

Bulldozer



Experiment Objectives

1. To gain a basic understanding of a bulldozer.
2. To complete the hands-on experiment.
3. To inspire children's interest in learning through scientific exploration.

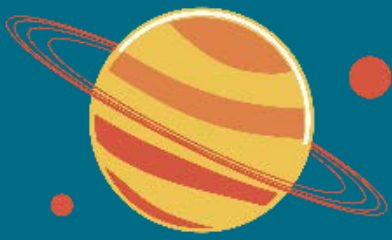


Introduction



Do you know what the machine in the picture is?





Let's build a fun little toy
together today —

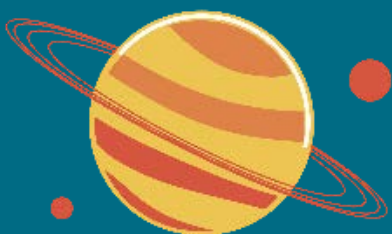
A Bulldozer!



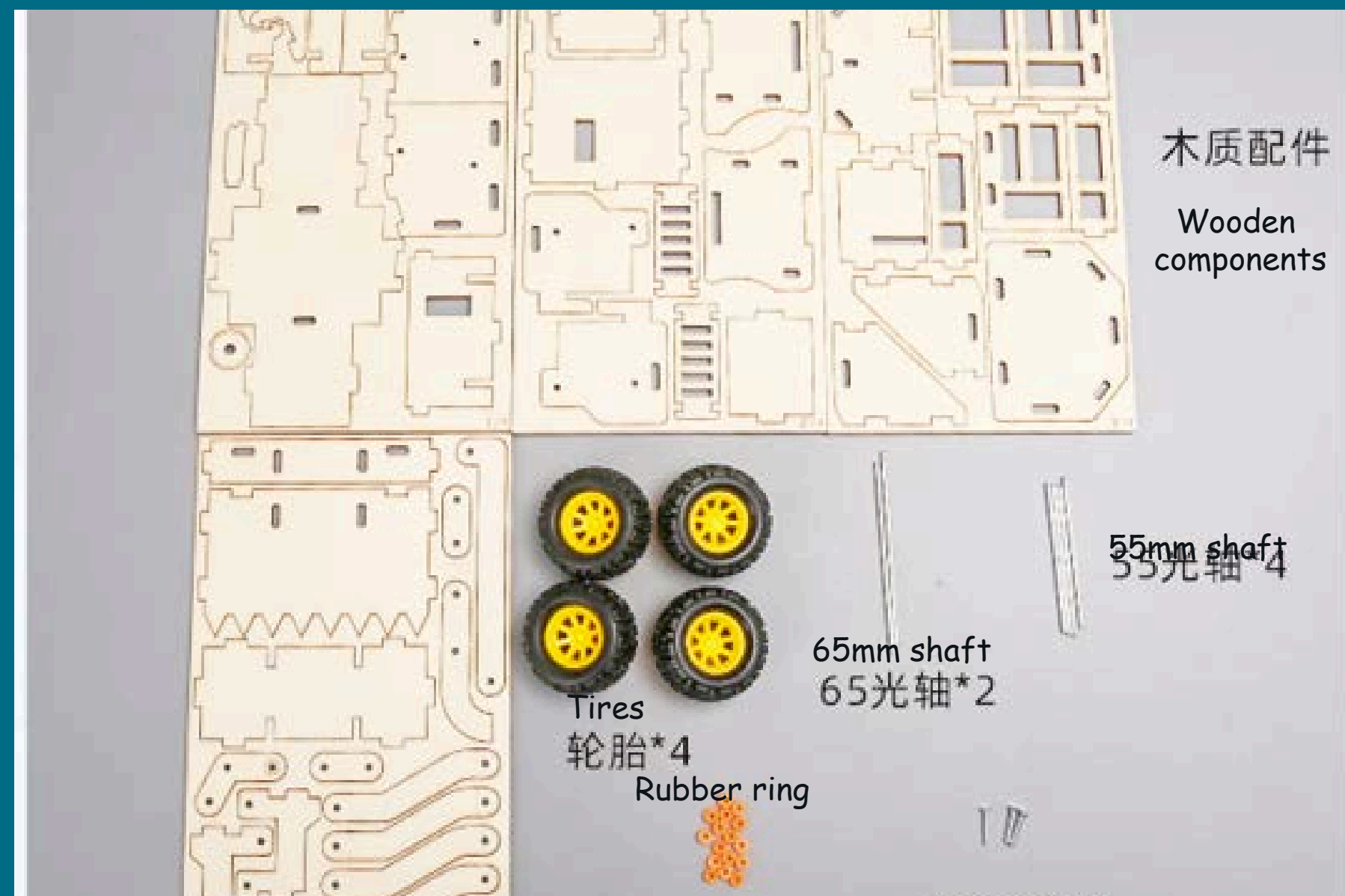
Experiment Steps

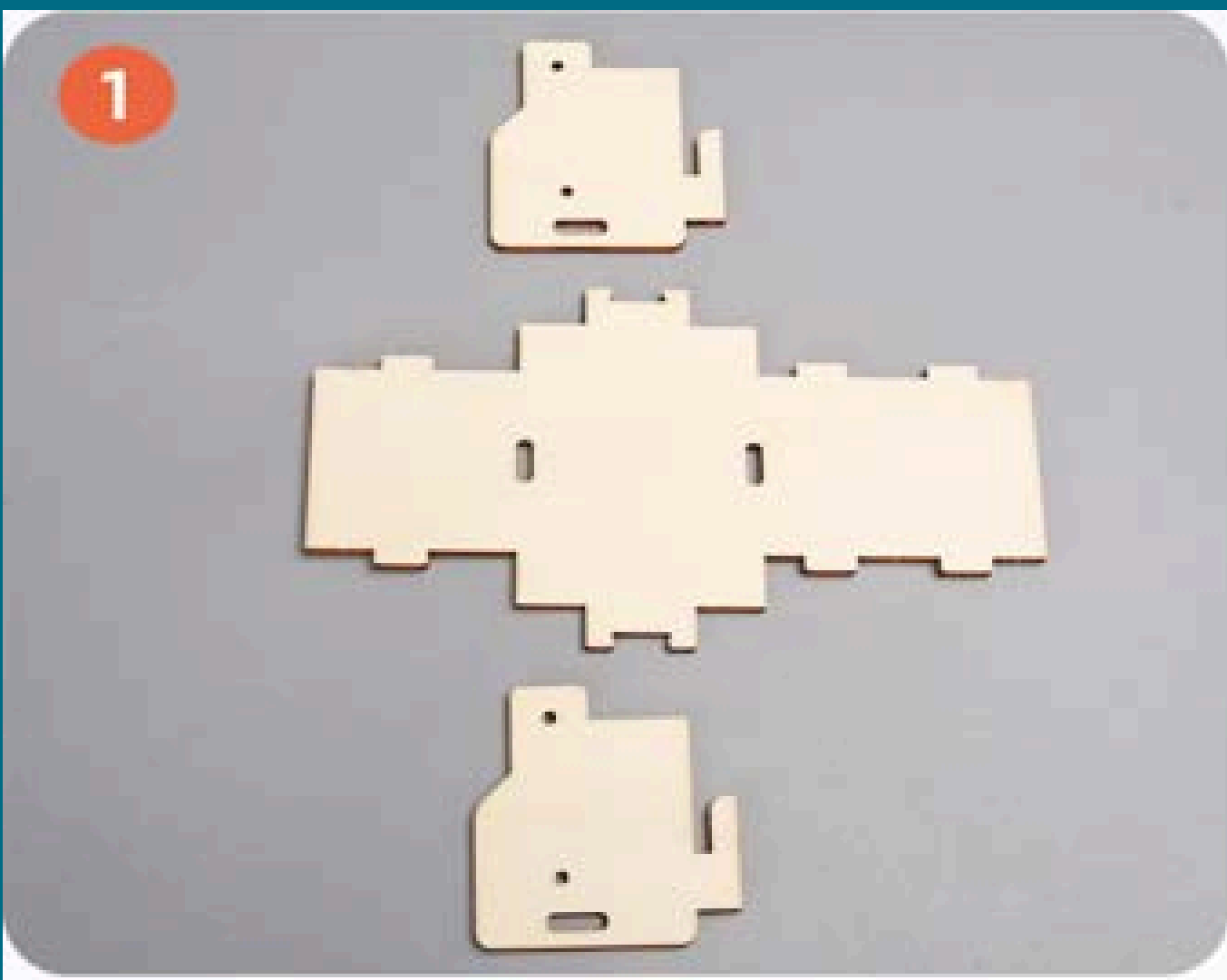
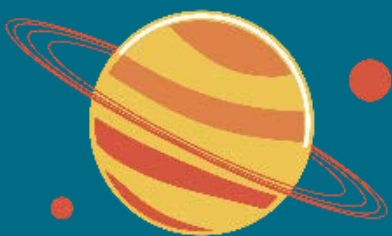
Let's get started!





Recognizing the Materials

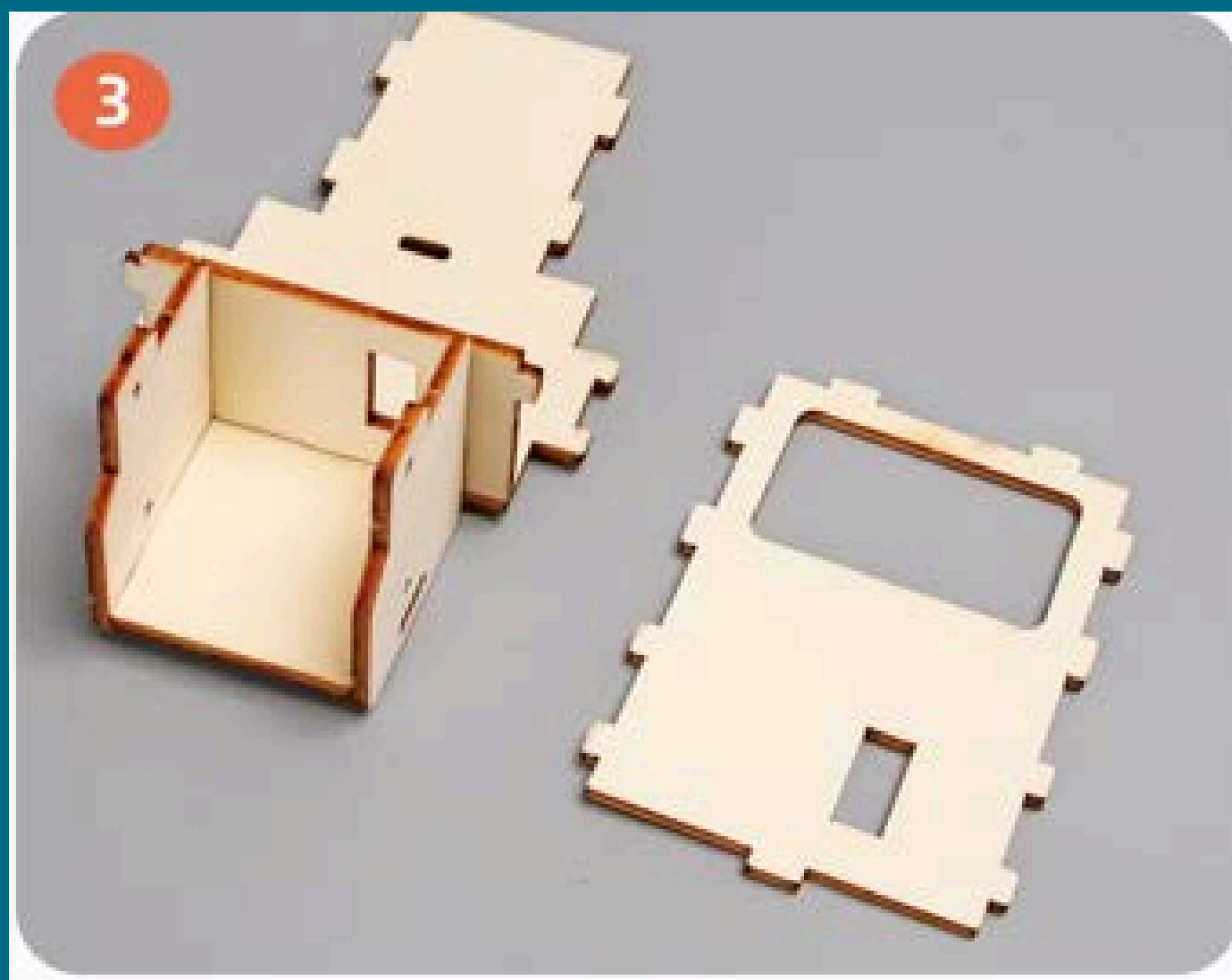
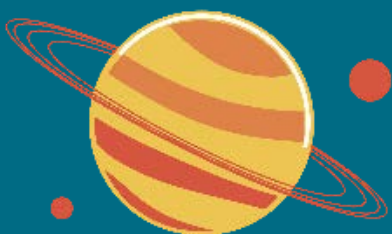




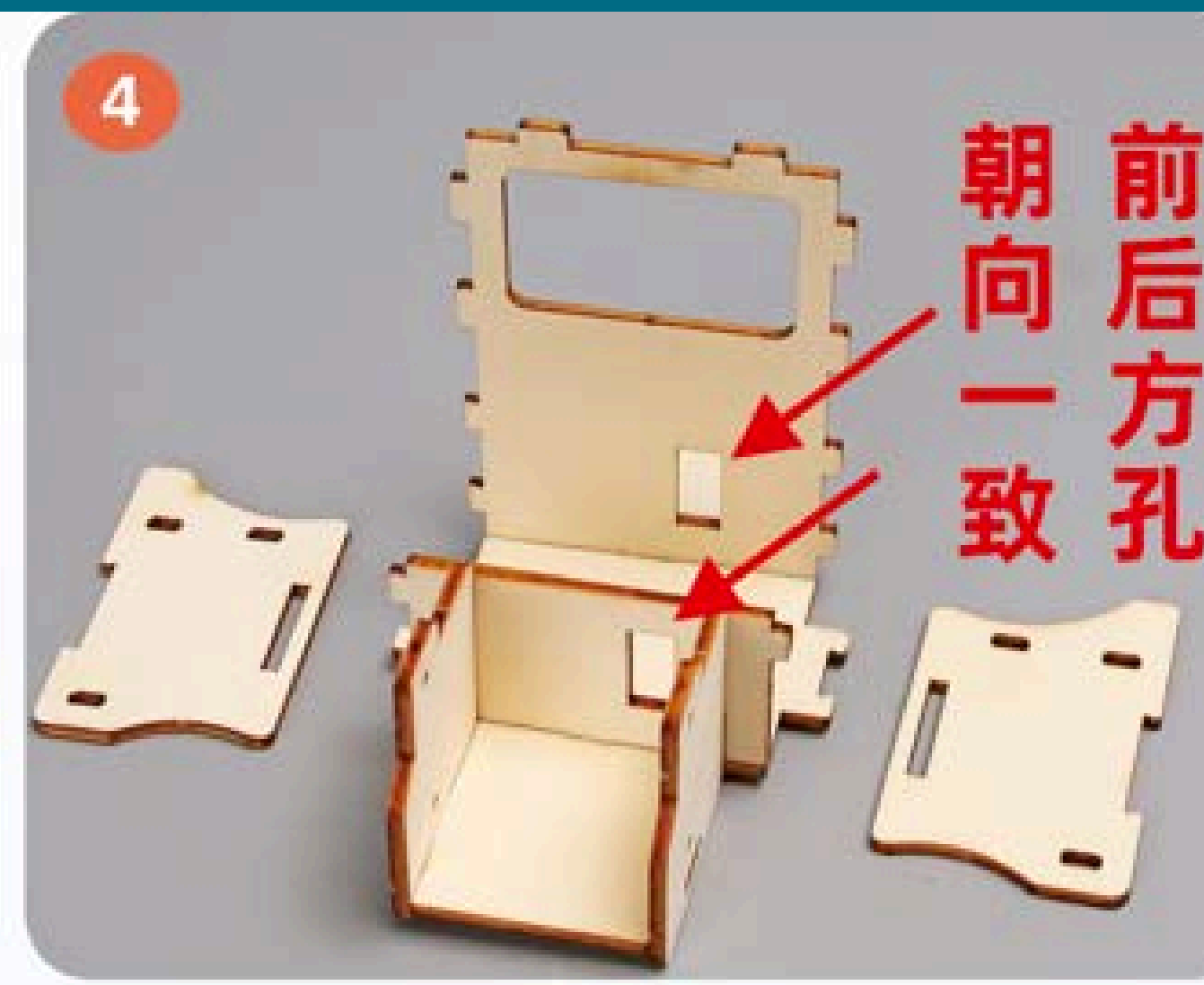
Prepare the base wooden parts as shown.



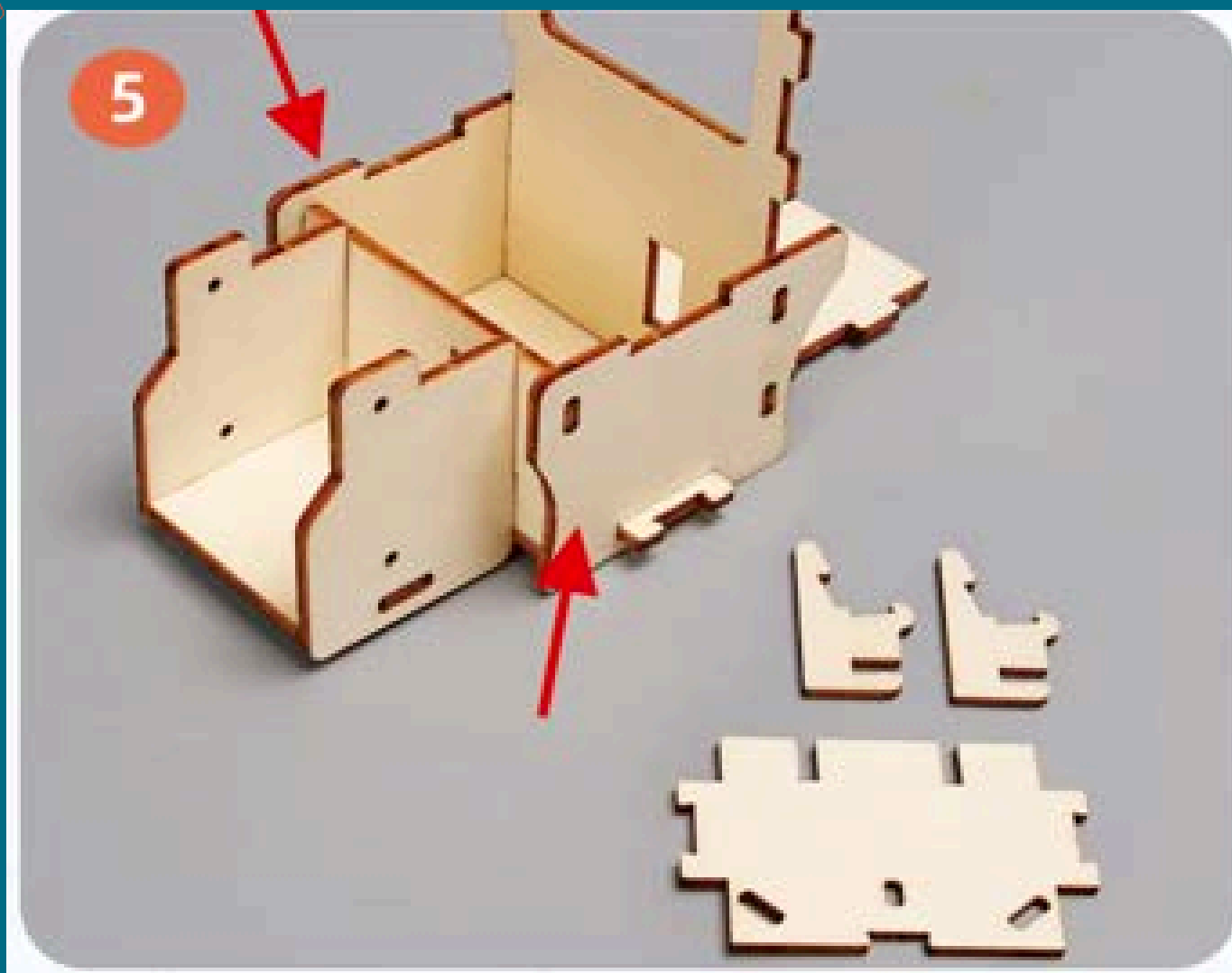
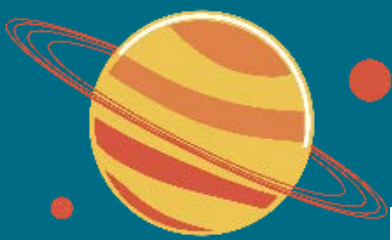
Pay attention to the direction of the base plate when inserting the tabs.



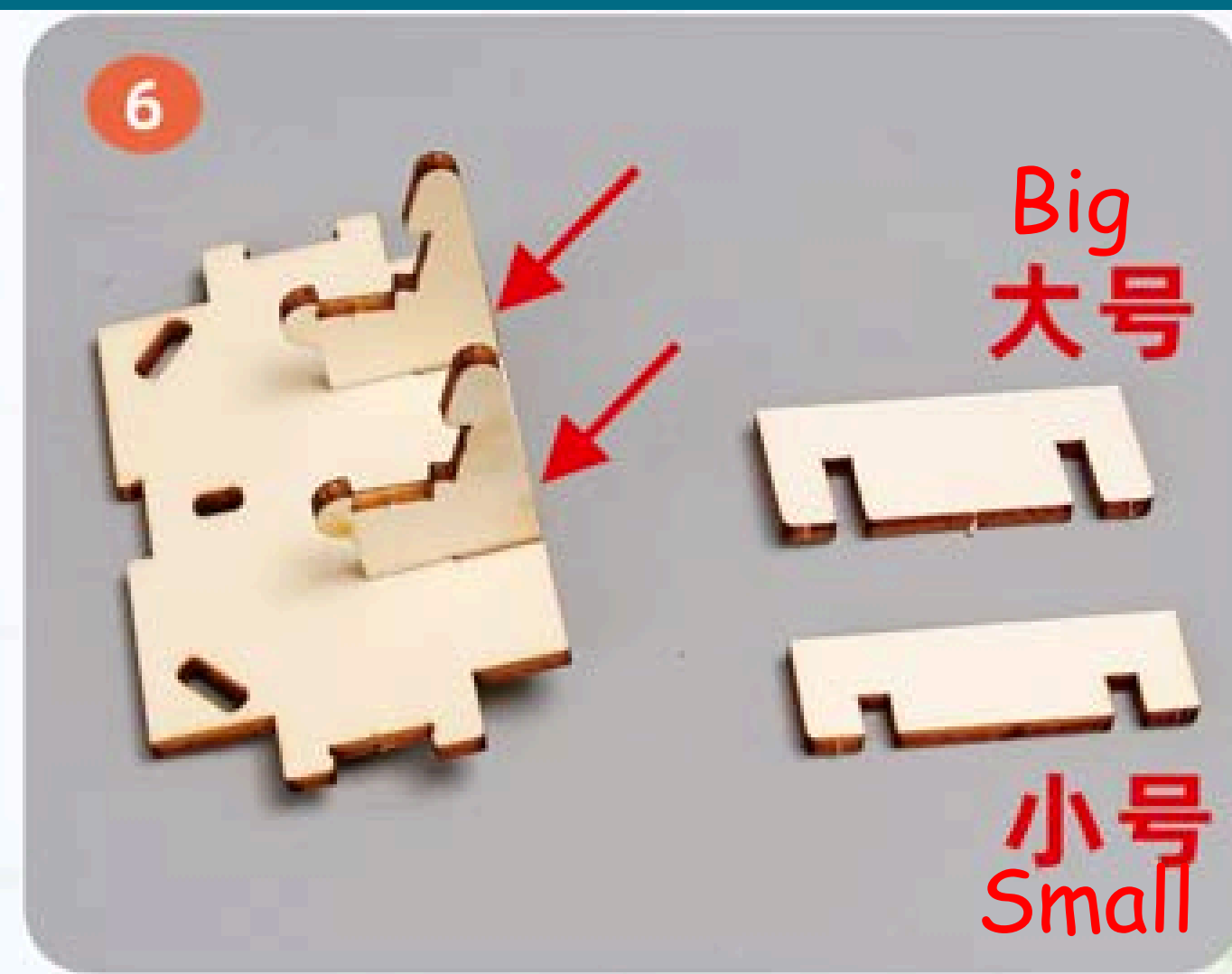
Assemble the side panels as shown.



Ensure the front and rear holes face the same direction.



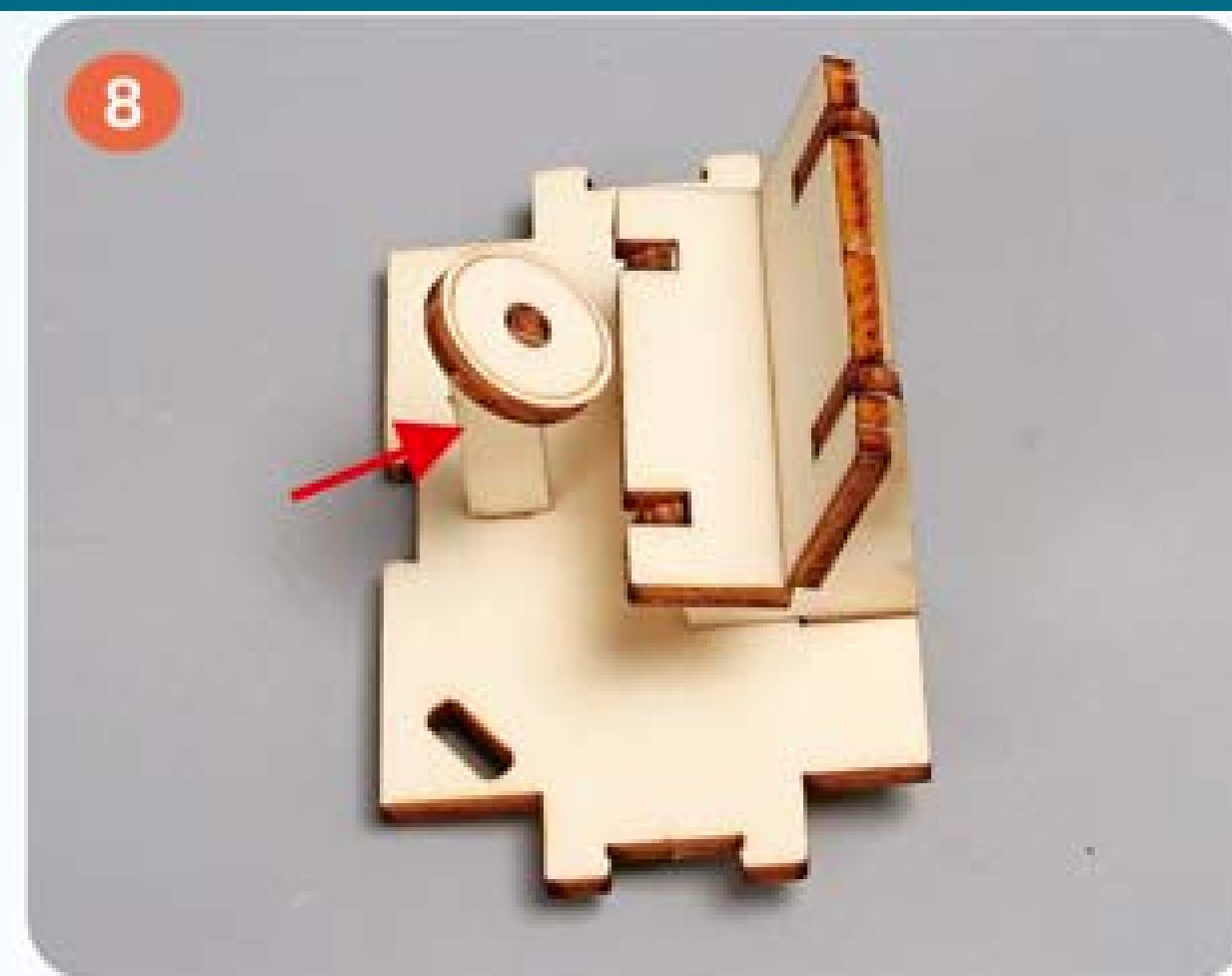
Attach both side panels to
form the main body.
Prepare the next component



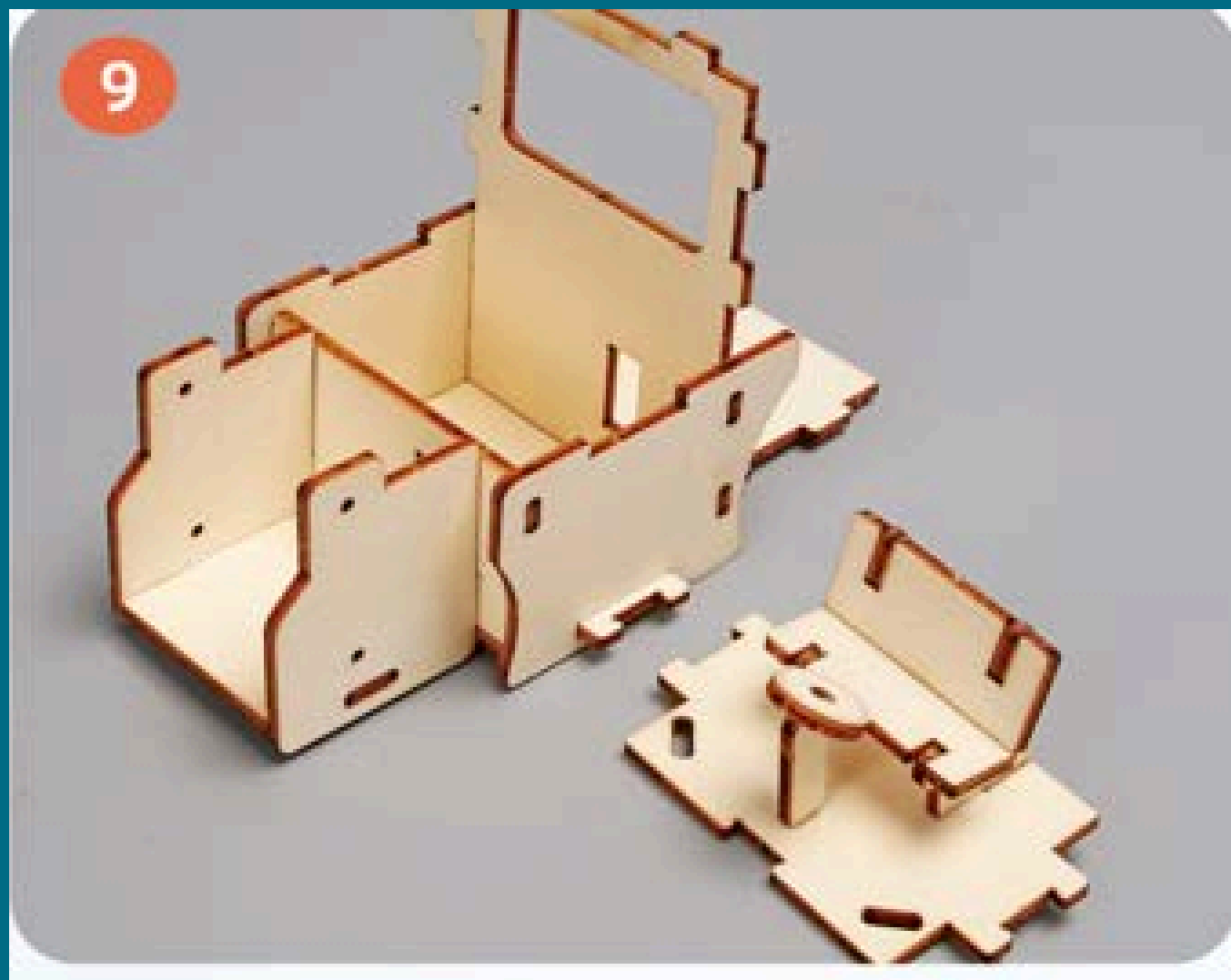
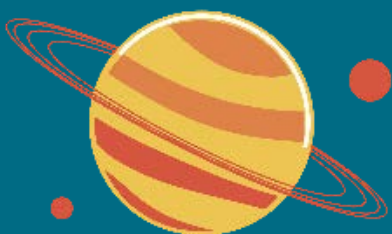
Insert the front and rear
panels into the slots.
Prepare the next big & small
component



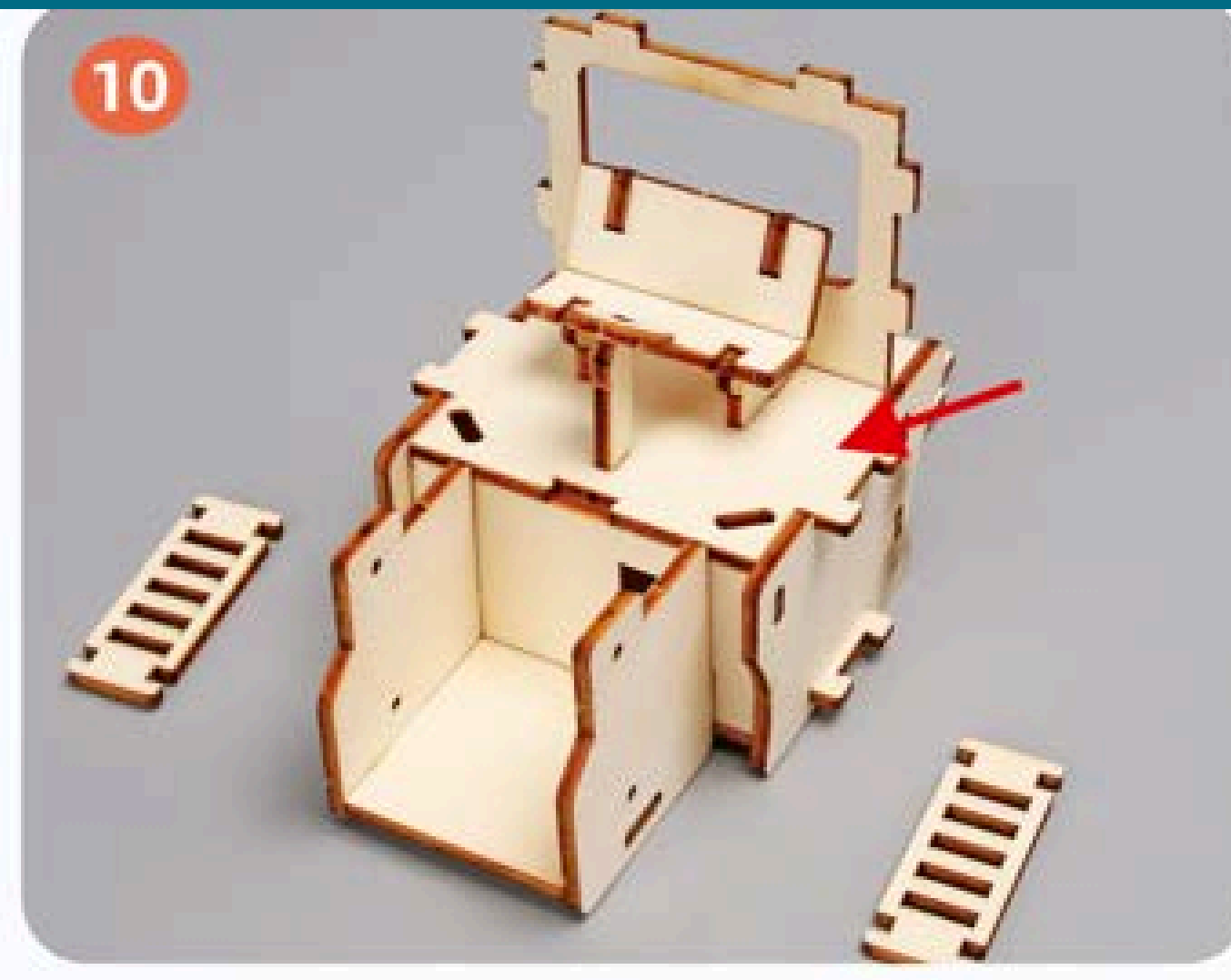
Insert the large board in reverse as shown in the picture, then insert the small board. The driver's seat assembly is now complete — prepare for the next step.



Install the steering wheel plate.

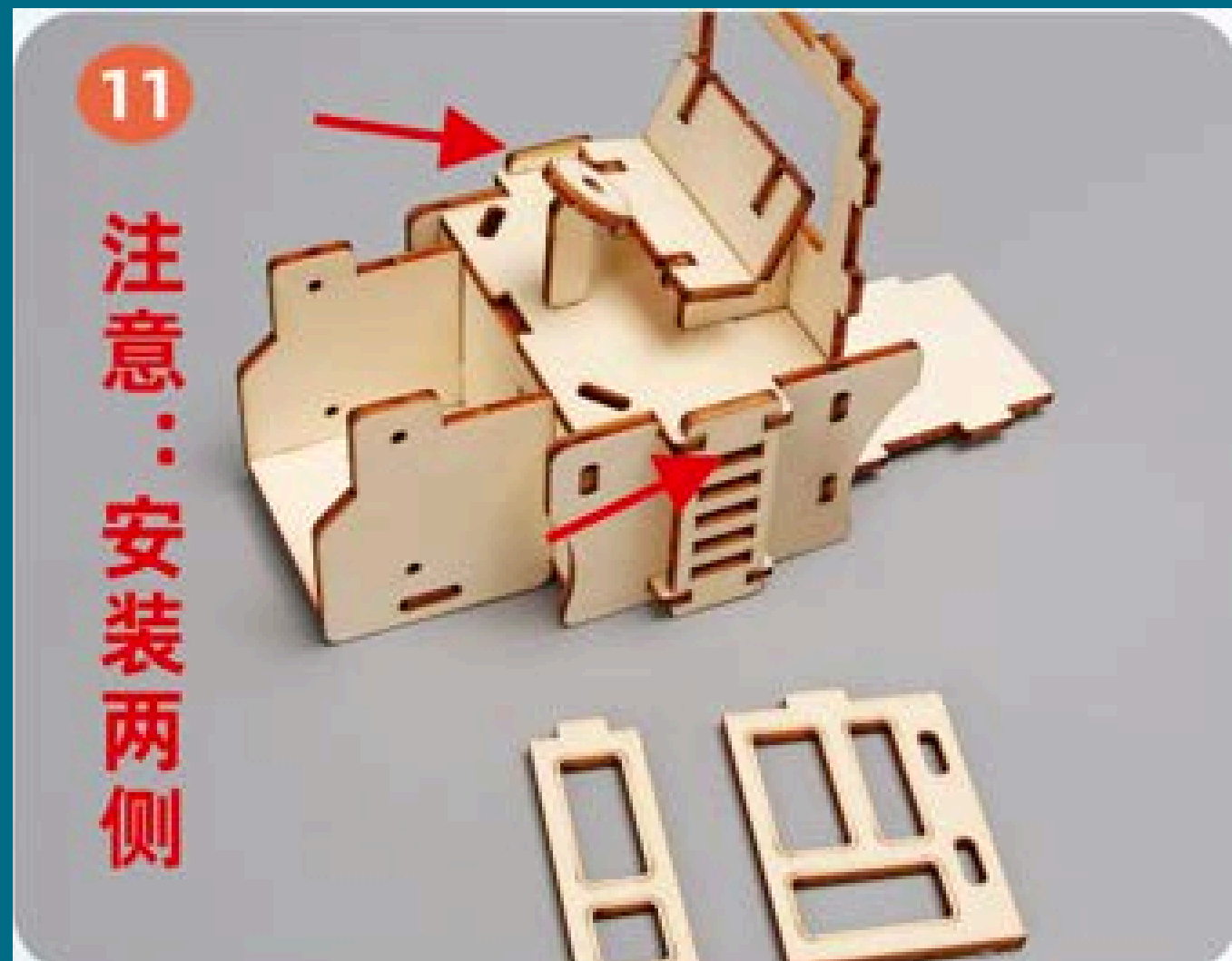
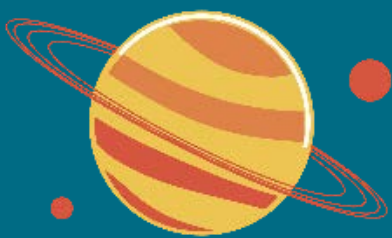


Prepare the cabin structure as shown.



Insert the driver's cabin top plate into the slot.

Prepare ladder for next step



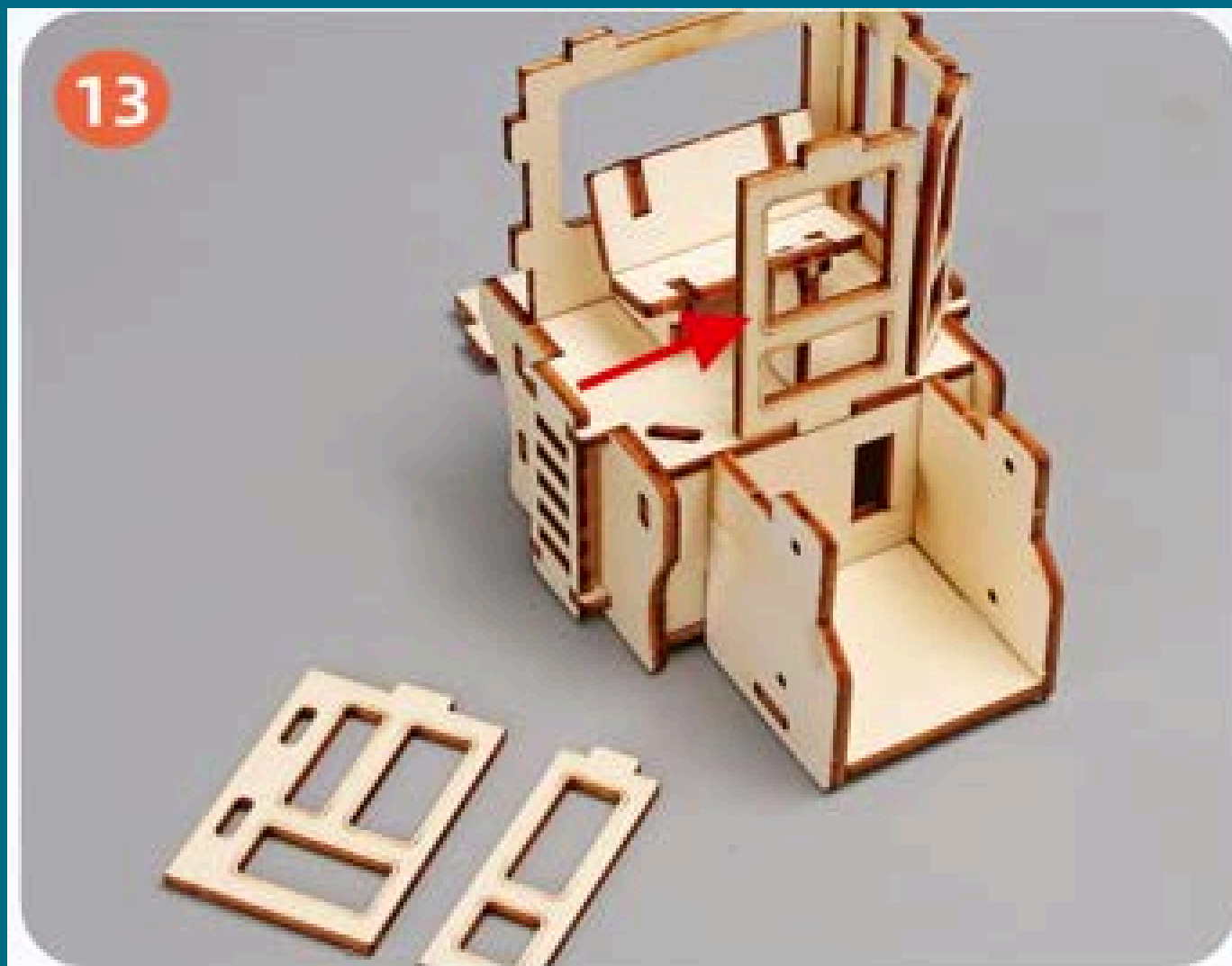
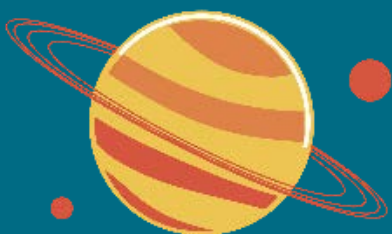
Install the side ladders on both sides.

Prepare the 2 panel for next step



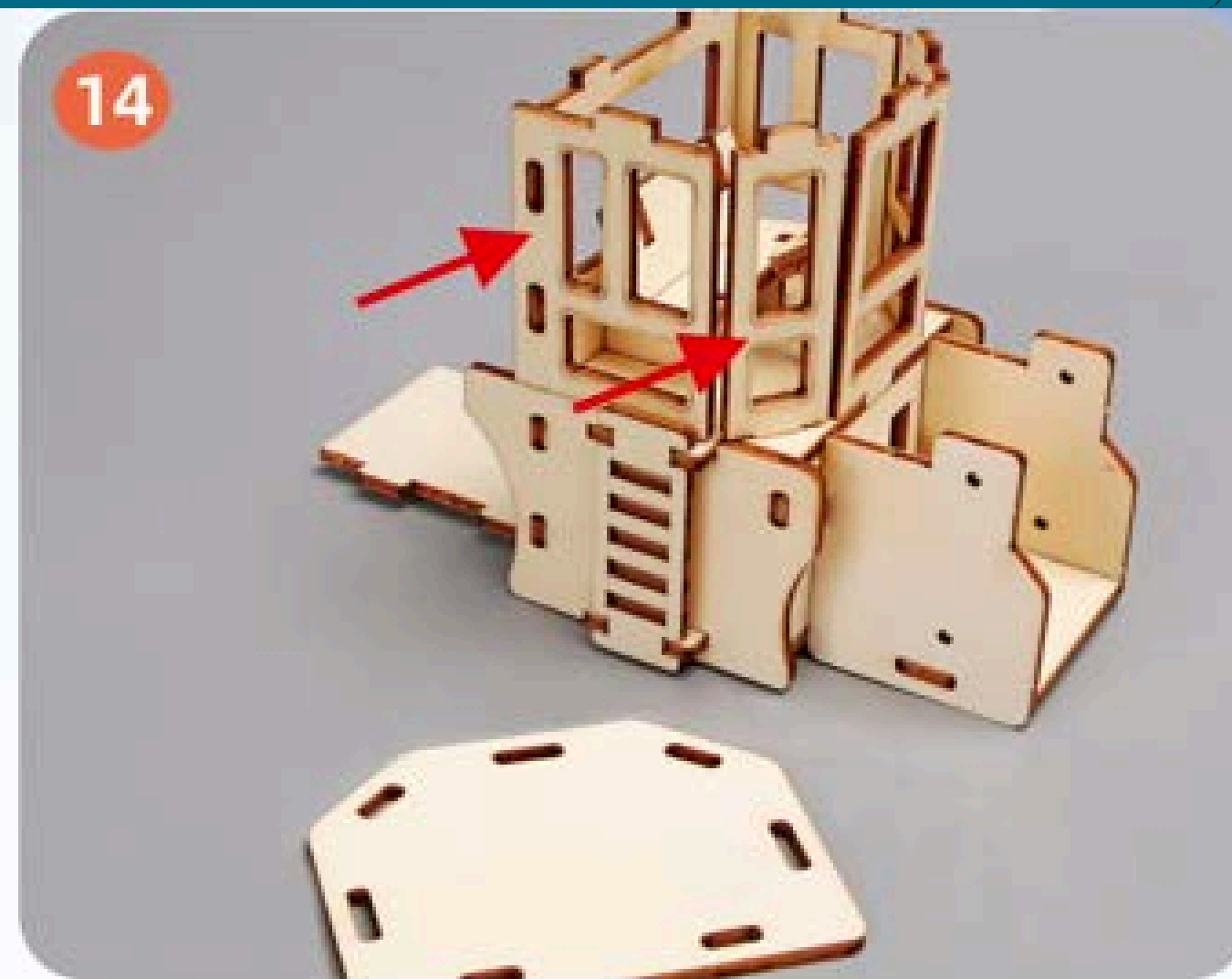
Install as per picture shown

Prepare the panel for next step



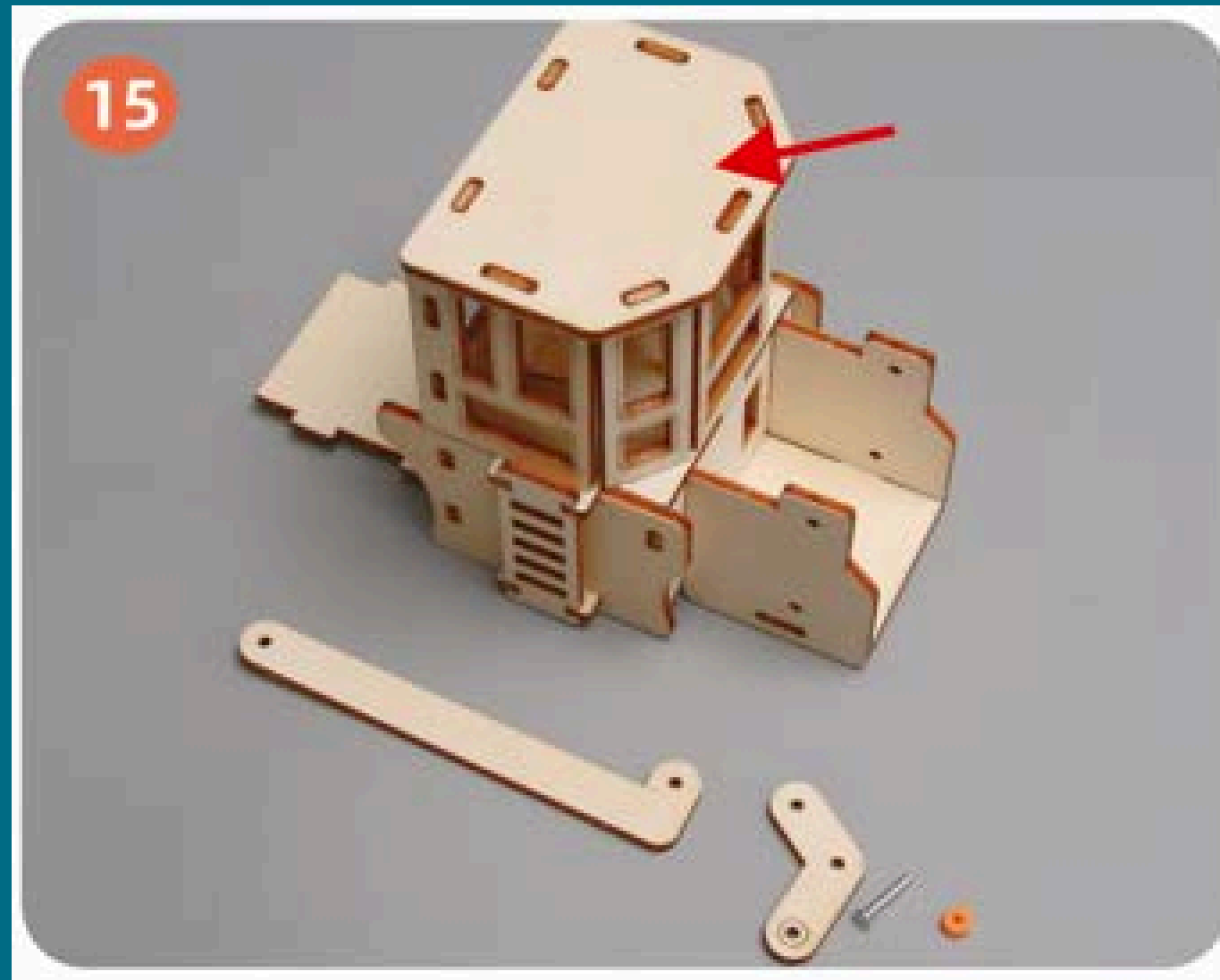
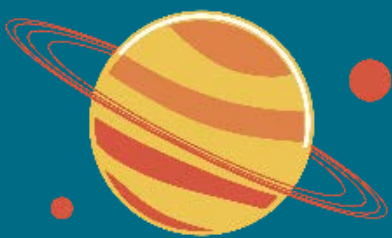
Install as per picture shown

Prepare the panel for next step



Install as per picture shown

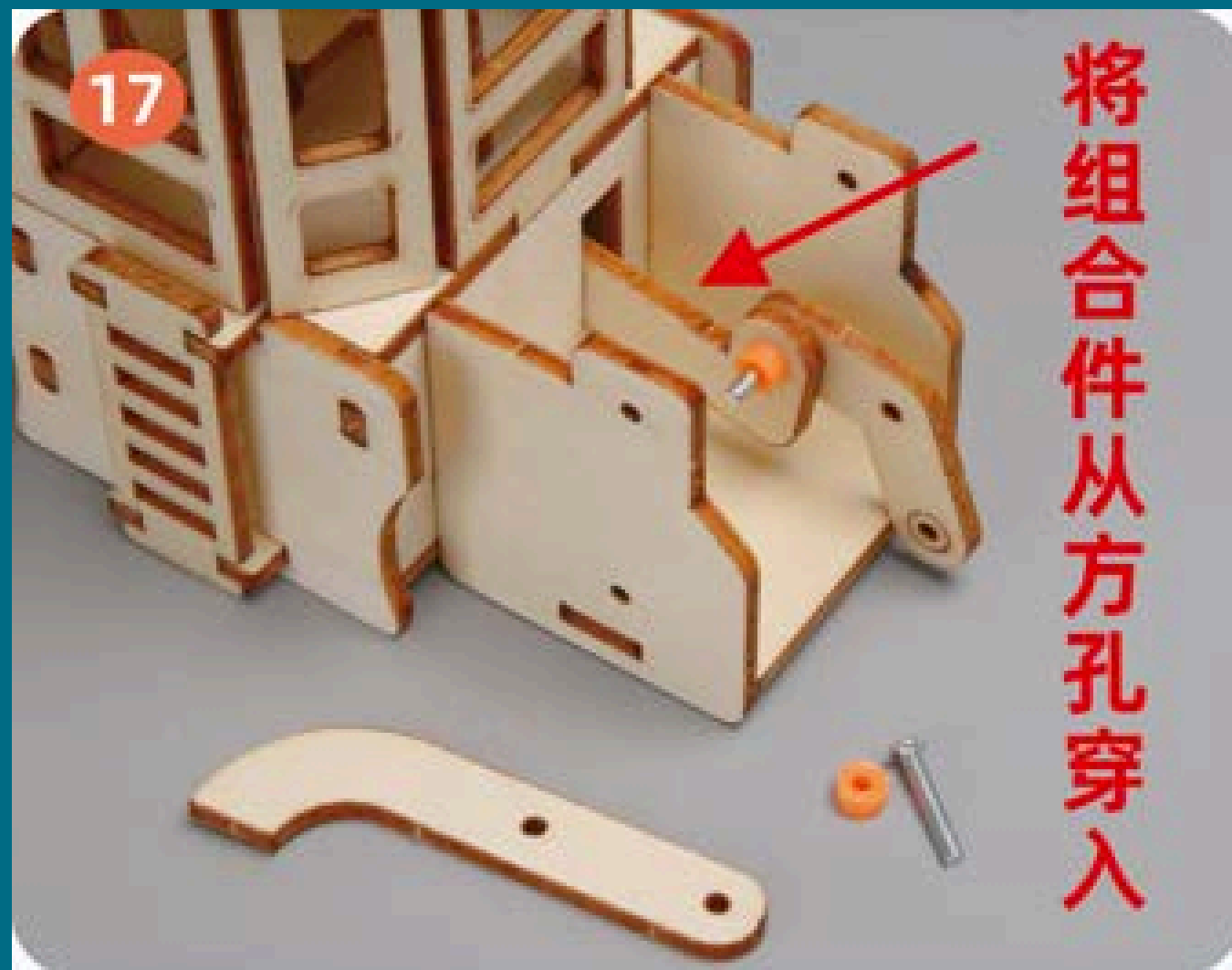
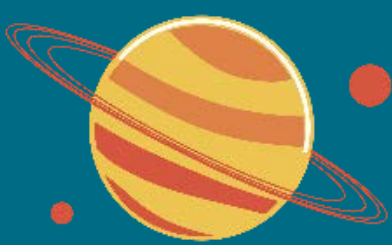
Prepare the roof panel for next step



After installing the roof,
prepare one DT12 screw and
one rubber.



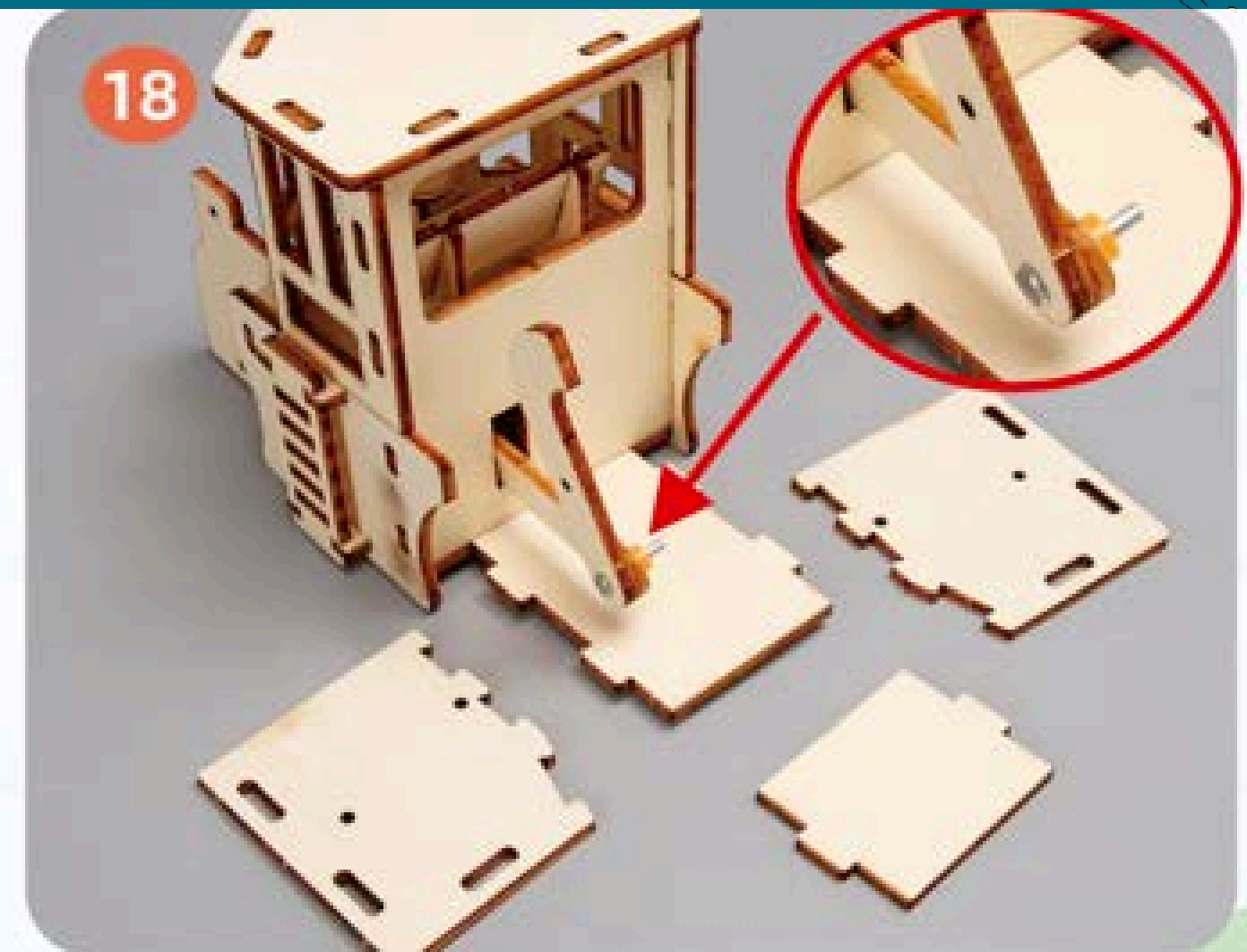
Insert the DT12 screw
through the small hole and
secure it with a rubber.



将组合件从方孔穿入

Insert the DT12 screw through the small hole and secure it with a rubber as shown in the picture.

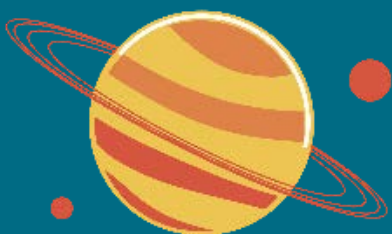
Prepare item as per picture for next step



Insert the DT12 screw through the small hole and secure it with a rubber as shown in the picture.

Prepare item as per picture for next step





Install as shown in the picture.

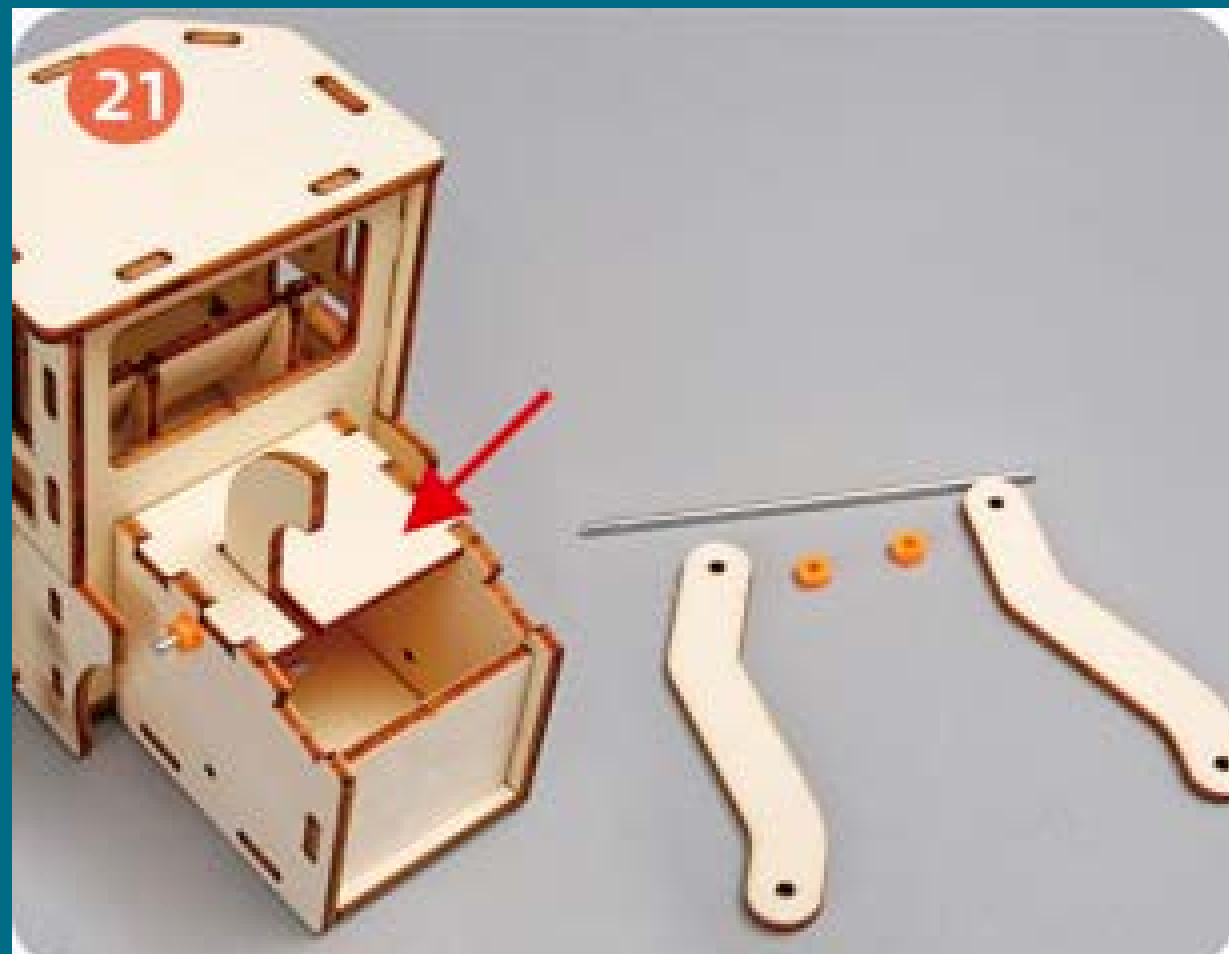
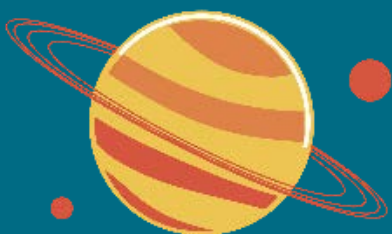
Next Prepare one 55 mm shaft and two rubber



注意：
光轴穿过
木片小孔

Insert the 55mm shaft through the small holes in the wooden pieces.

Prepare wooden panel for next step



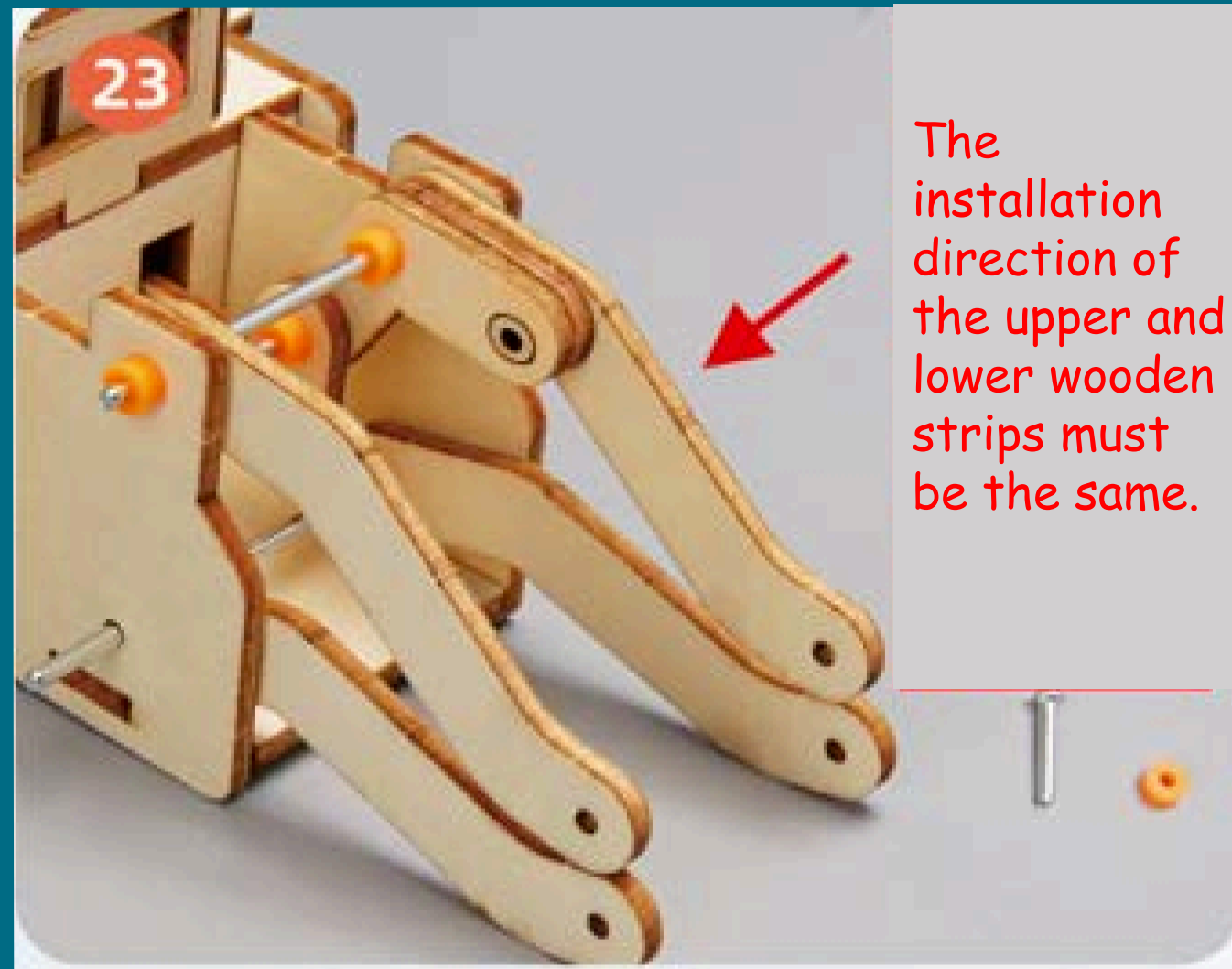
Install the panel as shown in the picture.

Next Prepare as per picture ,one 65 mm shaft and two rubber



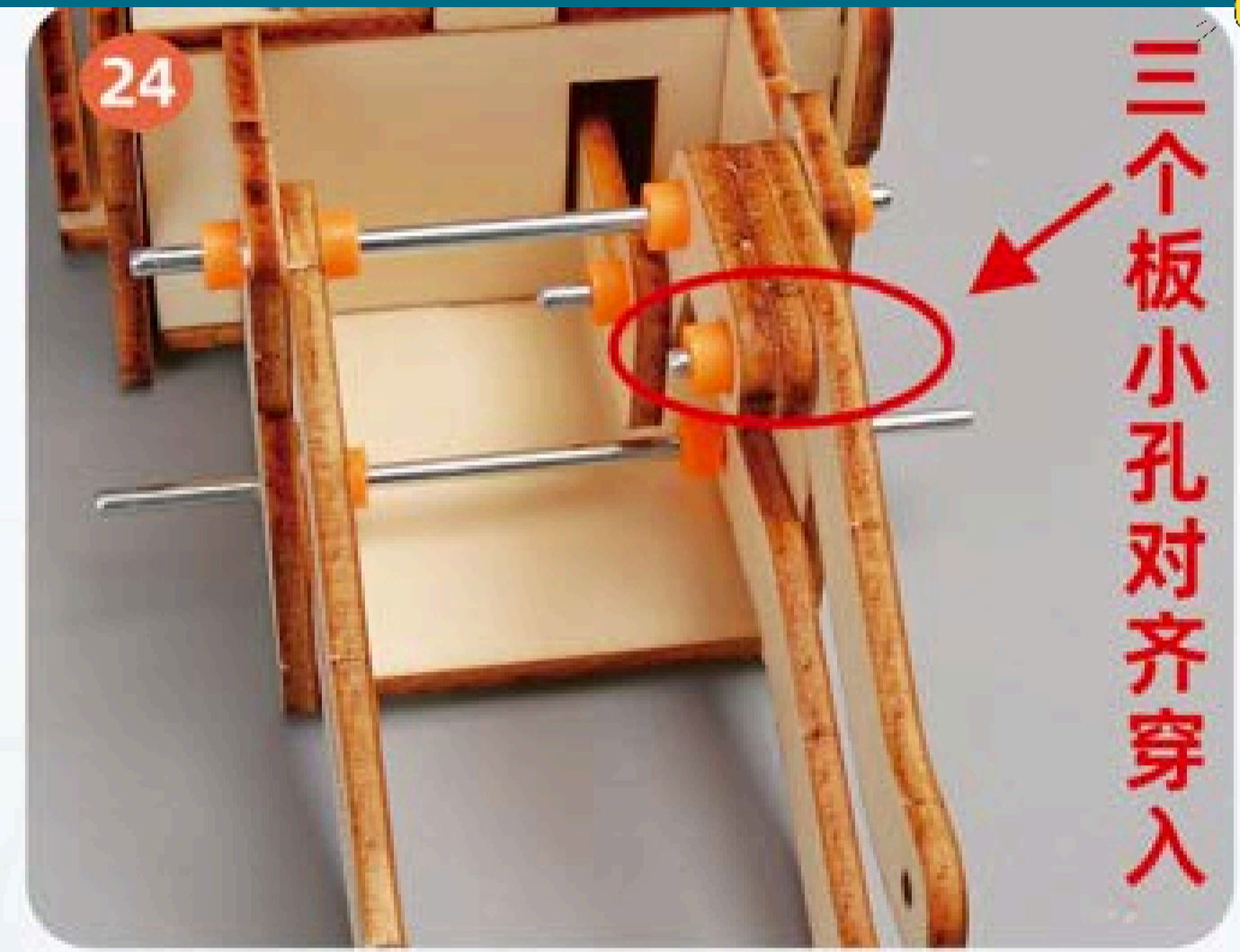
Install the as shown in the picture.

Next Prepare as per picture, one 55 mm shaft and four rubber

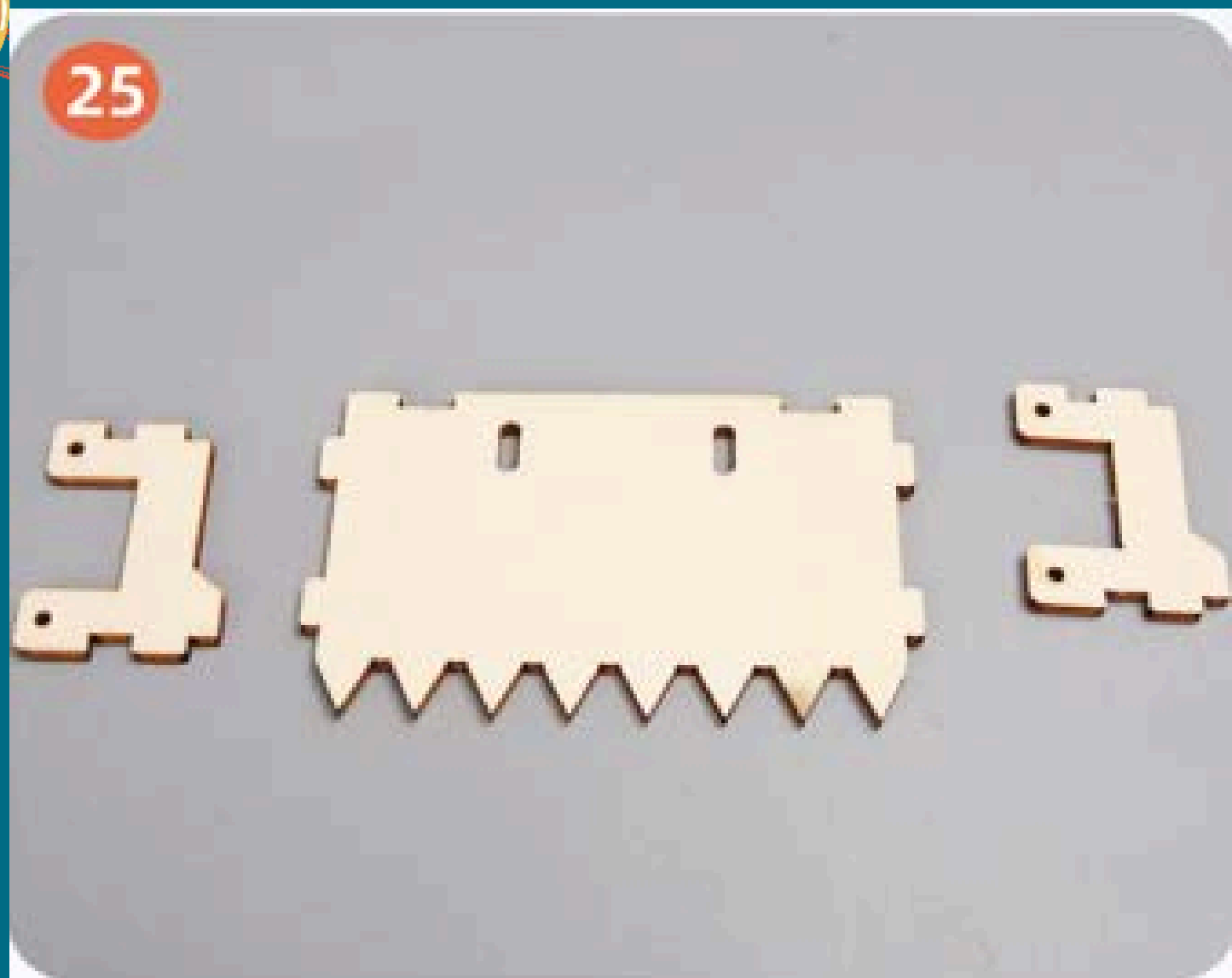
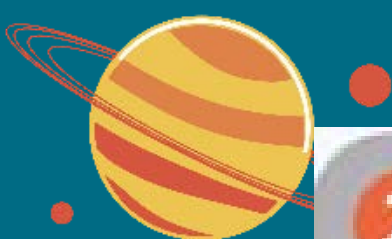


Assemble the upper and lower wooden arms, ensuring the installation direction matches.

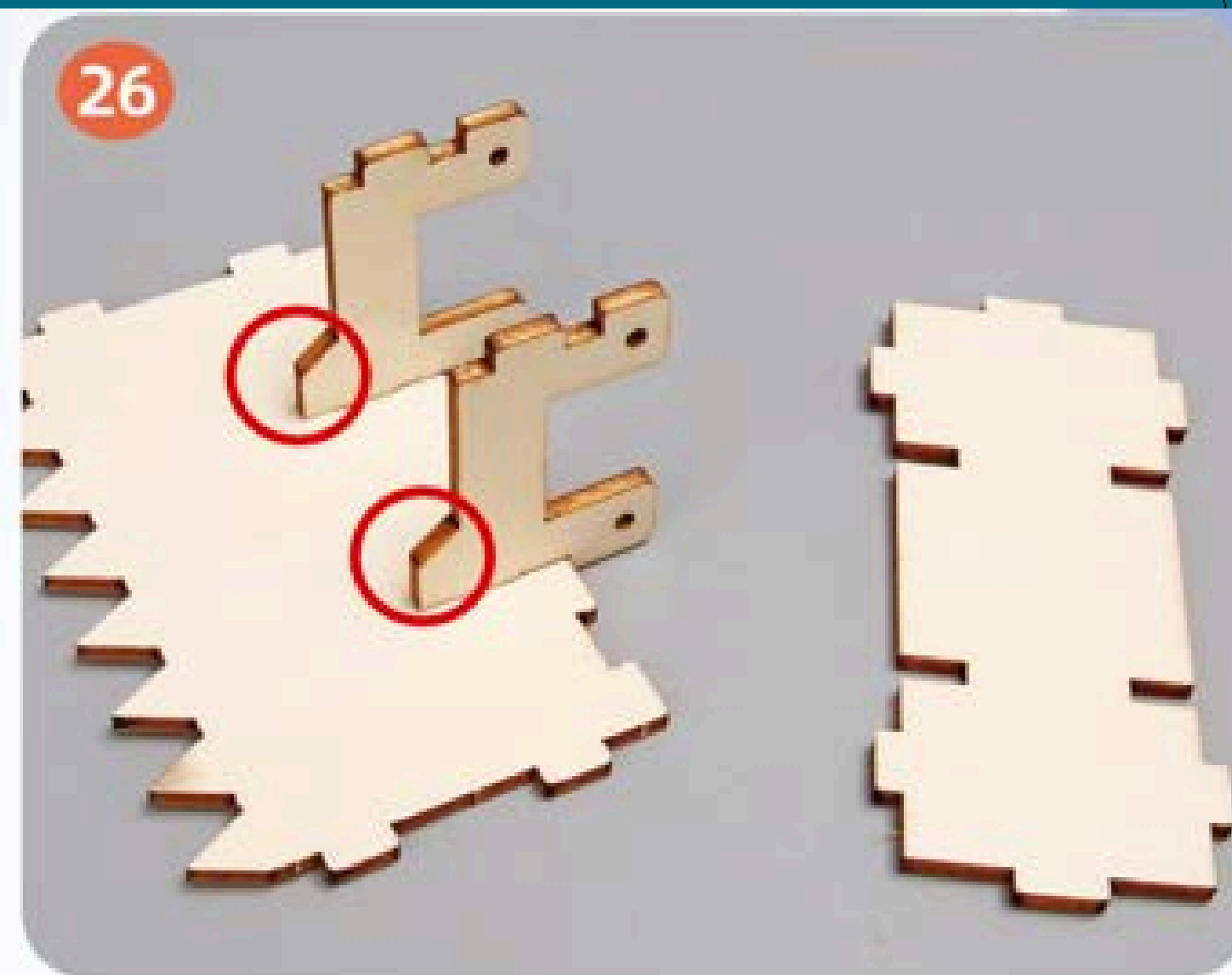
Prepare one DT12 screw and one rubber



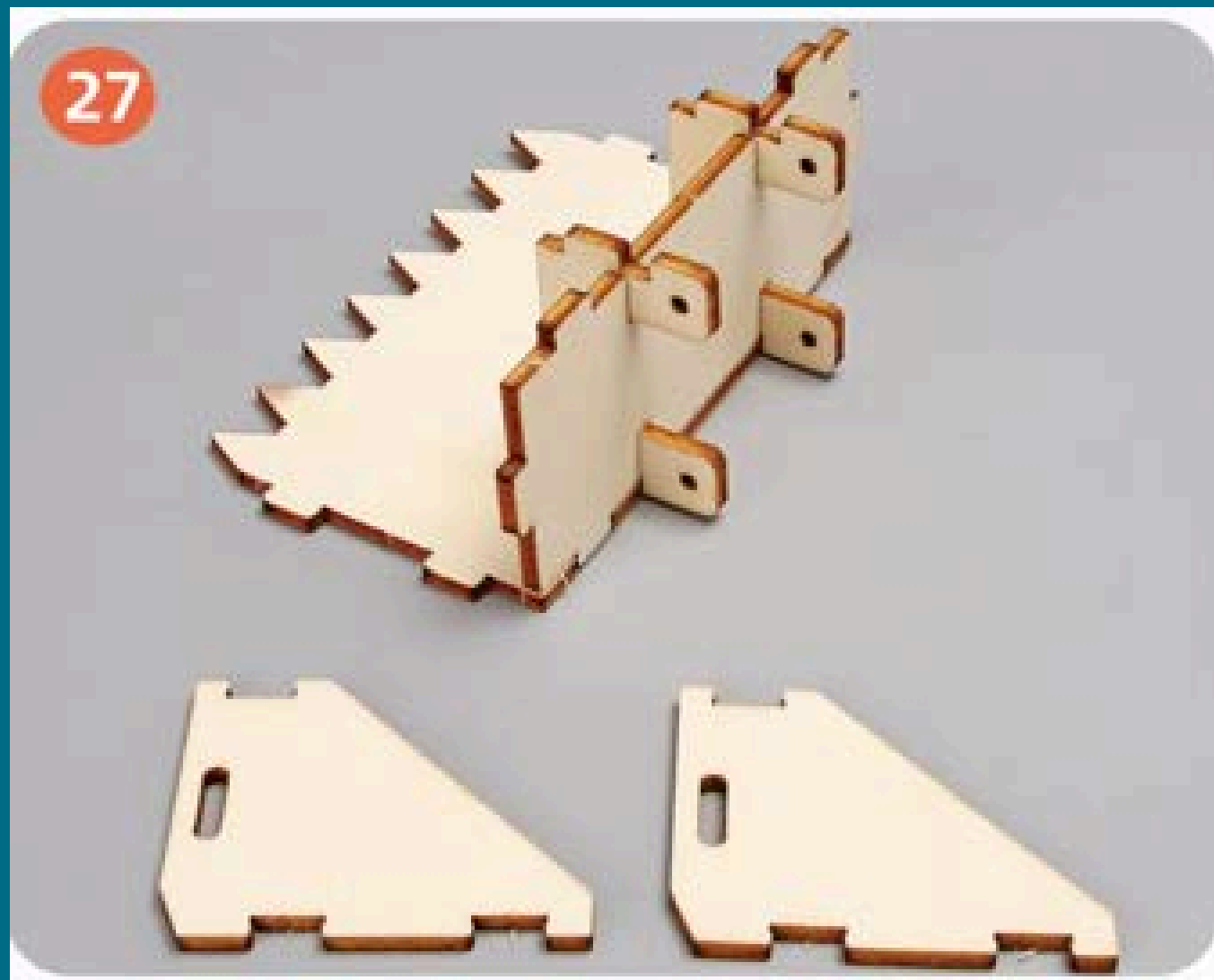
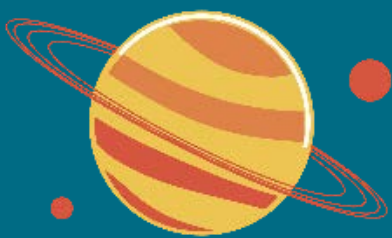
Insert the DT12 rod through the three aligned holes and secure with bushings.



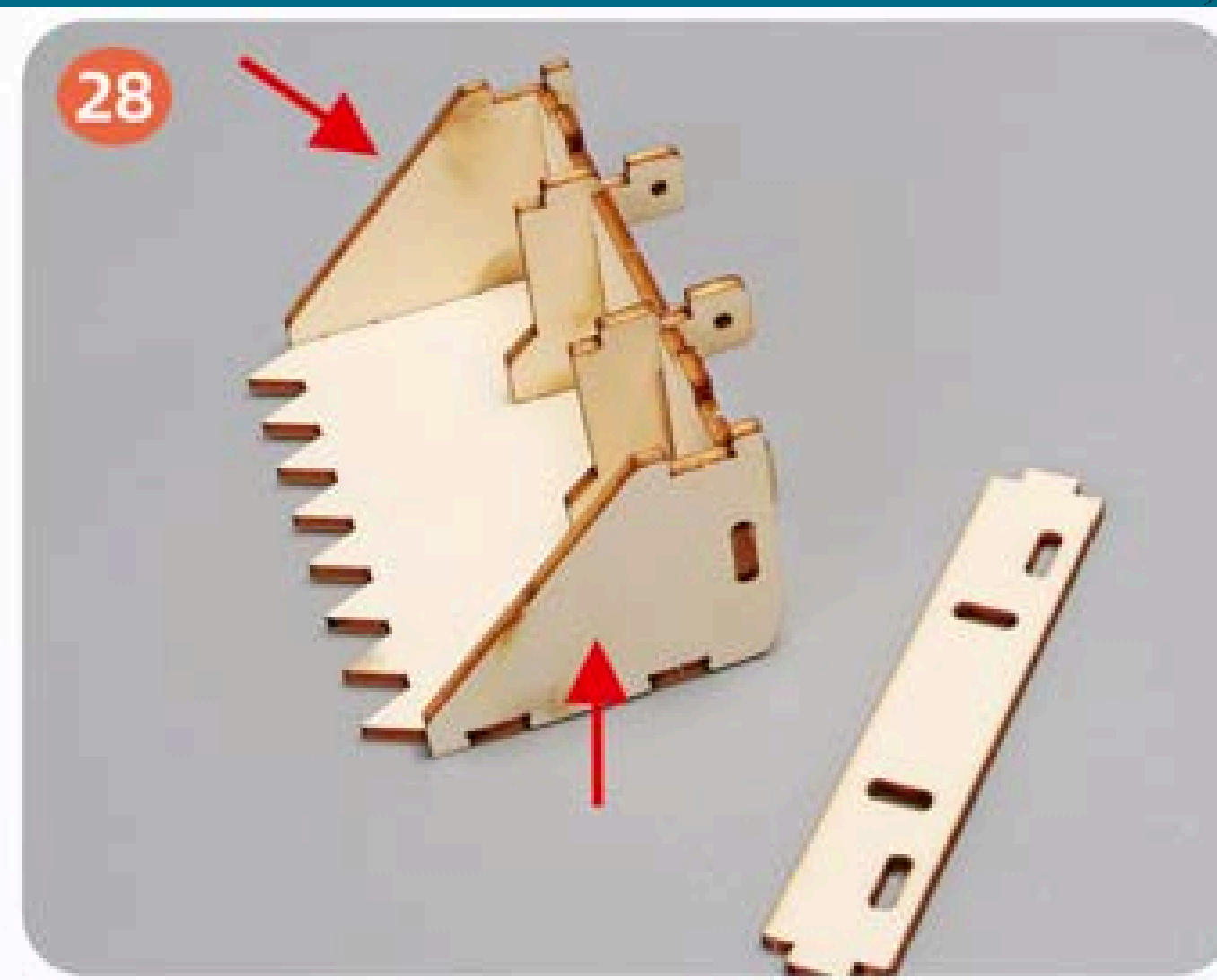
Prepare the parts as shown.



Install as shown.
Prepare the parts for next
step.

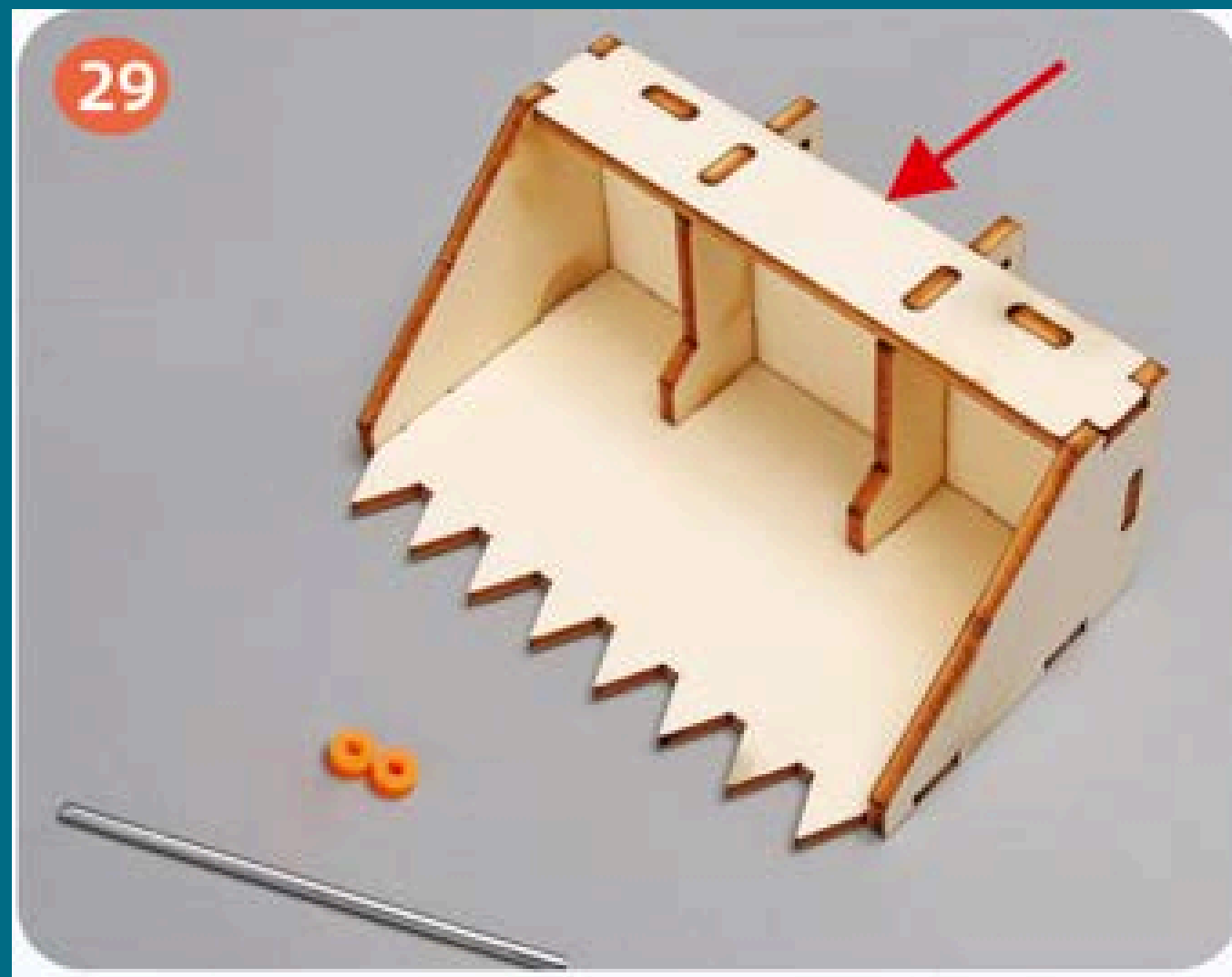
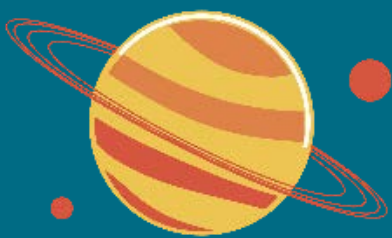


Install as shown.
Prepare the parts for next
step.



Install as shown.
Prepare the parts for next
step.

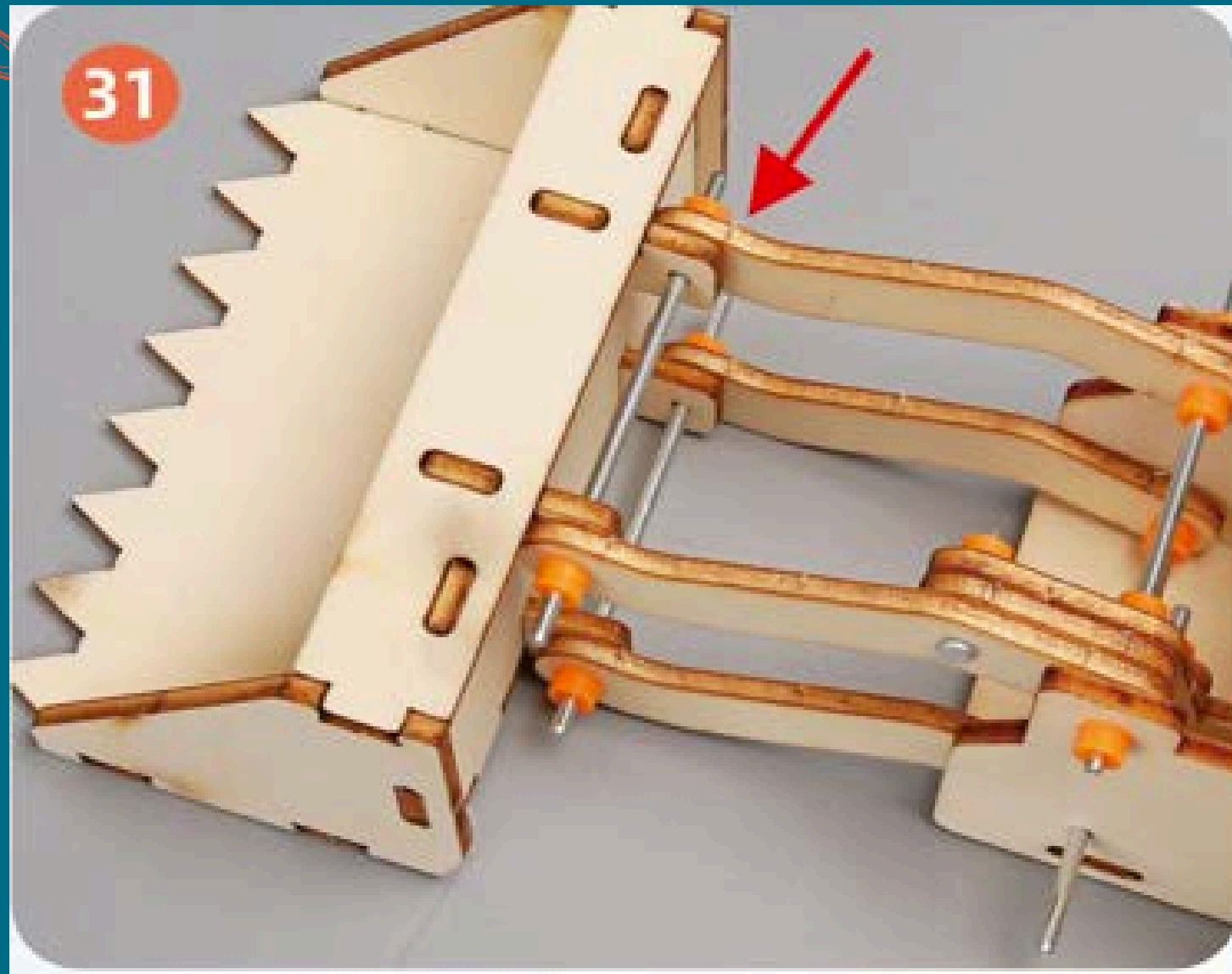




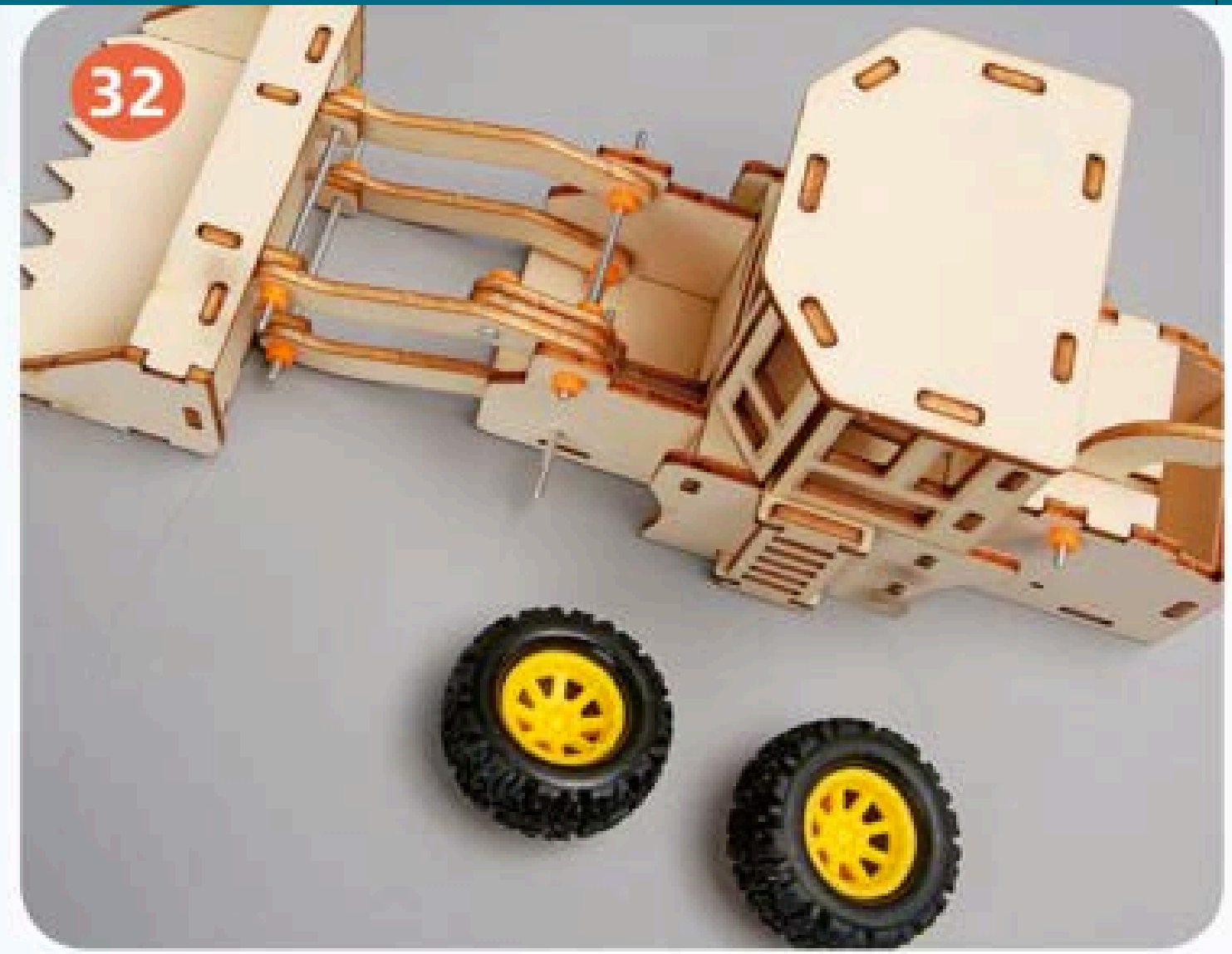
Install as shown.
Prepare 55mm shaft and 2
rubber for next step.



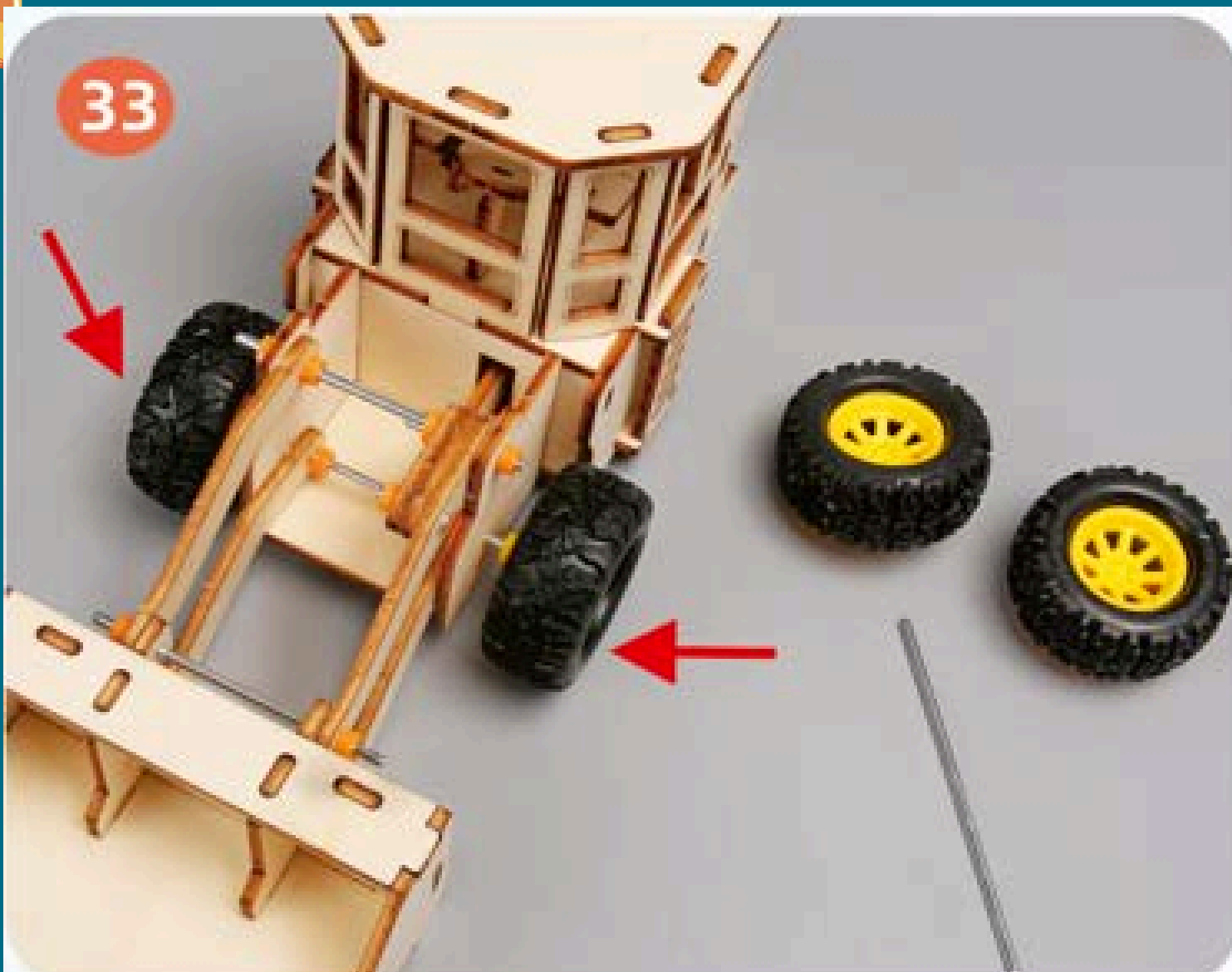
Install as shown.
Prepare 55mm shaft and 2
rubber for next step.



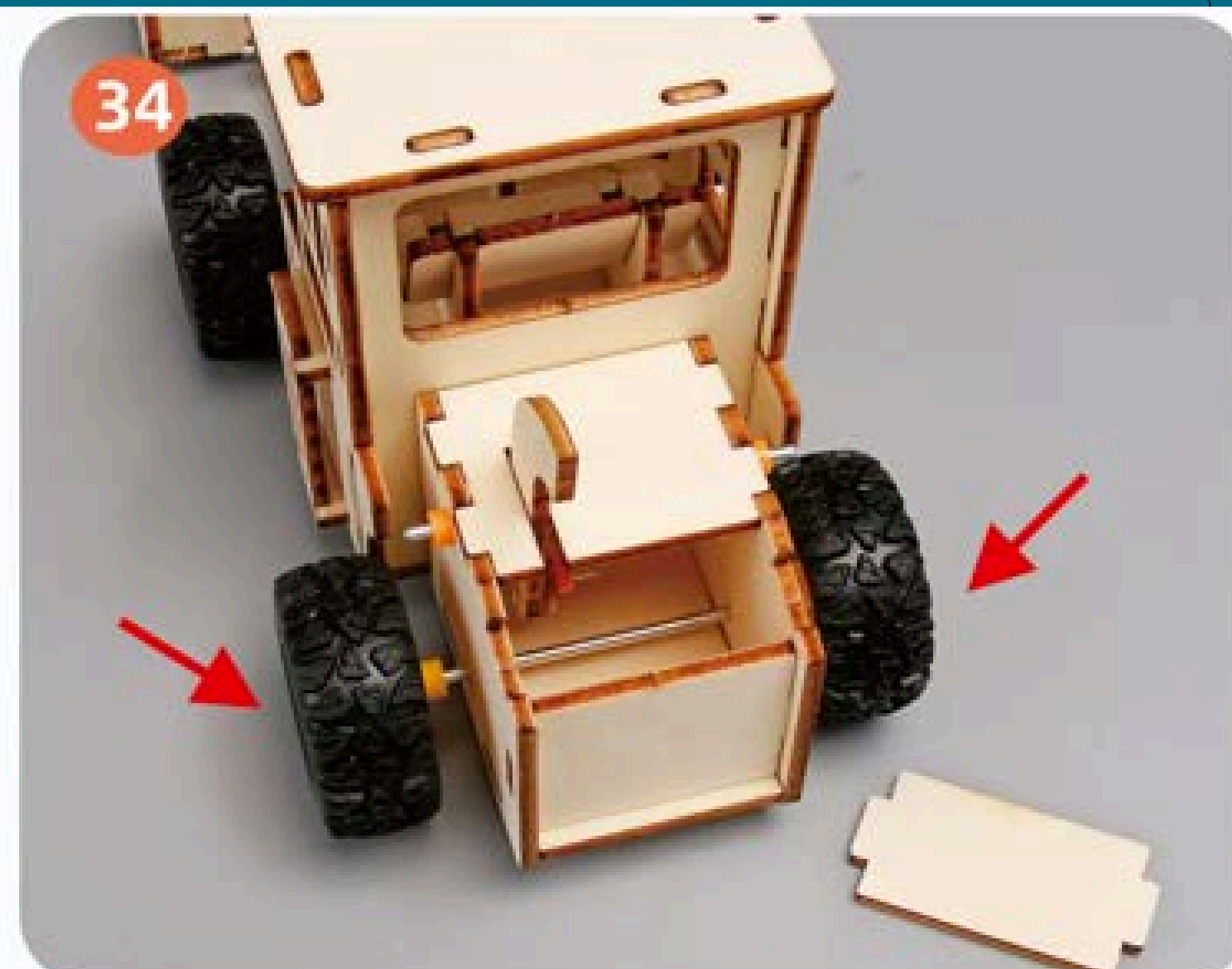
Install the upper layer and secure both sides with rubber.



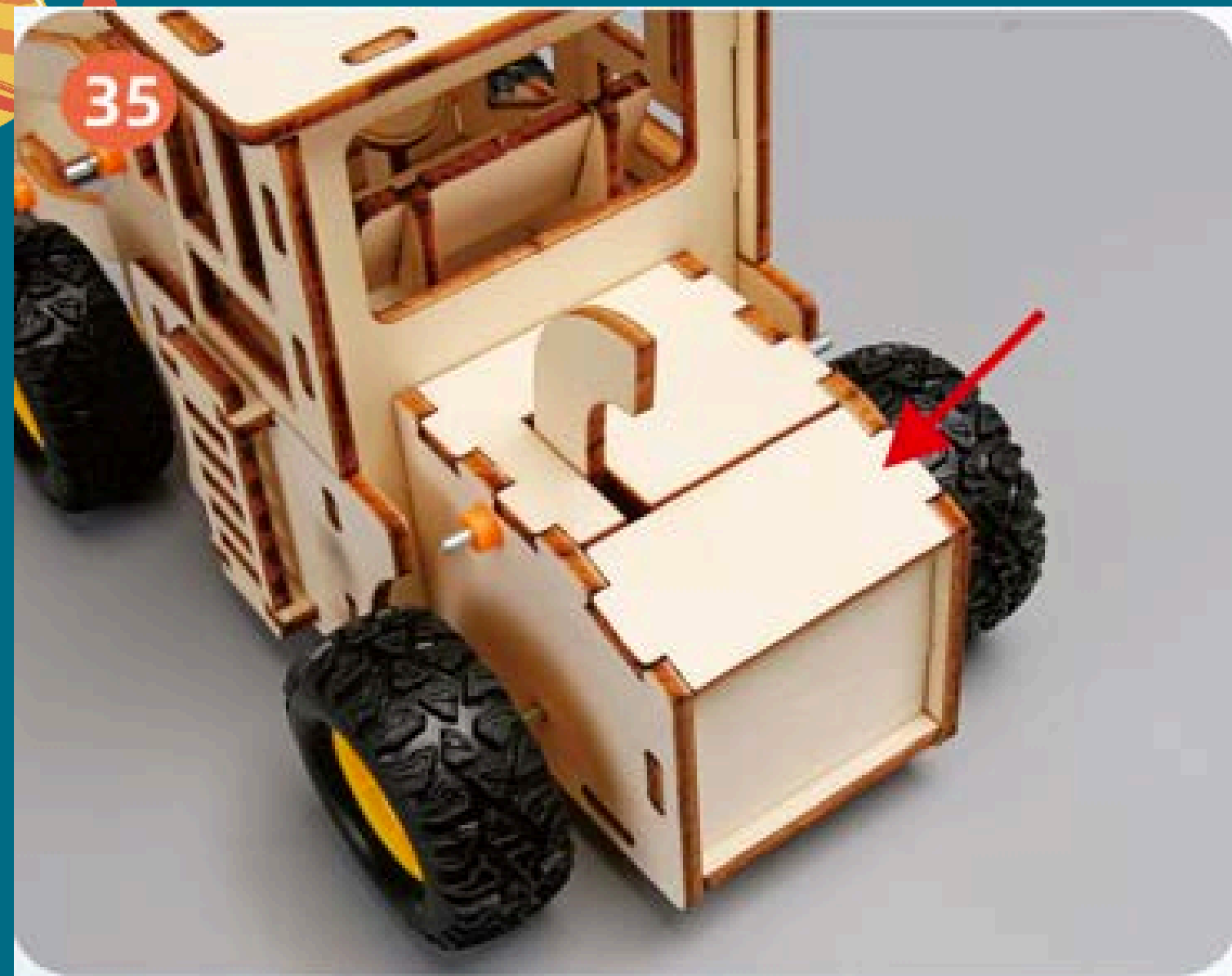
Prepare wheels.



Attach the front wheels as shown.
Next prepare one 65 mm shaft and two wheels.



Attach the front wheels as shown.
Next prepare panel as shown



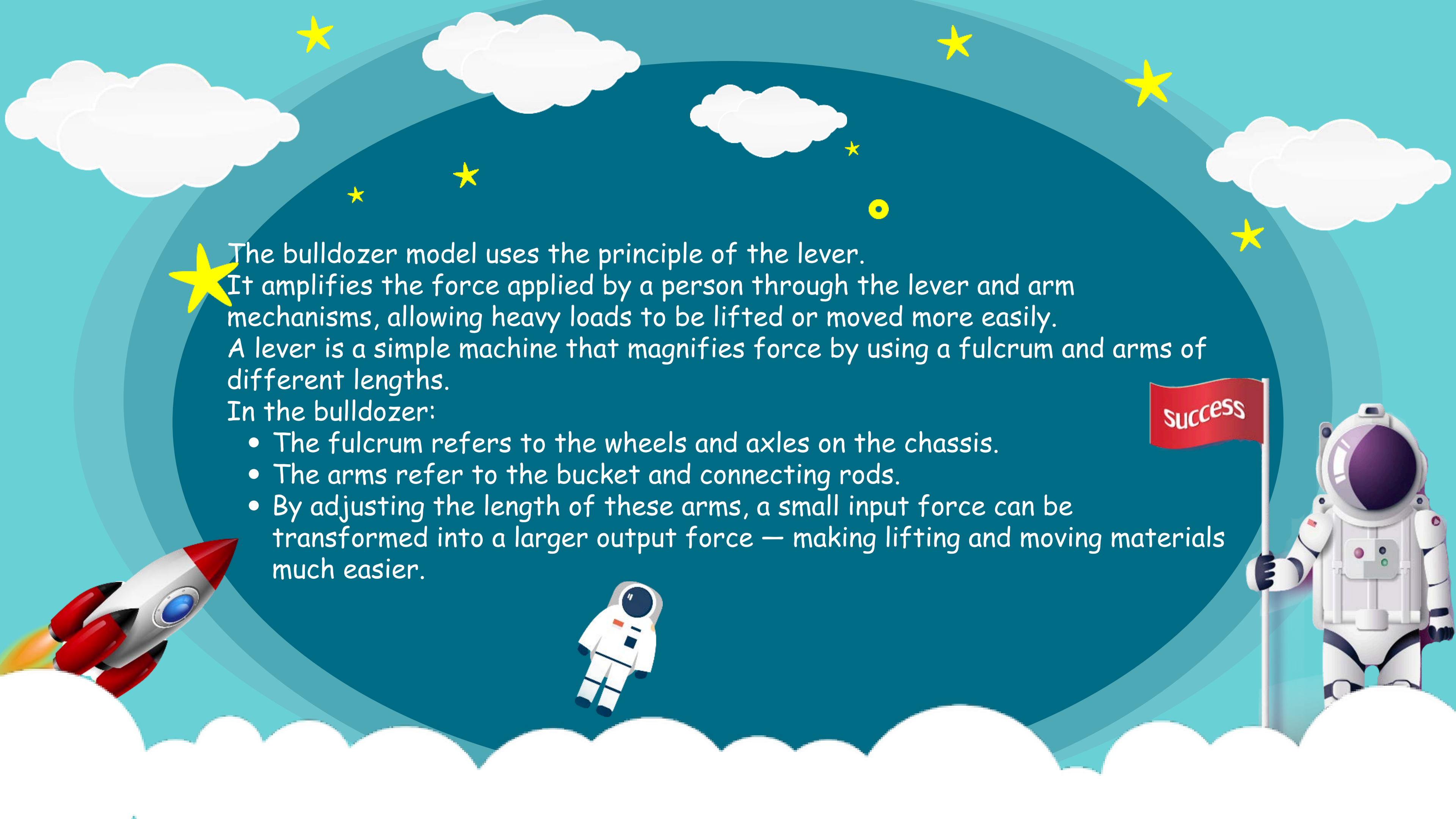
Install as shown.



Finished Model Display — Your bulldozer is complete!

Science Knowledge



- 
- ★ The bulldozer model uses the principle of the lever.
It amplifies the force applied by a person through the lever and arm mechanisms, allowing heavy loads to be lifted or moved more easily.
A lever is a simple machine that magnifies force by using a fulcrum and arms of different lengths.
In the bulldozer:
- The fulcrum refers to the wheels and axles on the chassis.
 - The arms refer to the bucket and connecting rods.
 - By adjusting the length of these arms, a small input force can be transformed into a larger output force — making lifting and moving materials much easier.