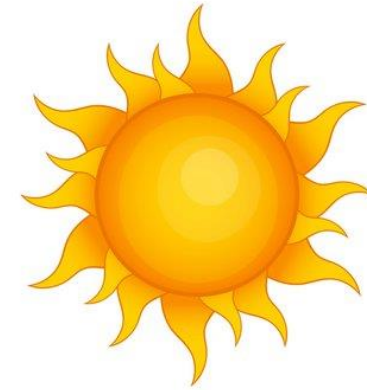


Renewable Energy



By the end of the lesson, I should be able to



Understand what is a renewable resource.
Understand what is sustainable, and how it differs from renewable.
Understand what is a circuit, and how to use wires to connect one.
Use laser cut materials, an engine, wheels, and wires to build a solar power car.



What is Energy



Energy is the ability to **work**. It **powers** everything around us, including you!

Energy comes in many forms. Some is stored for later use.

We use energy every day.

- Cook food
- Ride bikes
- Electronic devices
- What else?

What is Energy



- Wind
- Solar
- Coal
- Oil
- Food

These are energy resources!



- Electrical
- Thermal 热能
- Mechanical 机械能

These are the power for direct work!



- Power things
- Heats our homes
- Moves objects
-
-

Energy is essential for life



Non-Renewable Energy

- Takes a very long time to make more
- Is limited
- Pollution



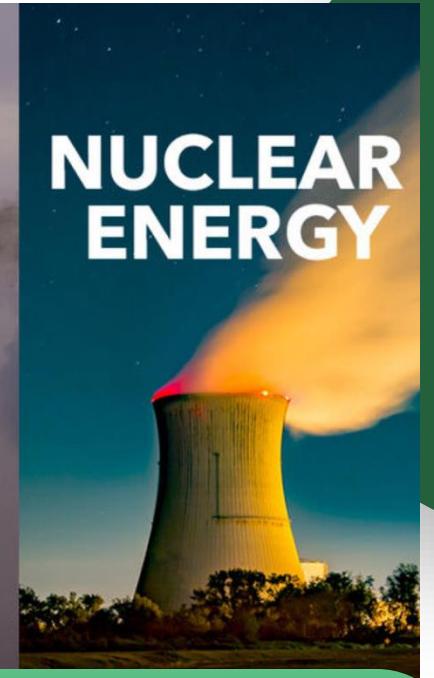
OIL



COAL



**NATURAL
GAS**



**NUCLEAR
ENERGY**

Dirty & Dangerous

Renewable Energy

- Comes from

nature

- Never runs out

- No extra



Clean & Sustainable



Renewable vs Sustainable

Renewable means that something can be used again and again without running out. It's like a special kind of energy or resource that comes from nature and can be replaced naturally.

Example:

Think about a tree. When it grows, it can give us wood, which we can use to make things like paper or furniture. If we take care of the tree and plant new ones, we can keep getting wood forever. So, trees are a renewable resource because they can grow back!

Another example is sunlight. We can use sunlight to make electricity with solar panels, and the sun will keep shining every day. That's why we call it renewable!

Sustainable means being able to use things in a way that keeps them safe and healthy for a long time. It's about making sure we don't use everything up so that future generations can enjoy it too.

Example:

Think about a tree again. It takes about 15-30 years for a tree to grow big enough to be used for furniture. That means, to be sustainable, we need to plant trees every year so that in 15-30 years, we have enough trees to continue making more things!



Importance of Renewable Energy



Protecting the Earth.

Becoming More Efficient & Affordable

Provide a better future world

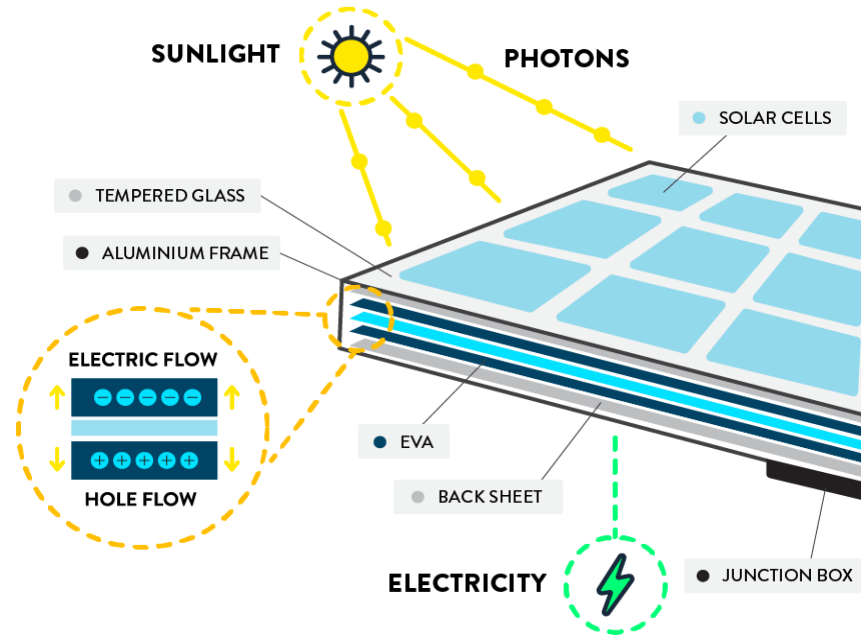
Solar Energy



Solar panels
capture sunlight



turn into electricity with
photovoltaic cells 光伏电池 (inside the panels)



power things



Uses of Solar Energy



Solar energy is used in many ways.

1. Power homes, charge devices, and run vehicles.
2. Can be installed on rooftops or in large solar farms.
3. Used in small devices like calculators and watches.

It's a versatile and efficient energy source that provides clean electricity.



Advantages

**abundant and
available**

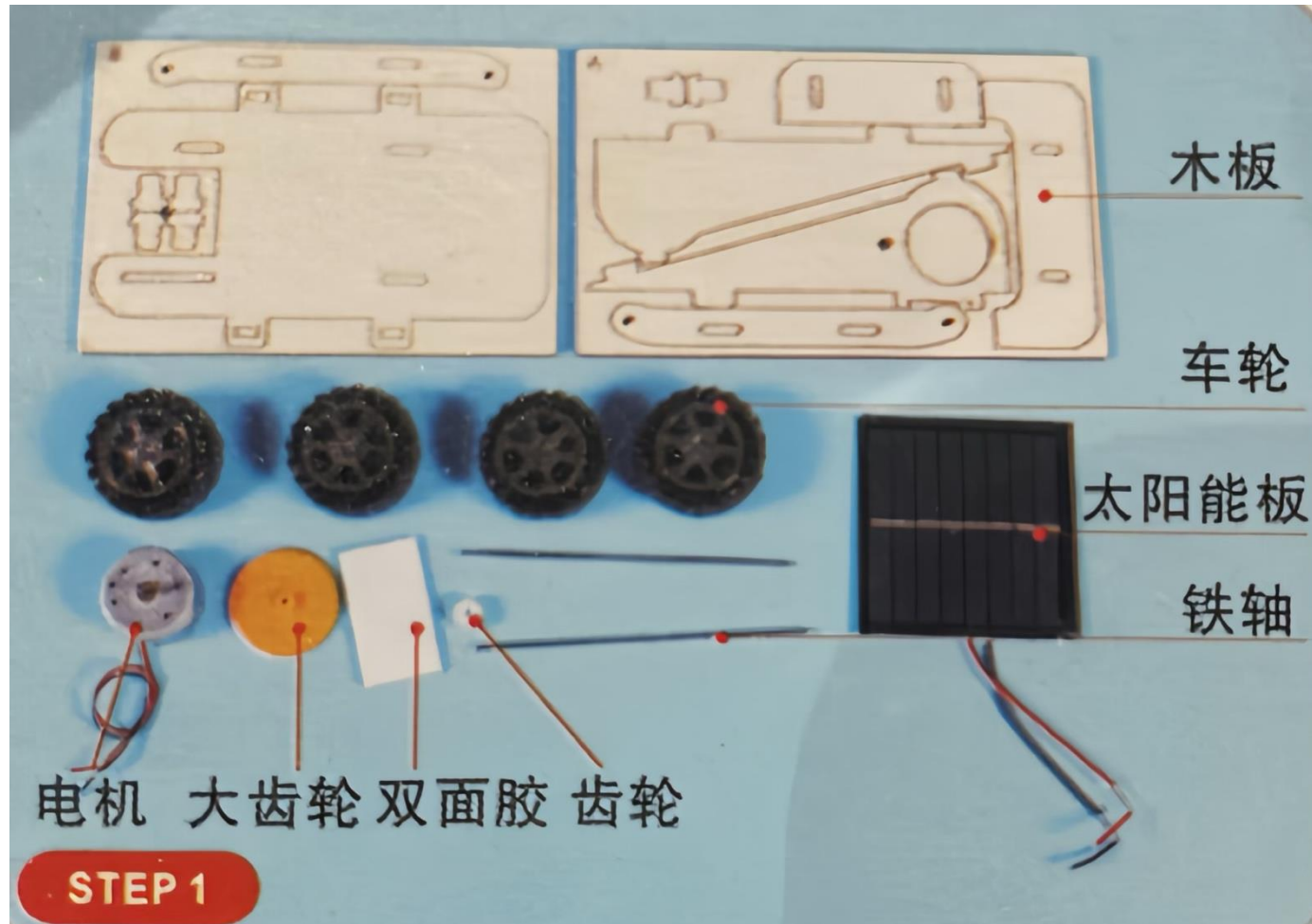


**better
future**

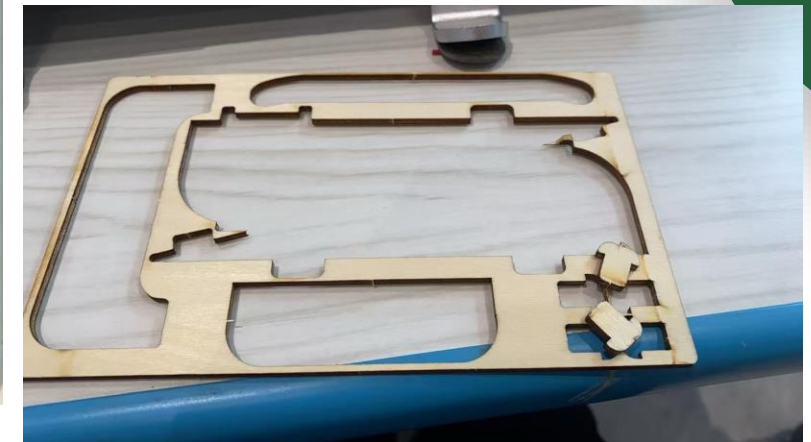
**good for the
environment**

**affordable and
efficient**

Make a Solar car!



1. Check your material!



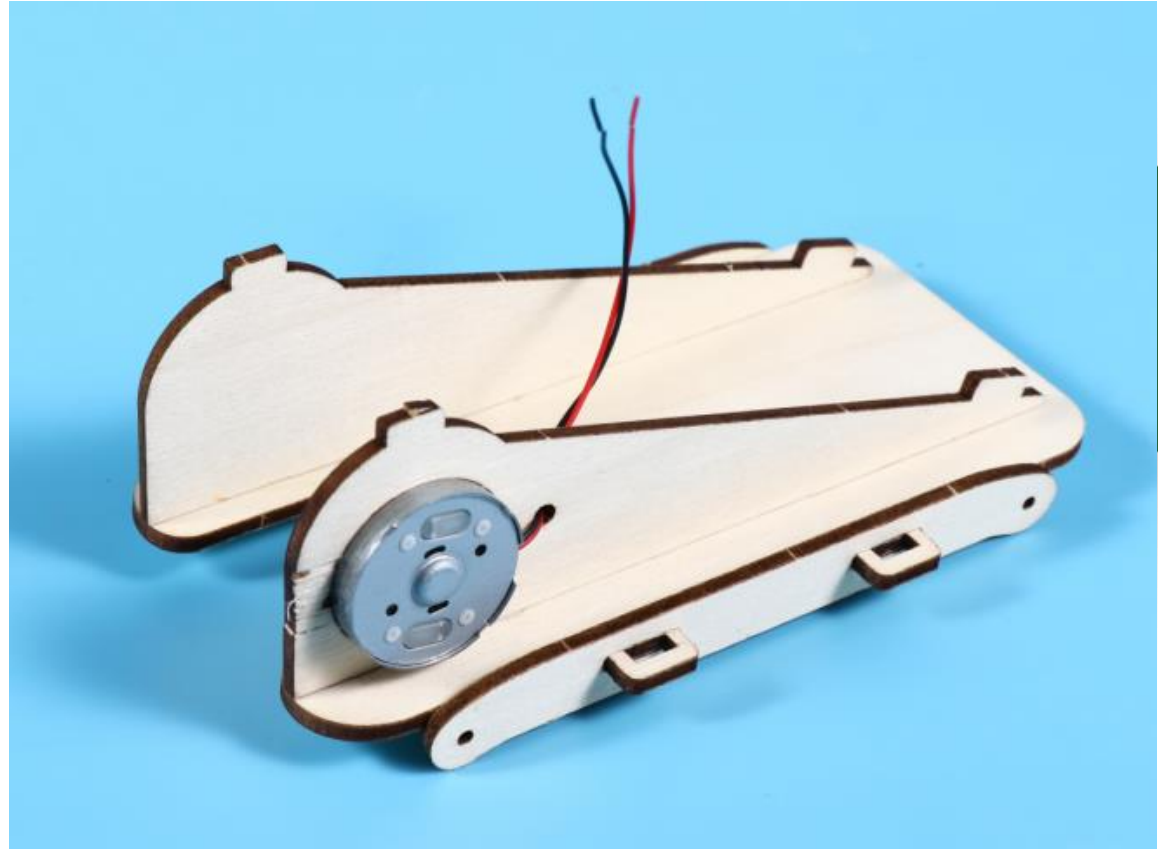
2. Separate the parts

Steps to Build the Car



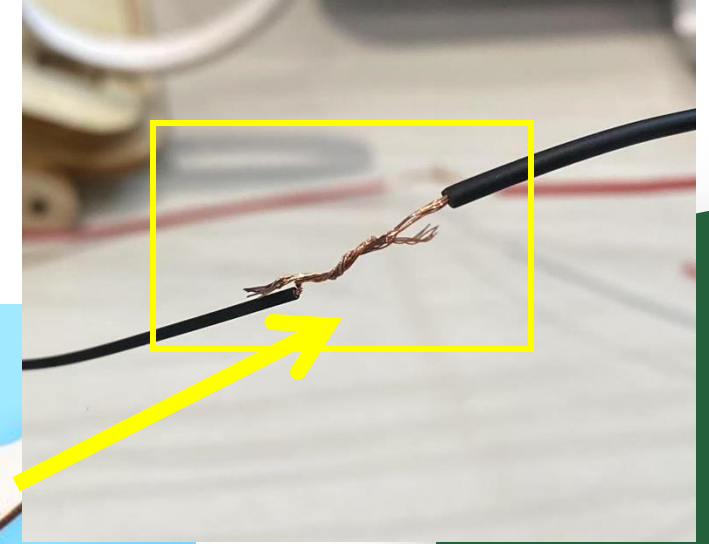
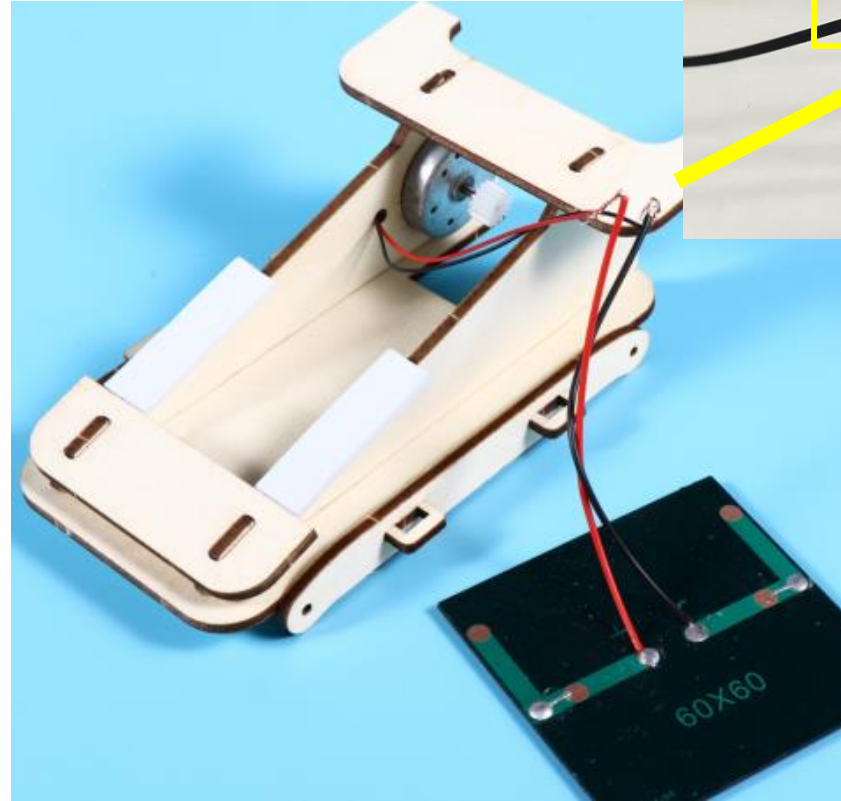
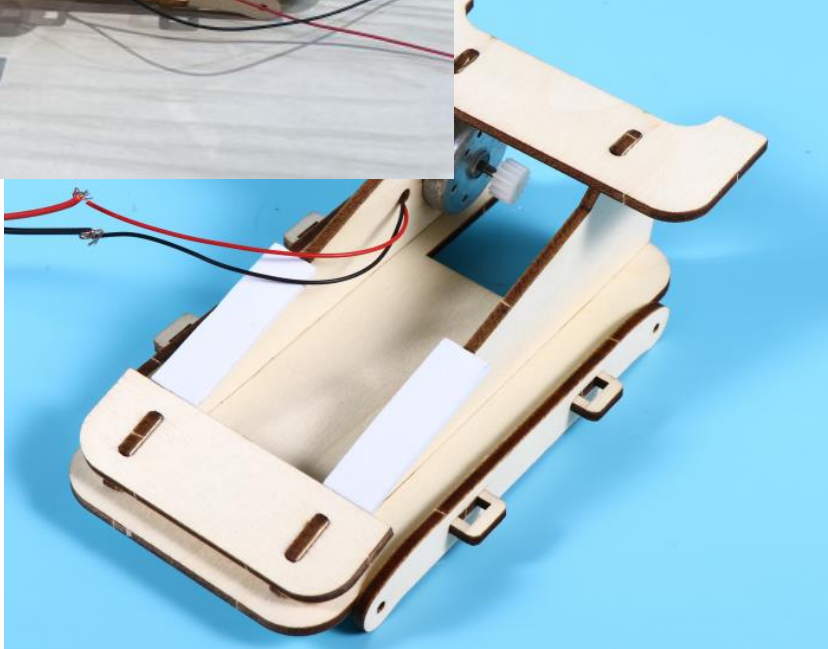
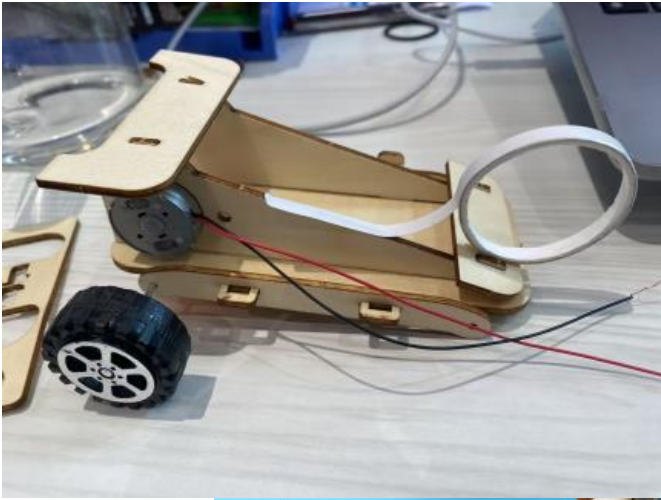
3. Put the base together (press hard)

Steps to Build the Car



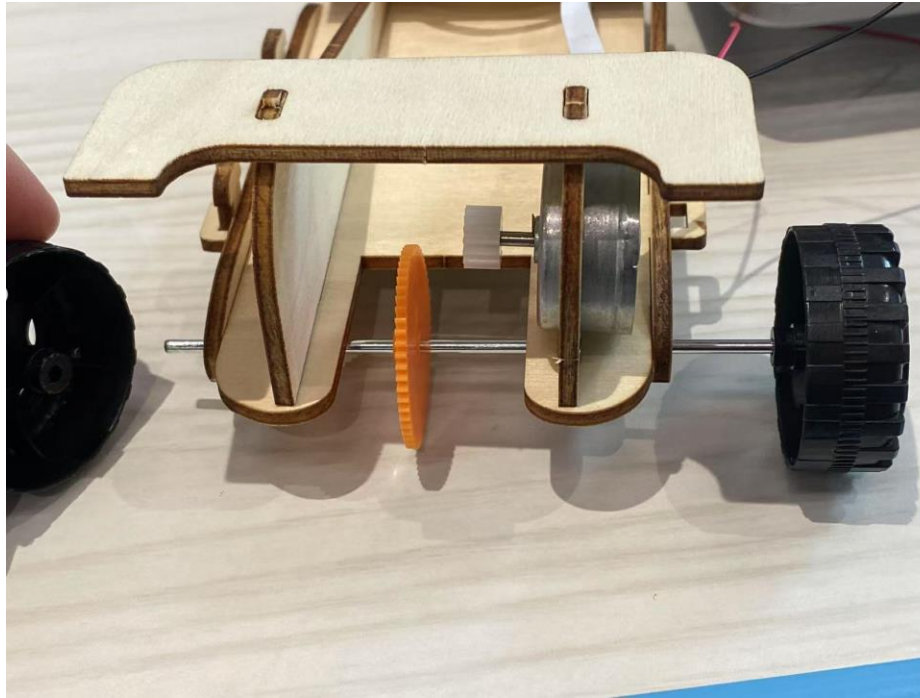
4. Connect the motor and the white gear. Then, press the motor into the hole.

Steps to Build the Car



5. Apply tape and wrap two wires **tightly**, black to black & red to red.

Steps to Build the Car



5. Put the solar panel on.

6. Install the tires. **Don't** put the tires too close to the car.

Steps to Build the Car



Go outside on a sunny day.

Place it under sunlight and try !

Sun heats the panel, which turns into electricity.

The motor drives the shaft, makes the tires turn, which makes the car move !



A Better future

Renewable energy is becoming more popular. More people are using solar, wind, and hydro energy.

Learning about these sources helps us make better choices for the planet

The Future of Renewable Energy

爱设计是一家智能创意科技公司，是国内领先的内容创意全链路服务公司，致力于构建“创意资源+智能创作+内容管理+投放分发+数据监测的内容创意全链路平台”



Renewable energy is becoming more popular. More people are using solar, wind, and hydro energy.



Technological advancements are making renewable energy more efficient. Innovations in solar panels and wind turbines are driving progress.



Education is key to promoting renewable energy. Learning about these sources helps us make better choices for the planet.