

Let's make it using wireless power supply!

What to use

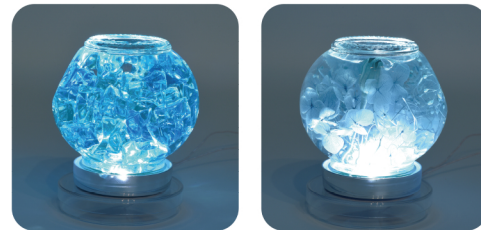
-Experimental kit set



What to prepare

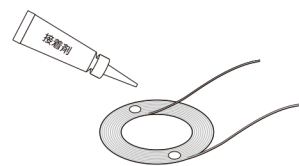
When making a lantern

- Bottle (with a lid not made of metal)
- Glue
- Decorative accessories (things that do not contain metal)

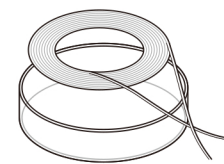


When making a lantern

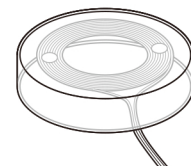
It is dangerous, so be sure to unplug the power when preparing or not using it.



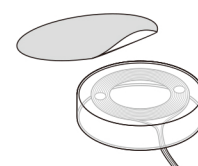
- 1) Attach adhesive to the power transmission coil
*Double-sided tape is also OK



- 2) Glue it to the inside of the petri dish and let it dry thoroughly.

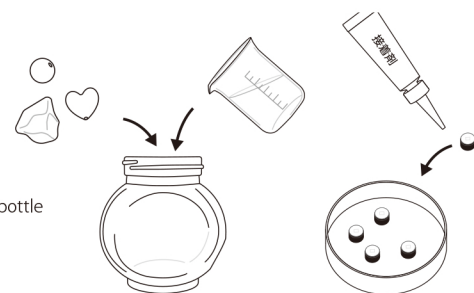


- 3) The power transmission pedestal is completed by placing the coil on top!



- 4) Decorate freely with non-metal stickers and magic markers!

- 5) Put the prepared decorative items into the jar.



- 6) Let's put water in the bottle (it will shine beautifully)

- 7) the coil with power receiving LED to the lid with adhesive.

- 8) Once dry, close the lid tightly to prevent water from leaking!



- 9) Complete! Let's display it on a pedestal!



You can make a variety of things by applying what you learned from experiments and how to make lanterns!



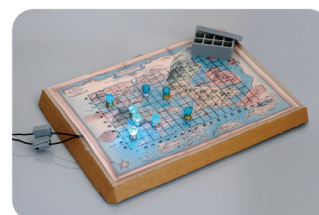
astronomical observation set



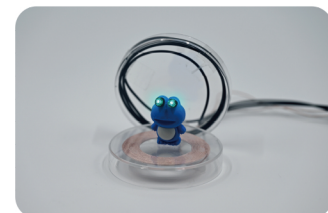
glowing stirrer



glitter hourglass



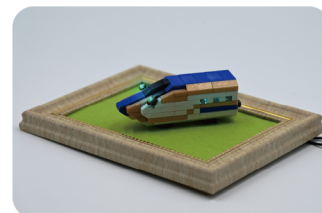
treasure hunt game



glowing doll



glowing accessories



glowing model decoration



glowing snow globe

Wireless Power Transfer Experiment

B10-4117-W0



Learn while experiencing advanced technology!

Everyone from children and adults can enjoy!

Variety creations depending on your ideas.



*The photo is an example of a production sample. Please prepare the materials according to what you want to create.

Do you know anything that uses wireless power transfer near you? With this kit, you can learn how wireless power transfer works. Let's try an experiment to find out why electricity can pass even if you don't touch it!

! Precautions for use Please be sure to read before use (For parents, please be sure to read)

- This product is designed for educational purposes. Please do not incorporate it into actual products.
- Children under 9 years old must be supervised by a parent or guardian when performing experiments.
- Small parts are contained. Never put them in your mouth.
- Please be sure to disconnect the power during production.
- Do not remove the cover covering the power transmission board. There is a risk of electric shock or malfunction.
- The power transmission board is not waterproof, so never put it in water.
- It does not support charging of smartphones, so please keep them away from it.

- If you turn on the power without a coil attached, the power transmission section will generate heat. Be sure to connect the power supply with the coil attached.
- Do not place any metal objects within 5 cm around the power transmission coil. There is a risk of overheating.
- In the event of an abnormality, the protection circuit will stop the operation and the power receiving LED coil will not light up.
- In that case, wait for a while after unplugging the power, then check that the coil is attached properly and that there is no metal around it, and then connect it again.

Kit contents

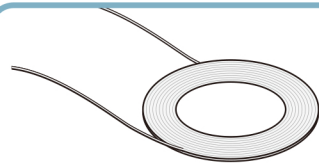
- ① plastic plate
- ② Tx(Transmitter) coil
- ③ coil wire
- ④ Rx(receiver) coil LED (5 pcs)
- ⑤ Oscillator of Tx Coil (do not use without coil connected)



Things to prepare: For experiment

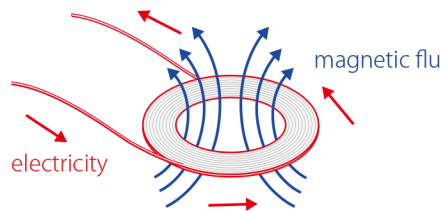
- Cylindrical (used for winding coils)
 - tape
 - coil wire
 - Paper (used as a mount for pasting the coil)
 - Double-sided tape (wide type is recommended)
 - writing utensils
 - USB power adapter (maximum output 1A or more)
- Please prepare the parts according to the product.

What is wireless power supply?



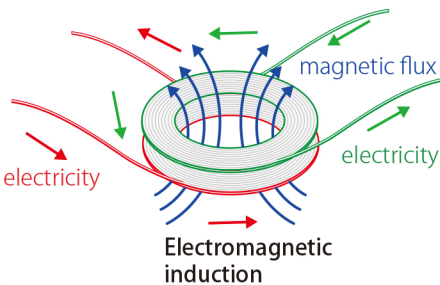
To send electricity, you need to connect a cord to send electricity.
"Wireless" means "without wires," and "wireless power transfer" refers to a technology that allows electricity to be transmitted without the use of wires or cords.

When electricity flows



Wireless power transfer does not use a wire cord, but instead uses a "coil."
A coil is a spirally wound wire that conducts electricity, and when electricity passes through the coil, it creates a magnetic field (a space where a magnetic force is generated). The magnetic field changes depending on the direction of electricity flow, and the direction and strength of this magnetic field is expressed as "magnetic flux."

When the coils get close to each other

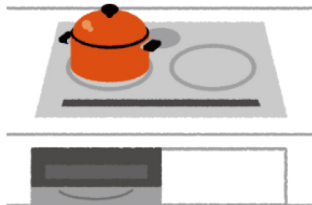


When Tx(Transmitter) coil and Rx(Receiver) coil are brought close together, the magnetic flux inside the receiving coil changes, causing electricity to flow to the receiving coil. By changing the energy from "electricity" -> "magnetic flux" -> "electricity", electricity can be transmitted without physical contact. This phenomenon is called "electromagnetic induction."

Learn more!



An example of a product that uses electromagnetic induction technology is an IH cooking heater. IH uses eddy currents that are generated when magnetic flux passes through metal. As the name suggests, eddy current is an electric current that creates swirls, and when this current flows through the metal of the pot, it generates heat. So be careful not to place any metal near the coil. It can get hot and cause injuries and accidents!

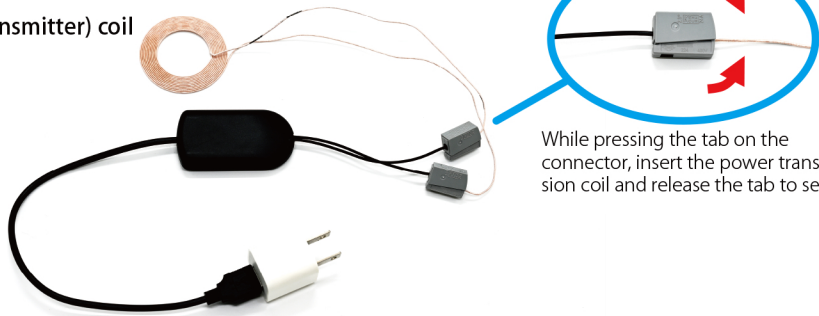


Let's experience wireless power supply!

Prepare the RX coil to send electricity with Using the kit

First, connect the RX coil to the oscillator box.

②Tx(Transmitter) coil



While pressing the tab on the connector, insert the power transmission coil and release the tab to secure it.

④the coil with power receiving LED

It has an LED and a small coil built into it.



① plastic plate

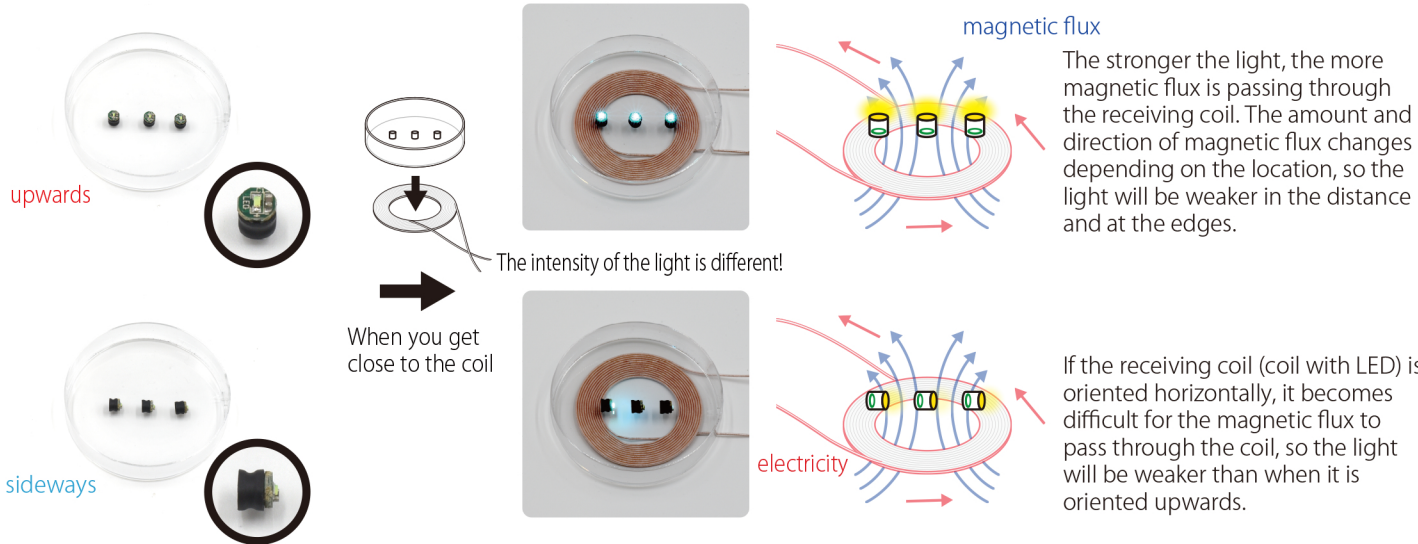
I use it as a power transmission pedestal in crafting.

⑤power transmission board
It is used by connecting the board coil to transmit electricity.

Attach a USB power supply to the USB side.

Experiment 1 : Let's light up the LEDs!

The LED coil contains a small coil, so the way it lights up changes depending on how it receives magnetic flux from the power transmission coil.
Place the coil with LED on the pedestal and try it out!

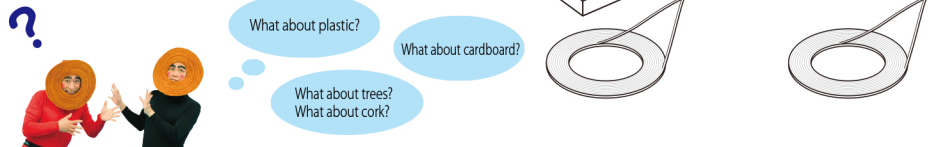


If it doesn't light up, turn off the power and check if the coil wire and connector are firmly fixed. It's dangerous, so be sure to unplug the power when the coil is not attached.

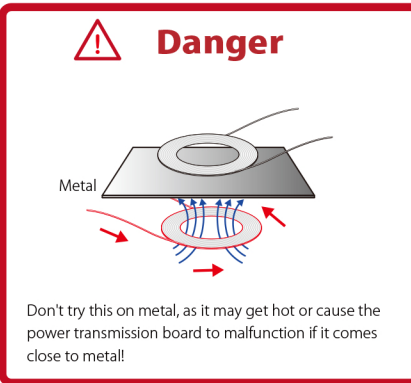
Experiment 2: Will the LED light up even in this situation? !

We know that wireless power transfer passes through the air, but is it possible to transmit electricity even if there is something else between the coils? Also, will the LED light up even under water?

*Do not put it in liquids other than water.



It's dangerous, so be sure to unplug the power when the coil is not attached.



Experiment 3: Make your own coil!

It's dangerous, so be sure to unplug the power when the coil is not attached.

