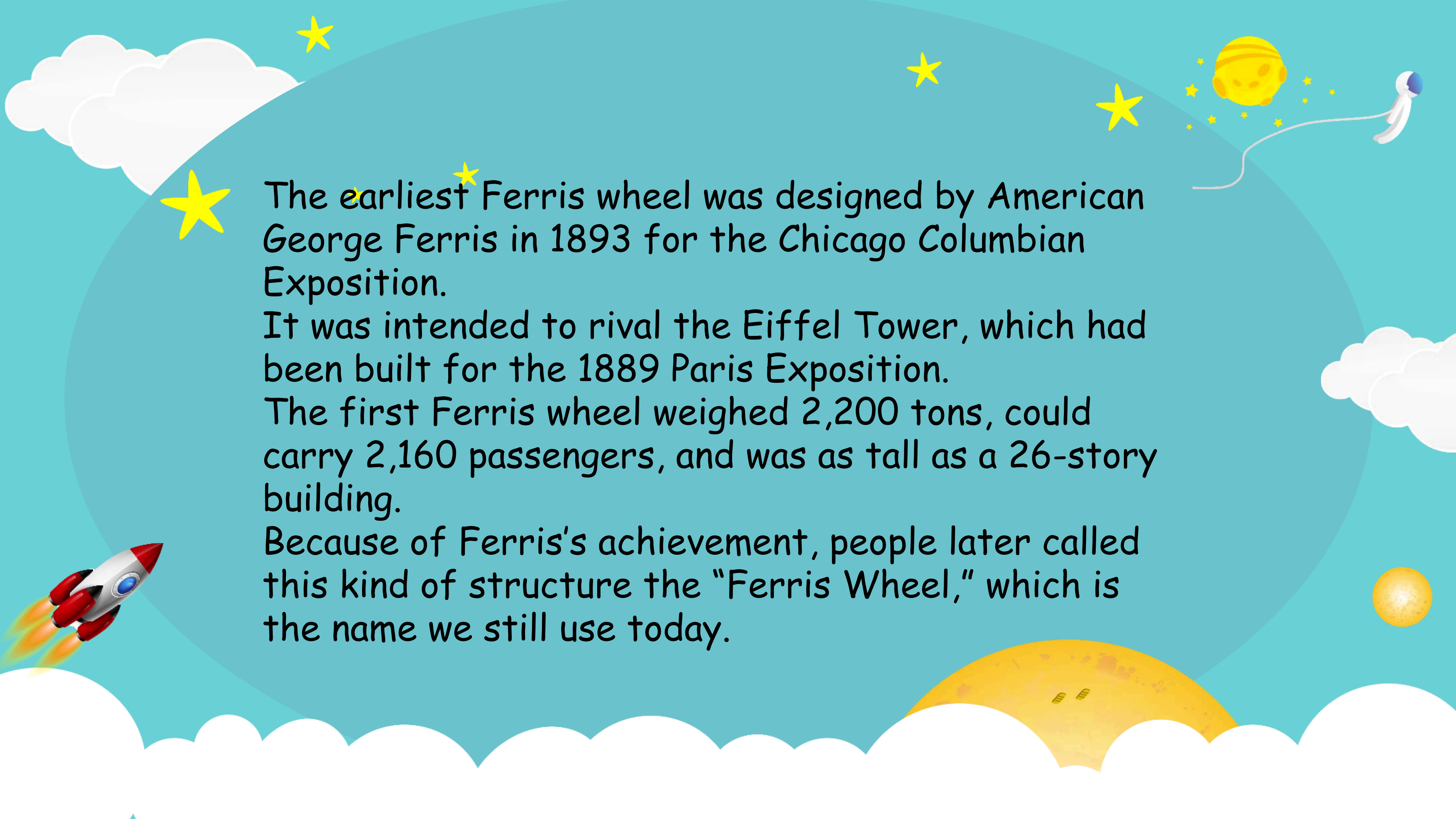
Principle

The working principle of the Ferris wheel is that the electric motor drives a speed reducer, converting high-speed, low-torque rotation into low-speed, high-torque mechanical power.

This power is then transmitted to the wheel through an intermediate mechanism—usually tires—that are both elastic and strong, causing the wheel to rotate slowly.

History of the Ferris Wheel





The earliest Ferris wheel was designed by American George Ferris in 1893 for the Chicago Columbian Exposition.

It was intended to rival the Eiffel Tower, which had been built for the 1889 Paris Exposition.

The first Ferris wheel weighed 2,200 tons, could carry 2,160 passengers, and was as tall as a 26-story building.

Because of Ferris's achievement, people later called this kind of structure the "Ferris Wheel," which is the name we still use today.



Tianjin Eye

Officially named the Tianjin Yongle Bridge Ferris Wheel, it has a diameter of 110 meters and 48 transparent cabins that can rotate 360 degrees.

It spans the Haihe River, connecting Hebei District and Hongqiao District.

It is a Ferris wheel built on a bridge, serving both sightseeing and transportation purposes.

The Tianjin Eye is the only Ferris wheel in Asia built on a bridge and is one of Tianjin's landmarks.



Canton Tower Ferris Wheel

Located at the top of the Canton Tower, 450 meters above the ground, it is the highest Ferris wheel in the world.

It officially began operation on September 1, 2011.

It consists of 16 "crystal" sightseeing cabins that rotate horizontally.

A full rotation takes about 20 minutes, and each cabin can hold 4-6 passengers, allowing visitors to enjoy panoramic views of Guangzhou's night skyline.