Electric Tank

Experiment Objectives

1. Build an electric tank through hands-on experimentation.
2. Gain a basic understanding of how an electric tank car works.
3. Inspire children's interest in science and cultivate scientific thinking through experimentation.

Introduction

Understanding Tanks

Do you know what is happening in the picture?

What kinds of weapons are used in war?

Introduction to Tanks

A tank is one of the main weapons used in modern land warfare. It is a tracked armored combat vehicle with direct firepower, cross-country mobility, and armor protection.
It plays a crucial role among land-based weapons, ranking just above wheeled armored vehicles. Tanks are mainly used to fight against enemy tanks or other armored vehicles, suppress and destroy anti-tank weapons, demolish fortifications, and eliminate enemy ground forces.

坦克的划分

Tank Classification

Tanks can be classified by combat weight and gun caliber into three types: light, medium, and heavy. Since the 1960s, many countries have classified tanks by purpose into main battle tanks and special-purpose tanks.

- Main battle tanks are the primary combat vehicles of modern armored forces, capable of performing multiple combat missions.
- Special-purpose tanks are equipped with specialized devices for specific tasks, such as reconnaissance, airborne operations, flamethrowing, or amphibious missions.

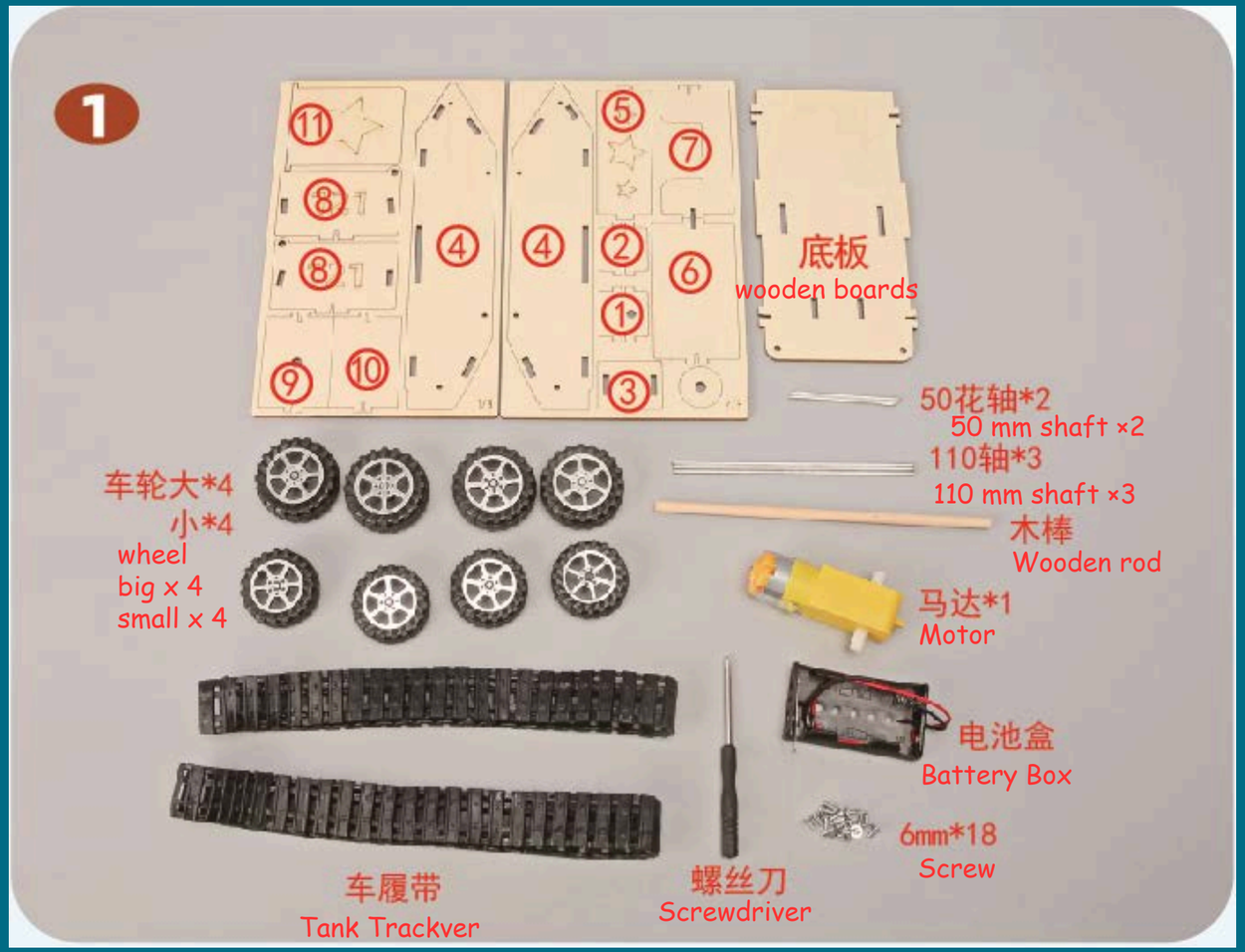
In this lesson, let's build a fun electric tank together!

Experiment Steps

Let's get started!

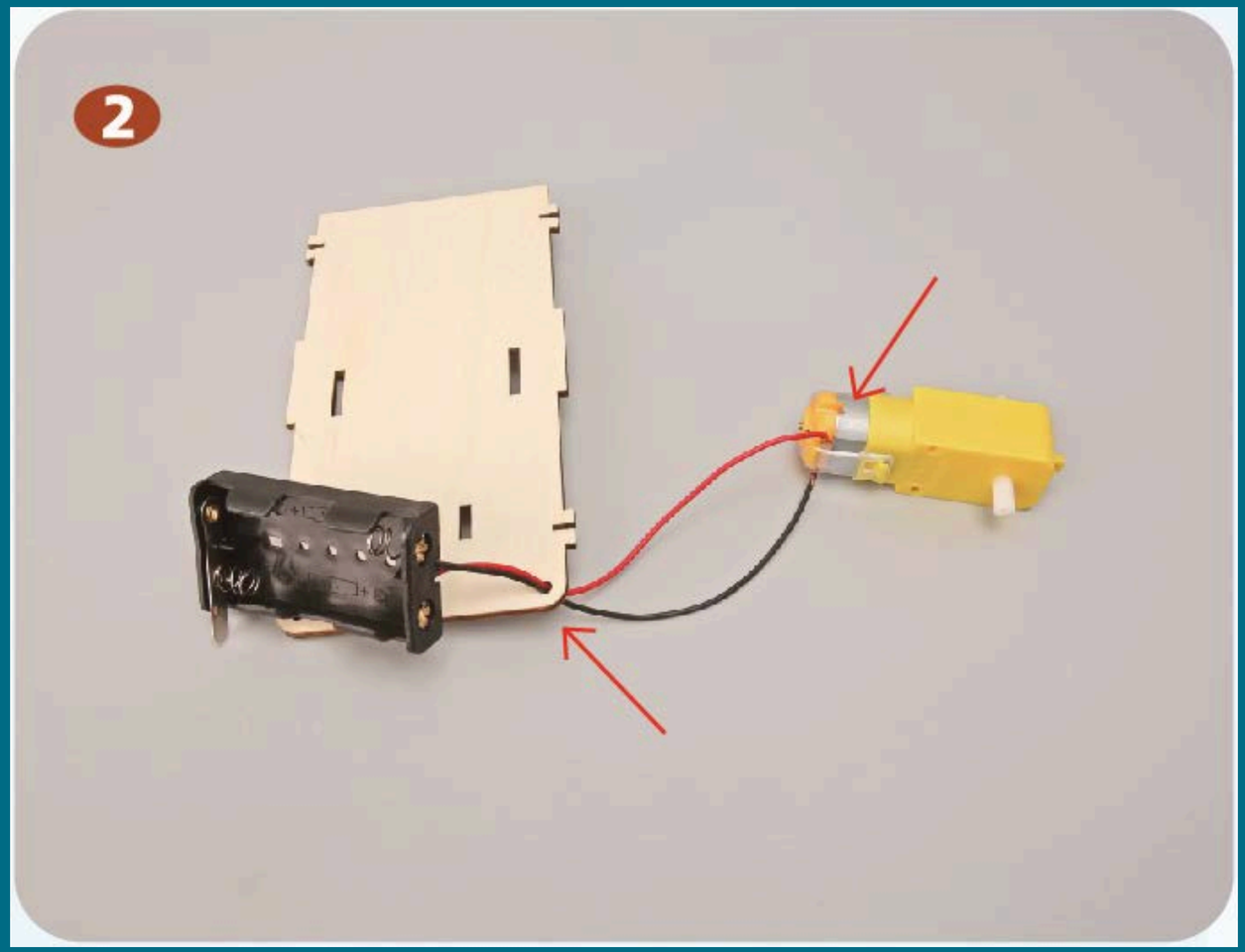
01

Recognize the Materials



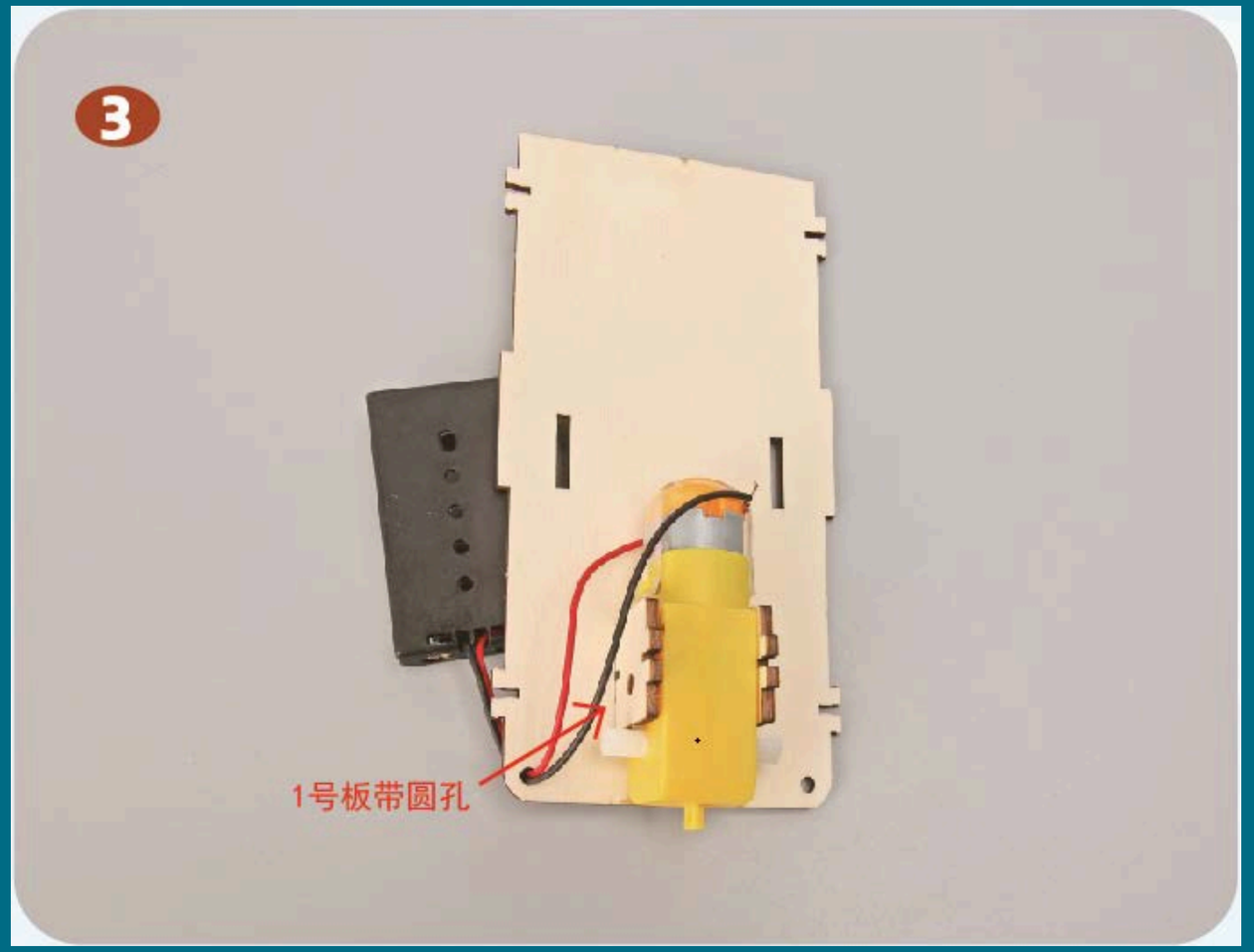
02

As shown, pass the battery box wires through the round hole in the base plate and connect them to the motor (red = positive, black = negative).



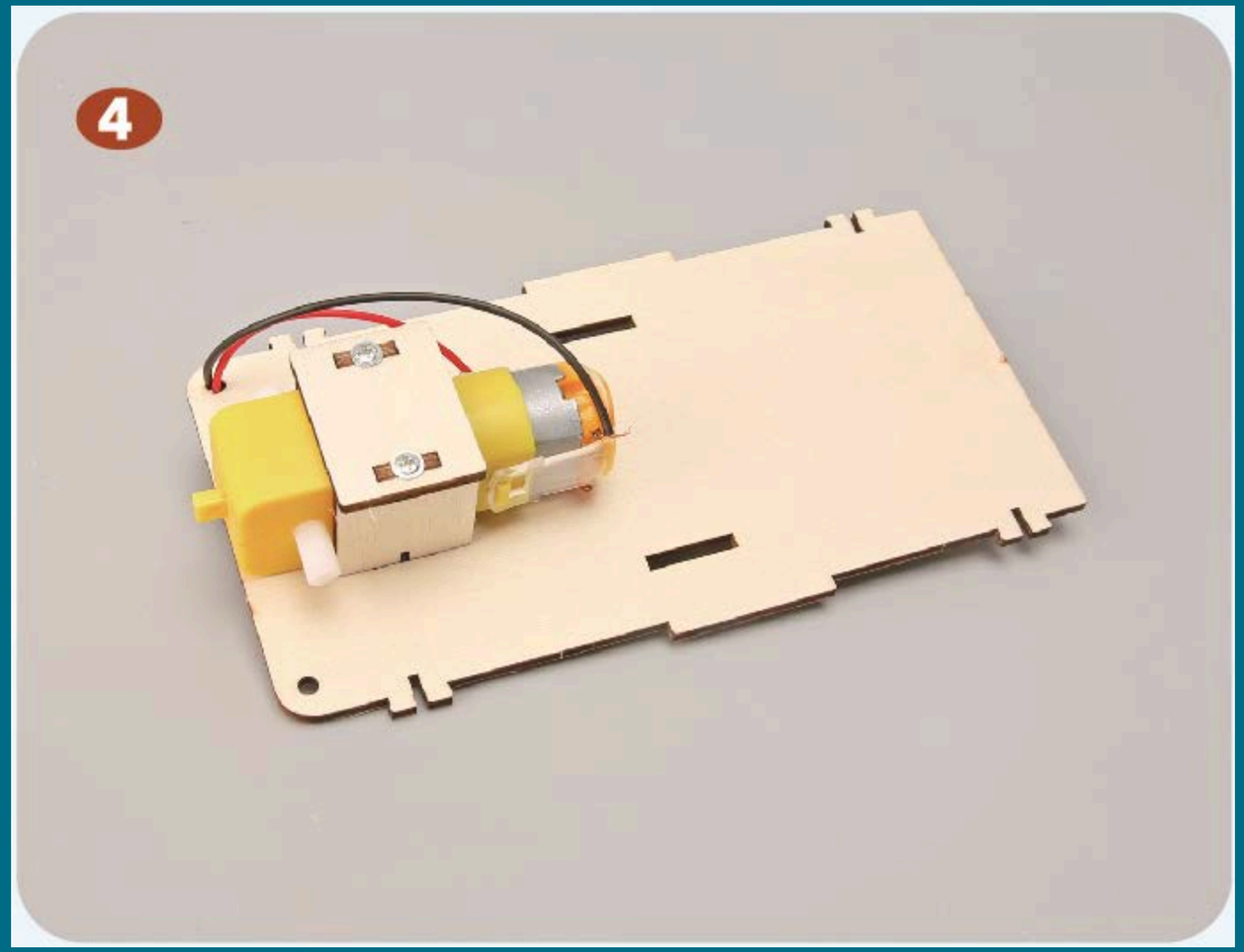
03

As shown, use board No.1 and No.2 to secure the motor to the back of the base plate.
(Note: Make sure the motor is installed in the correct direction.)



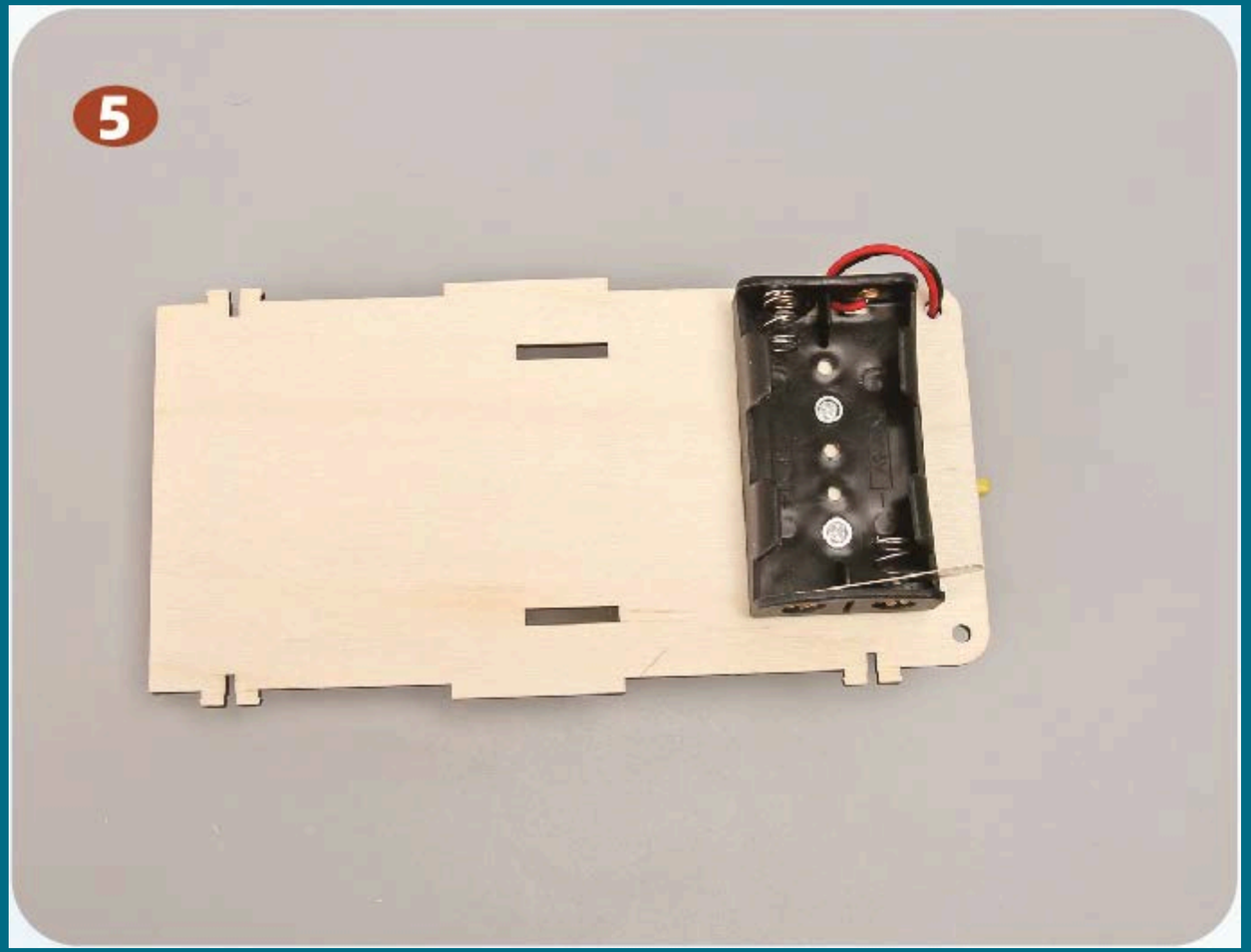
04

As shown, install board No.3 and fix it with screws.



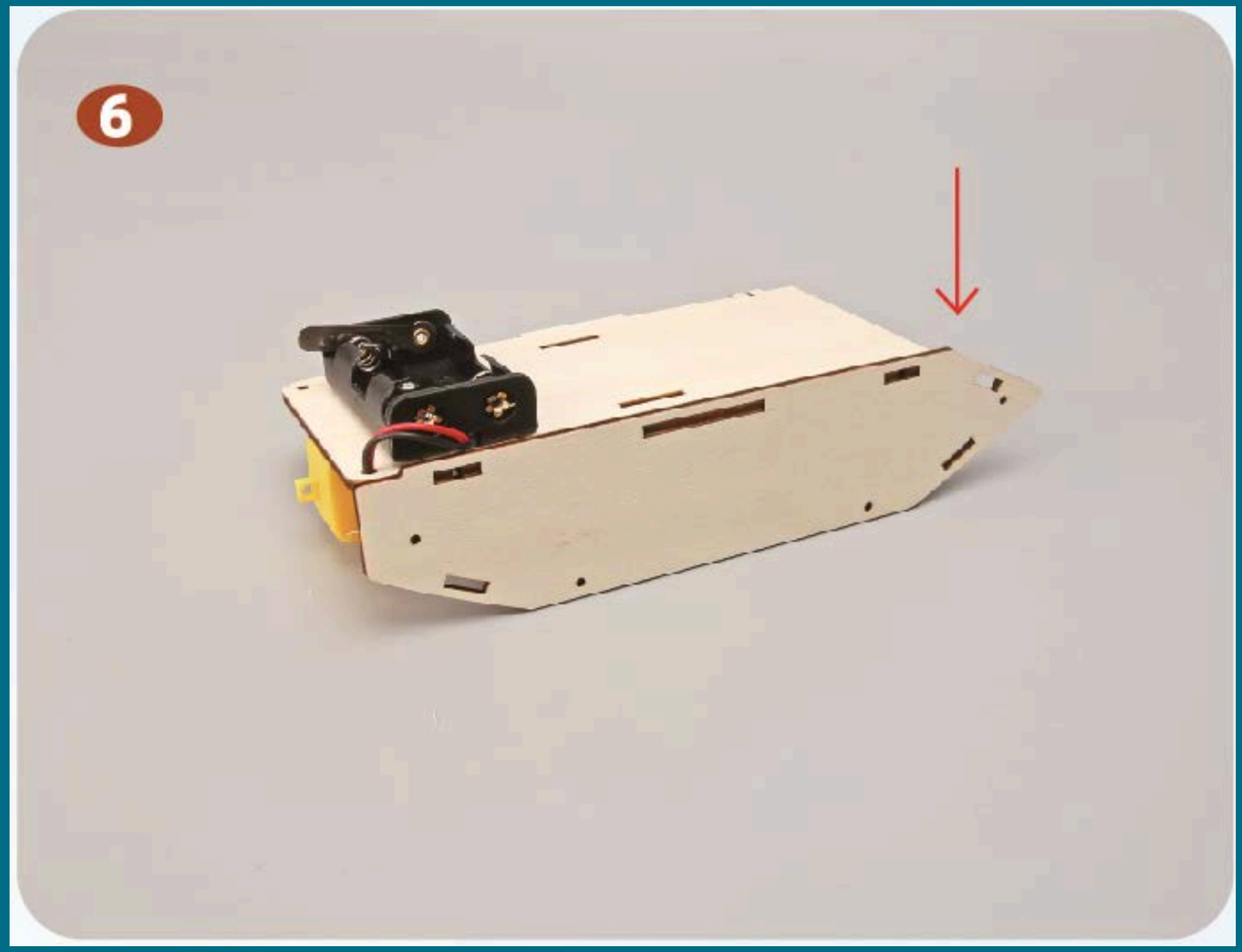
05

As shown, fix the battery box on other side of the base plate with screws.



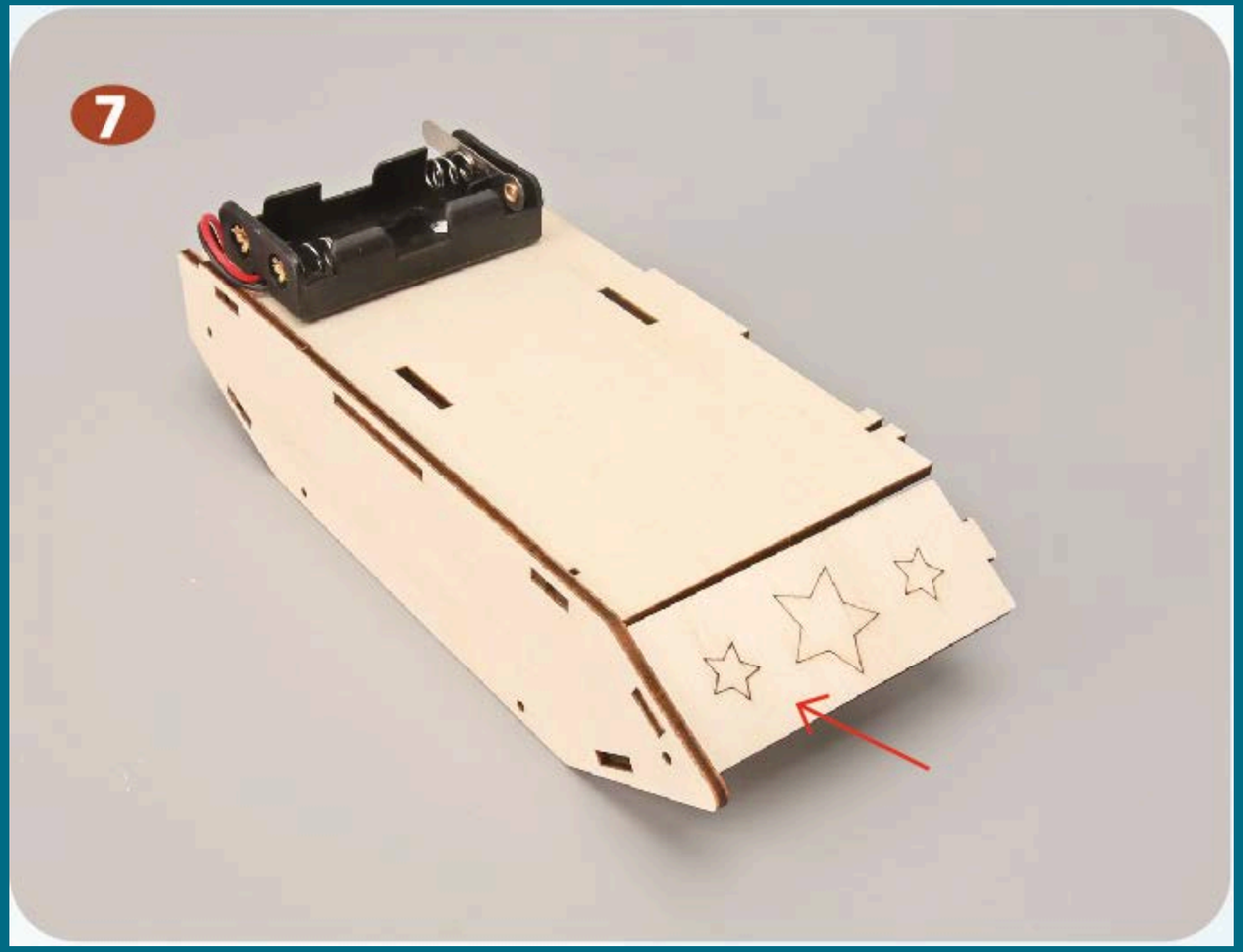
06

As shown, assemble board No.4 with the base plate.



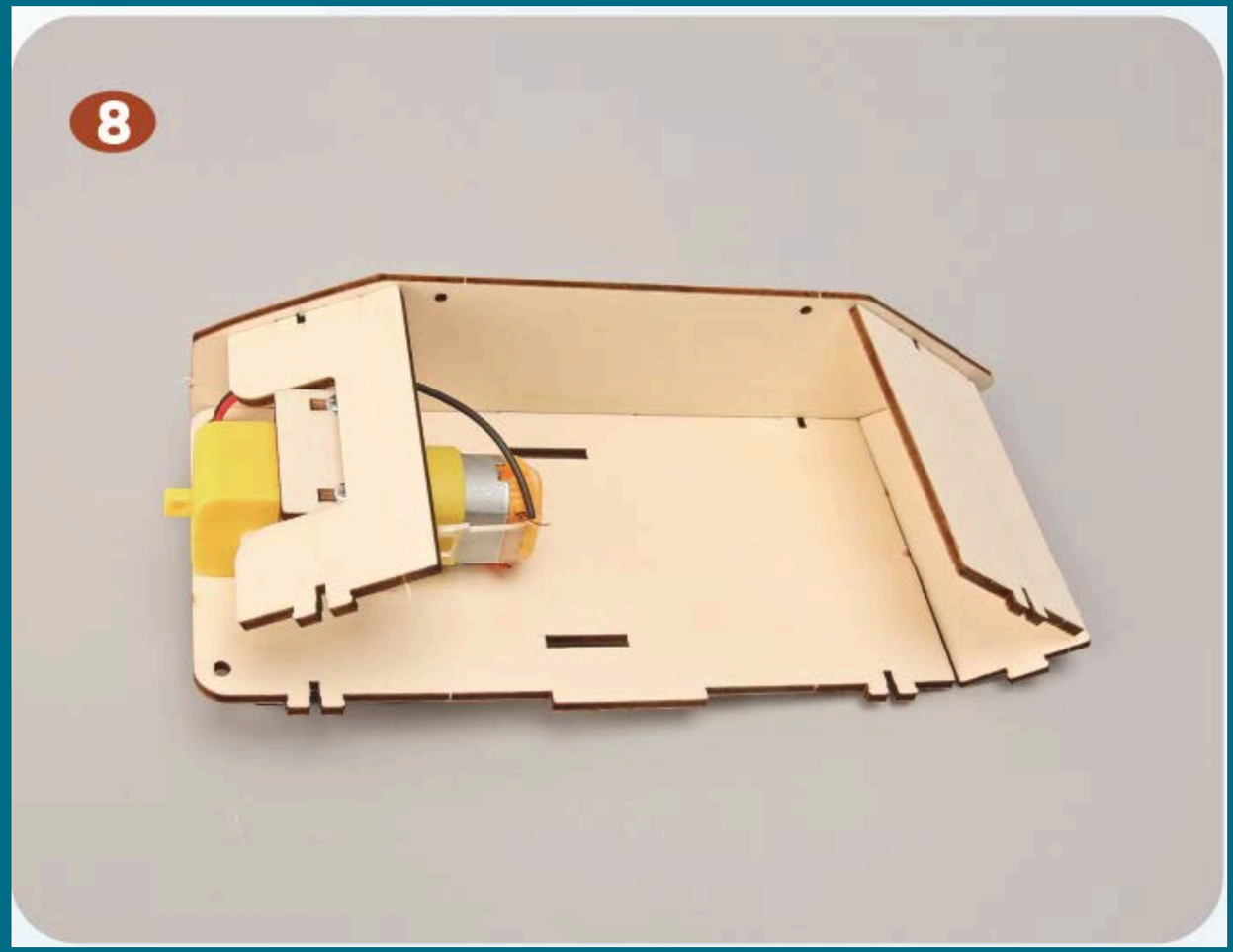
07

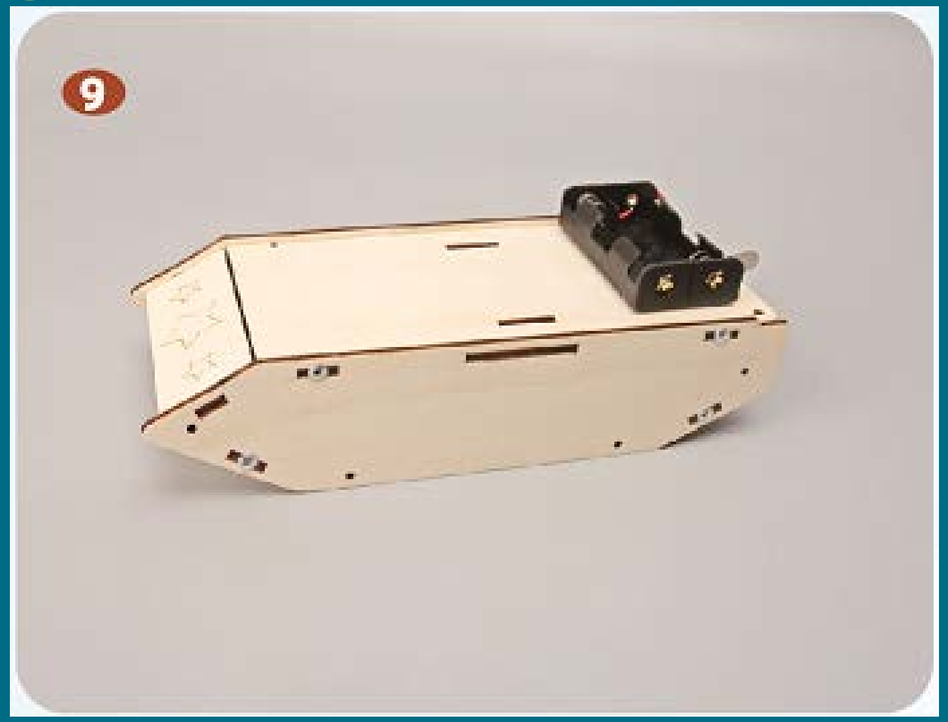
As shown, install board No.5.



08

As shown, assemble boards No.6 and No.7 on the underside of the base plate.

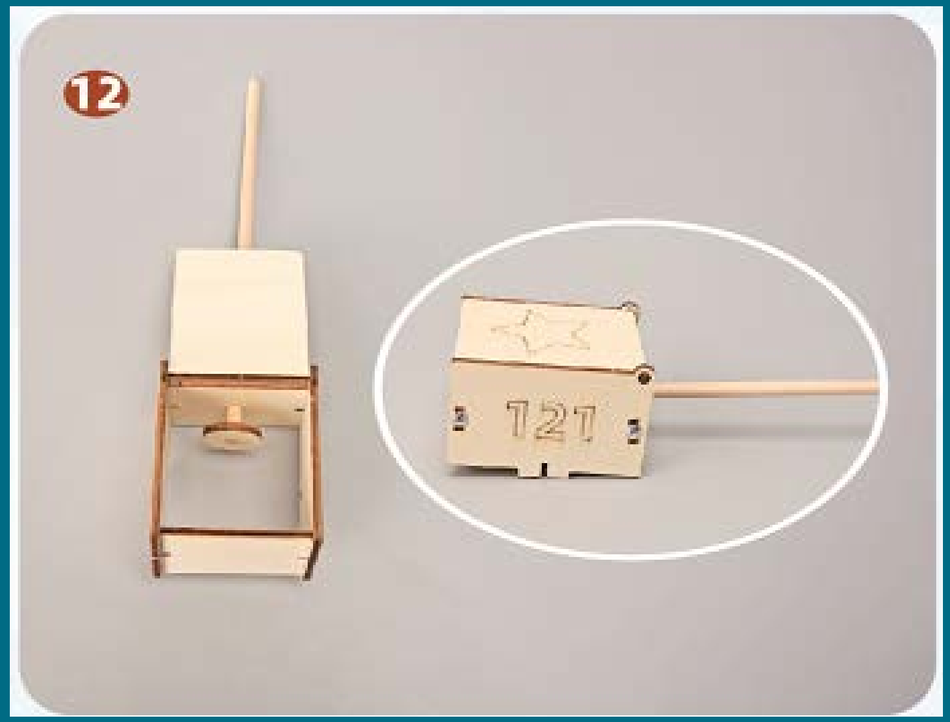




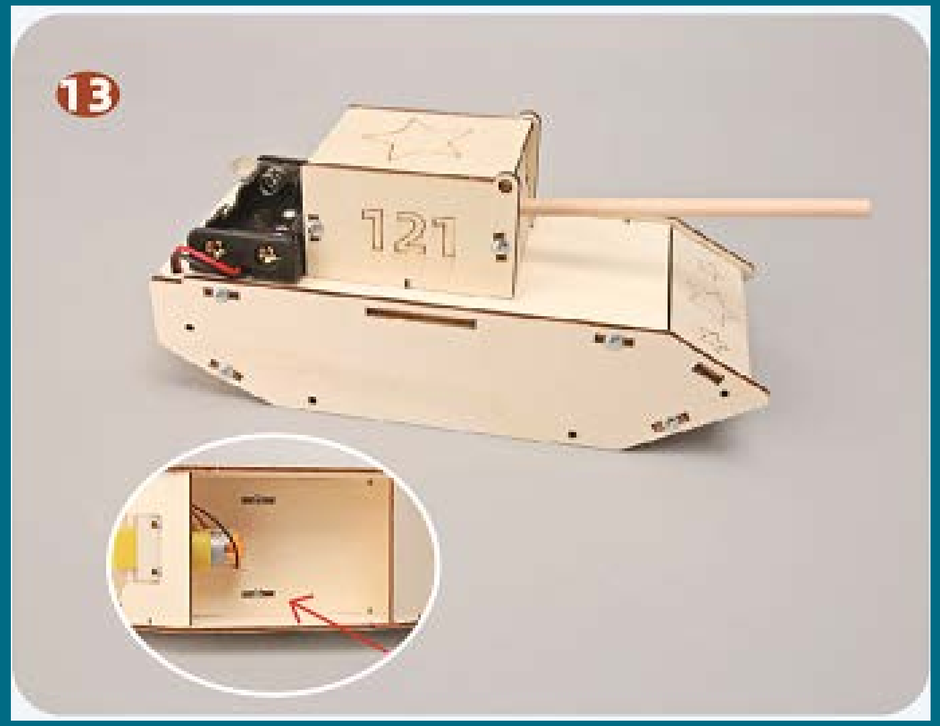
As shown, install the other No.4 board and fix it with screws.

Then assemble boards No.8, No.9, and No.10 together.

As shown, assemble the other No.8 board with No.11 board.

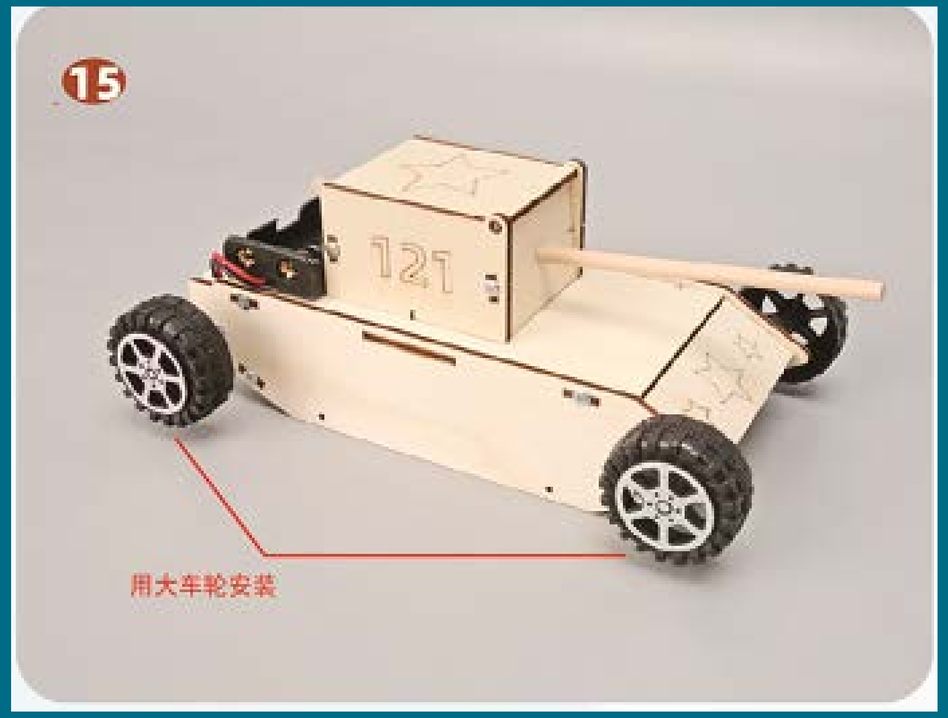


Then install the wooden rod through the hole in board No.10 and fix it with screws.

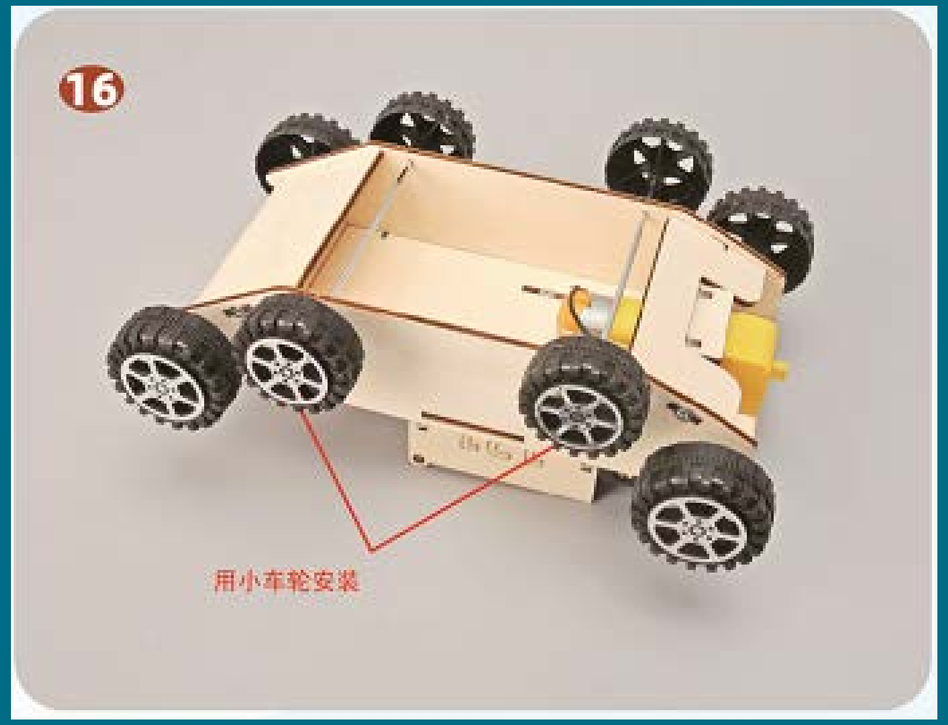


As shown, combine the structure from Step 12 with the tank body and fix it with screws.

Then install the 50 mm shaft and large wheels on the motor bracket.



As shown, install a long 110mm shaft and two large wheels at the front of the tank.



Then install two long 110mm shaft and four small wheels as shown.

As shown, install the tank tracks — and it's done!

Insert the batteries and start your mini experiment!

Scientific Knowledge

The Development of Tanks

Tanks have existed for over 100 years. Their invention had a major impact on the world, especially in warfare.

Tanks remain a key offensive weapon in future ground combat.

Many countries are actively developing new main battle tanks for the 21st century, using the latest advances in modern science and technology.

Principle

Electrical energy powers the motor, which drives the reduction gears to increase torque, thereby turning the wheels and moving the tank forward.