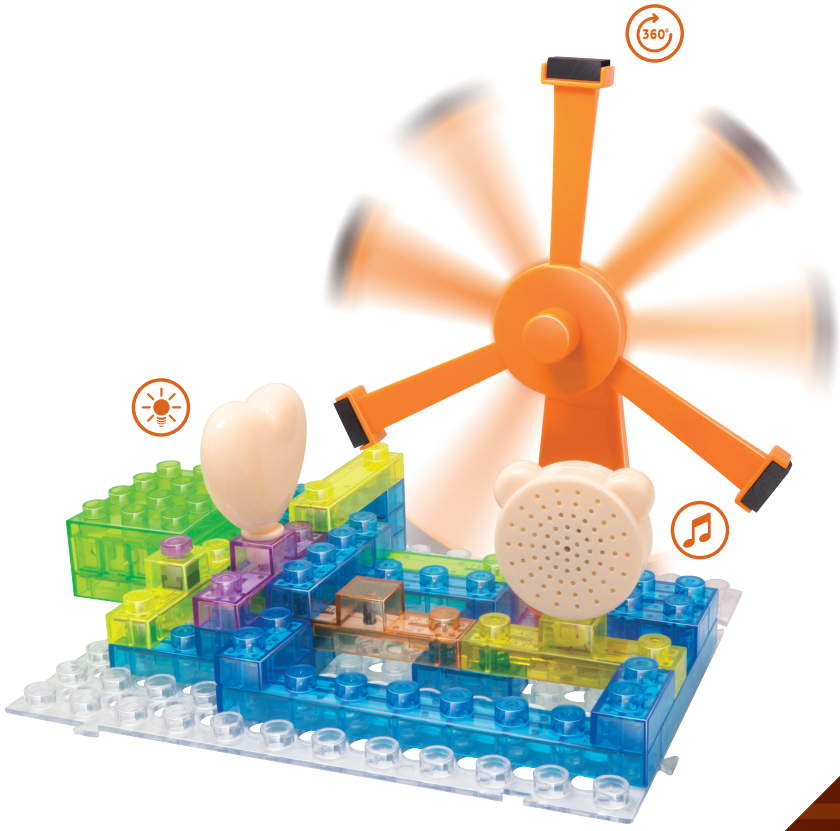
DC13996

Lectrixs

Instruction Manual
Electronic Building Blocks Circuits Set
(64-Piece Set with 600 Projects)



FOR AGES 8+ Years

1 YEAR WARRANTY

Lights

Music

Thinking

Colorful

MOM TESTED & APPROVED!

INSTRUCTION

WARNING: Be careful when using parts with sharp point or edges. Recommended for children 8 years and up. Keep away from children under 3 years old. This kit is to be used only with 4.5Volt (1.5V*3) batteries! Under no circumstances should you use transformers, or any other electrical source!

WARNING: Only for use by children aged 8 years and older. Instructions for parents are included and have to be observed.

CAUTION: Must read all the instructions by the parent together with the children so that they are fully understood before intended for use by children aged 8 years and up.

Do read these instructions before use, follow them and keep them for reference.

WARNING: Toy contain functional sharp point and edge.
Keep away from children under 3 years of age due to small parts.

Operation Precaution: All assemblies are done together with an adult required. Adult supervision required.

Never connect anything directly to a mains outlet, otherwise will cause the risk of electic shock.

Any different polarity and supply terminal are not to be short-circuited, otherwise may cause batteries leak, explode, fire etc, exhausted batteries should be disposed correctly.

Can't direct contact the hot surface of accessible parts during and after the experiments operation, like the surface of batteries and other electron components surface.

Do make sure the temperature is downed, otherwise may cause risk of scald. The wires are not to be inserted into socket-outlets.

FOREWORDS

Electronic Building Blocks are provided for kids above 8 years old.
The instruction brochure is specially designed for catering all electronic series of products, conveying with both pictures and indications. Based on the principles of circuit diagram, the building blocks are stretched to human control, magnetic control, light control, water control, voice control and touching. In the process of building the circuits, you will experience for so much amazing from the sounds, light or whatever, which will surprise you with the strong senses of achievements.

Electronic Building Blocks All projects are specially designed in step by step, from easy to complicated. it integrates learning with entertainments and principals of electricity, which all these will better lead children into the wonderland of electricity.

Only one assembling example are offered in the following instruction, because they are the expression of the principals. Also we are looking forward to see your creativity and imagination that can be expressed in projects. Surprise us!

INSTRUCTION

1. **Electronic Building Blocks** consisted with several plate of electronic components and wires in different lengths, which all plate are printed with numbers, eg. when you see [76] is printed in the block, it means lamp should be set here.
2. All plate can be assembled in different structures.
3. More details, please see in the following instructions.

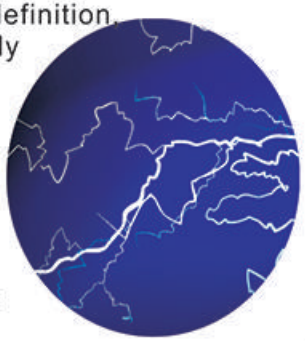
Do not mix old and new batteries.
Do not mix alkaline,standard(acrbon-zinc)or rechargeable(nickel-cadmium)batteries.

About Electricity

1.What is Electricity?

Q: We all know that so many things are connected to electricity, such as lamp, TV, air conditioner, can you tell me what is electricity?

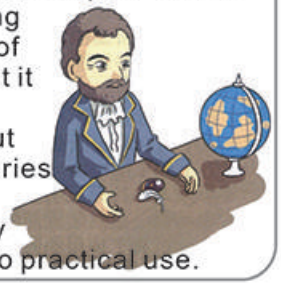
A: Electricity is just an abstract definition, it exists in everywhere in our daily life. Actually, it can be defined as one kind of energy that referred as the movement of sub-atomic particles (with their electrical charges) through a material due to an electrical charge outside the material. There are some obvious phenomena happens in our daily life, such as lightening and static electricity, and magnetism.



2.Who Discovered Electricity?

Q: Who Discovered Electricity?

A: I am going to tell you a story about it that can be traced back to at least 600 BCE. When, in ancient Greece, it was found that rubbing fur on amber caused an attraction between the two. This discovery is credited to the philosopher Thales of Miletus. One day, when he was polishing his amber at home, he found that a piece of fur was attracted by the amber after he put it on the desk, than he split them, but it happened again. So he made record about the phenomenon. It was to be many centuries before anyone was able to connect this phenomenon with lightning, and a century more before electrical currents were put to practical use.



3.How to Categorize Electricity?

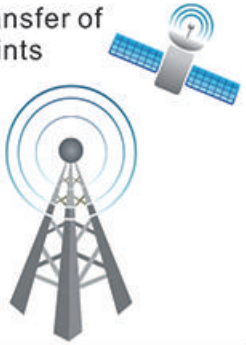
Q: Are we using the same electricity to motivate the air conditioner and the remote controller?

A: Good question! Actually they are totally different. What we use in the air conditioner is called alternative current, because the flow of electric charge periodically reverses direction. All the home appliances are in alternative current; whereas, we use direct current in the remote controller, in which the flow of electric charge is only in one direction. Batteries operated are belong to direct current.

4.Wireless

Q: Daddy tells me that the weather report is transferred by the satellite, but it is impossible for us to settle down the wire in the space, how do we deliver the messages?

A: Wireless communication is the transfer of information between two or more points that are not connected by an electrical conductor. So scientists upload the information by the wireless waves ,so it can transfer to wherever they want.



About Electricity

5.What did human do in electricity research ?

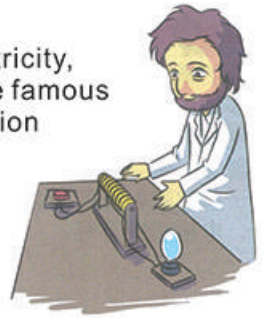
Q: What did human do in electricity research after Miletus' discovery?

A: Dated back to the 17th century, Benjamin Franklin, a famous American scientist, proved that lightning was caused by electricity by describing an experiment in which an electrical conductor would be used to extract power from a thundercloud. In the experiment, he flew a kite with a metal key attached to it into a suitable cloud. The precise historical details are unclear, but he may have then retrieved the key and discharged electricity from it. By using the principles, he successfully invented for lightening rod.In 1799, the Italian scientists Alessandro Volta went on to create a "voltaic pile" consisting of alternate layers of copper and zinc separated by paper soaked in salt water. This generated a larger current and is credited as the first battery. In 1821,the English scientists Michael Faraday discovered the first electric motor in the world, even though it was very simple, nowadays, all the other motors that we use today aregenerated from that one. Ten years later, Faraday contributed to the world with his second crucial invention, dynamo.In 1866, the first industrial dynamo was invented by a German called Siemens.

6.Unit of Electricity

Q: All physical quantities have unit, how about electricity?

A: Ampere (amp) is the unit of electricity, which its name is in honored for the famous French physician and the contribution that he made.



7.Application of Electricity

Q: All the home appliances are out of work when blackout happens. It is very inconvenient without electricity in life.

A: Absolutely! We need electricity more and more, because it can either use for cooking, watching TV, or transportation. All the application contribute to the world with more convenience and efficiency. With exaggeration, it is equally important to Oxygen for human being.
If there was no electricity, there was no progress in the world.

8.What is Triboelectrification?

Q: I found it very interesting that the plastic ruler cannot attract for any bits of paper ,but when it was rubbed among the hair for several time, it does.

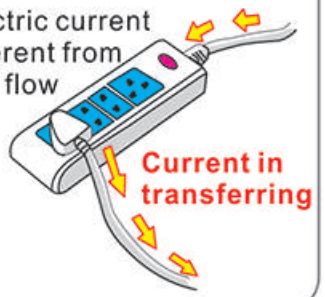
A: Yes, that's it! This is the phenomenon of Triboelectrification. Rubbing glass with fur, or a comb through the hair, can build up triboelectricity. Most everyday static electricity is triboelectric. The polarity and strength of the charges produced differ according to the materials, surface roughness, temperature, strain, and other properties.

About Electricity

9.What is Current?

Q: What is current? Is that like water flow? Can it flow too?

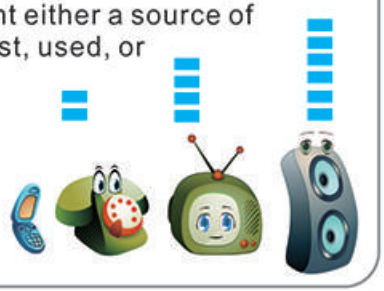
A: Yeah, good question too. Electric current can flow too. But It is totally different from water flow. Electric current is an flow of electric charge.



10.What is voltage?

Q: "1.5V",We always can see such kind of signal. What is Voltage?

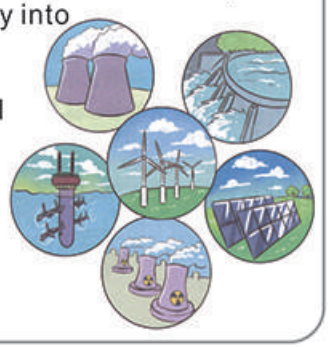
A: Voltage is equal to the work done per unit of charge against a static electric field to move the charge between two points. A voltage may represent either a source of energy (electromotive force), or lost, used, or stored energy (potential drop). Common voltage supply for the flashing light batteries.



11.Electricity generation

Q: How to make electricity for daily using?

A: There are seven fundamental methods of directly transforming other forms of energy into electrical energy: coal-fired power generation, Hydropower Generating, nuclear energy power generation, tidal electric power generation and Solar thermal energy. Certainly there are more methods for electricity generation to be found, since the scientists are always on the way of research.



12.Batteries Recycling

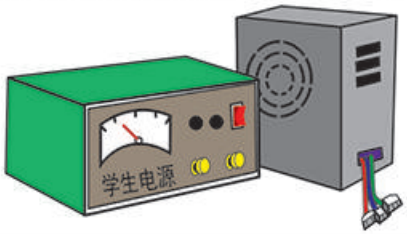
Q: How to recycle for used batteries?

A: Battery recycling aims to reduce the number of batteries being disposed as municipal solid waste. Batteries contain a number of heavy metals and toxic chemicals and their dumping has raised concerns over soil contamination and water pollution.Most types of batteries can be recycled. However, some batteries are recycled more readily than others, such as lead-acid automotive batteries (nearly 90% are recycled) and button cells (because of the value and toxicity of their chemicals). Other types, such as alkaline and rechargeable, e.g., nickel–cadmium (Ni-Cd), nickel metal hydride (Ni-MH), lithium-ion (Li-ion) and nickel–zinc (Ni-Zn), can also be recycled.So dear kids, please do something for Batteries Recycling in our daily life from now on.

About Electricity

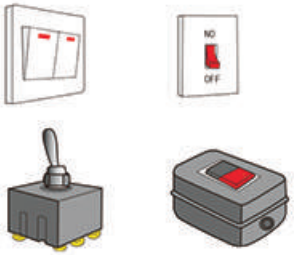
13.Power Supply

A power supply is an electronic device that supplies electric energy to an electrical load. The primary function of a power supply is to convert one form of electrical energy to another. It can be defined into DC(=direct current) and AC(alternating current) power supply. The common use of DC power supply are batteries, in which chemical energy is reversed into electricity. Circuits in every family belongs to AD power supply.



14.Switch

Switch is a device that control all the other component in the circuit, it used for power connection and disconnection. A switch should be connected in series with the other functional component, otherwise, it would cause short circuit.

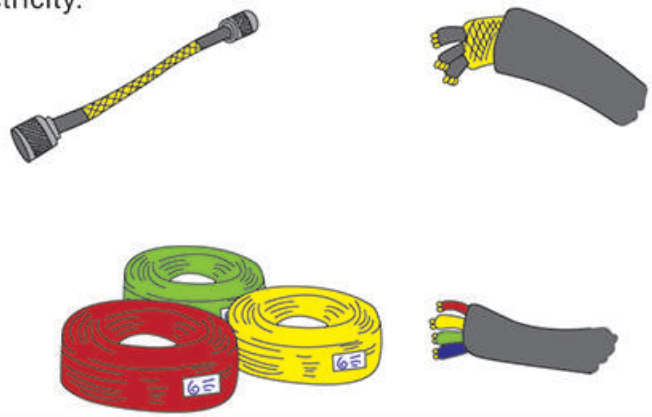


15.Home Appliances

Home appliances are electrical/mechanical machines which accomplish some home functions by reversing some other energy, such as cooking or cleaning.

16.Wire

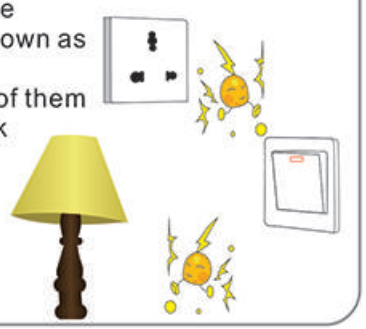
Wire is mainly used for connect the circuit and transfer the electricity.



About Electricity

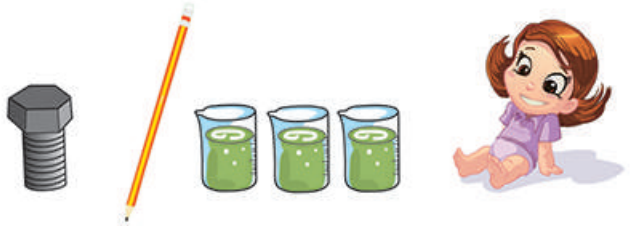
17.Circuit

Like flowing water, current is flowing in the circuit too. Electric circuit, that is to accomplishing the current transferring by connect the power supply, switch and other functional component with wires. It can be mainly defined by series and paralleled circuit. A circuit composed solely of components connected in series is known as a series circuit; likewise, one connected completely in parallel is known as a parallel circuit.When two lamp are connected in the series circuit, if one of them is burnt out, the other one cannot work too. However, it won't happen in the parallel circuit. All home circuit are belonged to paralleled circuit for avoiding interferences.



18.Conductor

A conductor is an object or type of material that allows the flow of electrical current in one or more directions. The conductibility vary on different material. For example, metal, pencil core, acid or alkali salt. Human are conductor too. So, please pay more attention on electricity safety.

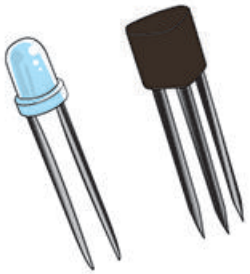


19.Insulator

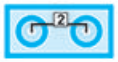
A substance that resists electricity is called insulator, such as glass, rubber, ceramics, plastic ruler and etc. The plastic cover outside the wires, wire nippers, screwdriver, these are our common application of insulator.

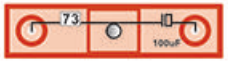
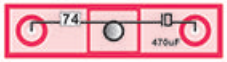
20.Semiconductor

A semiconductor material has an electrical conductivity value falling between that of a conductor, such as diode and triode. The conductivity of semiconductor material can be easily affected by the increasing temperature and flashing lights.

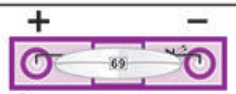
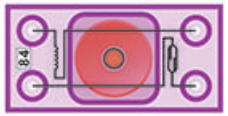
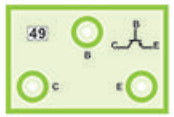
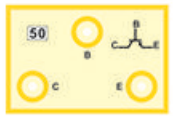
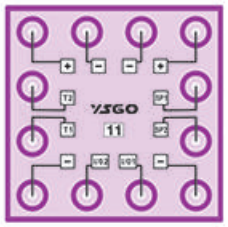


Component Lists

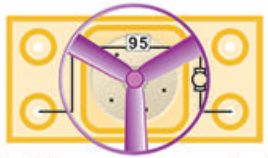
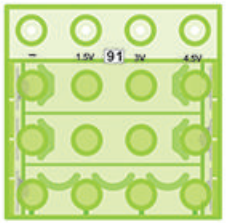
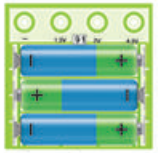
Numbers	Components	Amount	Diagram
1	Wire 1	6	
2	Wire 2	12	
3	Wire 3	6	
4	Wire 4	5	
5	Wire 5	1	
6	Wire 6	1	
8	Wire 8	1	
100	Raised Part	3	 X1 X2
61	Press Switch	2	
62	Switch	1	
76	Lamp	1	
80	Touch Piece	1	

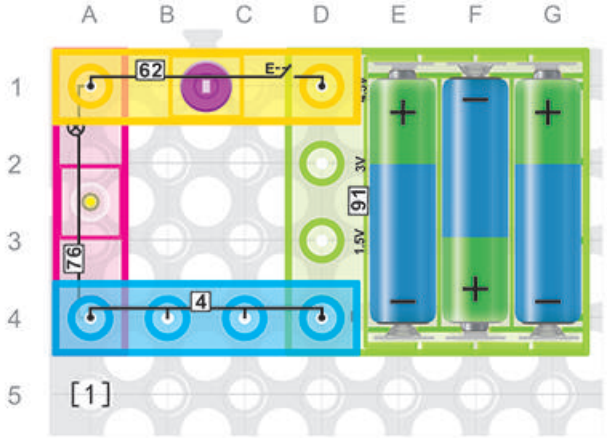
Numbers	Components	Amount	Diagram
83	Reed Switch	1	
41	100 Ω Resistor	1	
42	1K Resistor	1	
44	10 K Resistor	1	
45	100 K Resistor	1	
48	0.1 uF Capacitor	1	
52	10 uF Capacitor	1	
73	100 uF Capacitor	1	
74	470 uF Capacitor	1	
68	Photore-sistance	1	
9	Spring Wire	1	
7	Magnet	1	

Component Lists

Numbers	Components	Amount	Diagram
69	LED	1	 Note: Please make sure you recognize the right polarity(+/-) of the signal.
93	Speaker	1	
95	Motor	1	
87	Buzzer	1	
84	Inductor	1	
49	PNP Transistor	1	
50	NPN Transistor	1	
11	3 in 1 Integration	1	

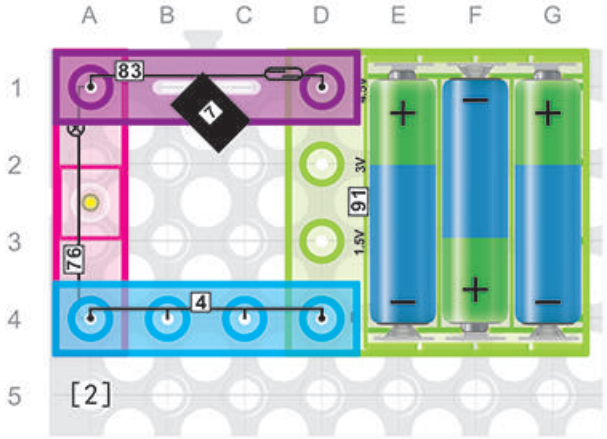
Numbers	Components	Amount	Diagram
90	Windmill	1	
39	Base Plate	1	

Numbers	Components	Amount	Diagram	Note
60	Fan Blade	1		 **Note:** When you are connecting the motor in the circuit, it should be necessary to connect with the two points that are in wires.
91	Batteries	1		 **Batteries Requirement:** 1. Type: DC 2. Nominal Voltage: 1.5 V/3V/4.5V 3. Size: 3X1.5 V "AA"



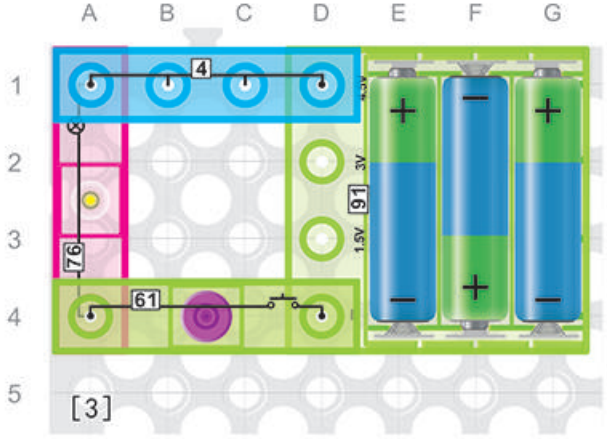
1.Build the Lamp Circuit

When you see the shining lamp in you house, do you know how to build the lamp circuit? Follow this diagram, Let's buildthe circuit step by step . Press the switch[62], you will see the lamp[76] is on. Release the switch[62], then you will see the lamp[76] is off.



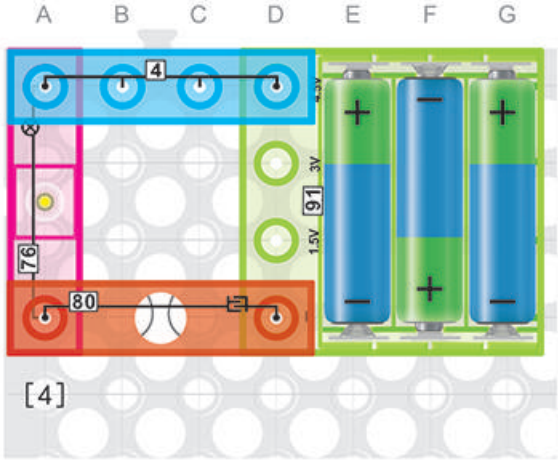
2.Magnet Controls the Circuit

Reed switch[83] is one kind of switch device. In this circuit, magnet[7] will decide whether the lamp is on or off. Because the magnet[7] will attract the reeds to turn on the circuit. Move away the magnet[7], the reeds will be released to both sides. Firstly let's build the circuit step by step, try to move the magnet[7] towards the reed switch[83]. wow! Now you can see the lamp[76] is on. Move away the magnet[7], then the lamp[76] will be off.



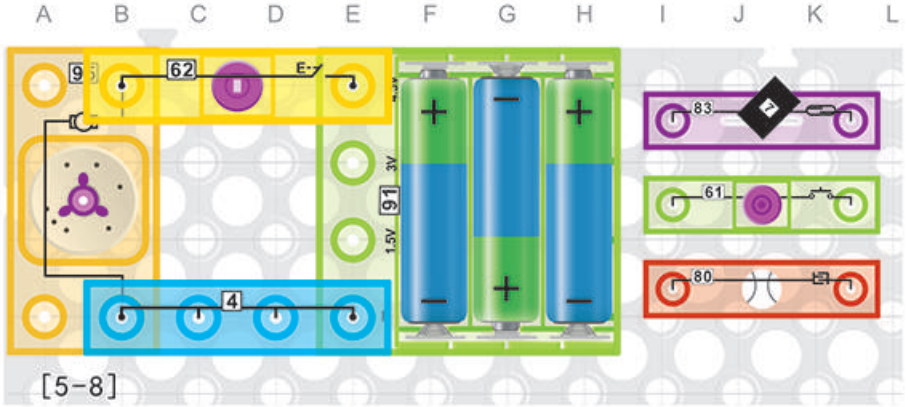
3.Press Switch Controls the Lamp

Press switch[61] is also one kind of switch device that you need to press or move up and down in order to turn the lamp[76] on and off. Let's build the circuit step by step. Now can you see the lamp [76] is on? Absolutely not. Try to press the press switch[61], see, what's happening? It's (the lamp [76]) on now . Release your hand, it will be off.



4.Touch Piece Controls the Lamp

Touch Piece[80] is one switch device that it can work when it is touched by conductive things. Follow the diagram, build the circuit step by step. Can you see the lamp[76] is tuned on? Not yet, right? But if you touch it (Touch Piece [80]) with conductive things, such as sheetmetal, keys or anything else, you will see the lamp[76] is on. If you move away the conductive things, the lamp[76] will be off.



5.Build the Motor Circuit

Firstly build the circuit step by step, connect the switch[62], the motor[95] will start running. Disconnect the switch[62], the motor[95] will stop running. It's amazing! Have a try now!

6.Magnet Controls the Motor

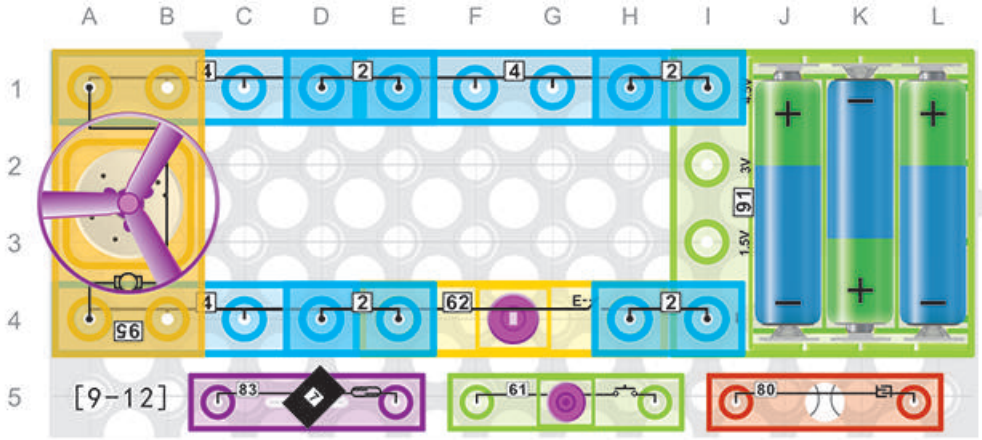
Replace the switch[62] with the reed switch[83], whenever the magnet[7] is moved near the reed switch[83], the motor[95] will start running. Move way the magnet[7], the motor[95] will stop running.

7.Press Switch Controls the Motor

Replace the switch[62] with the press switch[61], then press the press switch [61], now you can see the motor[95] is running, right? Release the press switch [61], the motor[95] will be stopped.

8.Touch Pieces Controls the Motor

Replace the switch[62] with the touch piece[80], whenever the touch pieces[80] is touched by any conductive sheetmetal, the motor[95] will start running. Move away the touch pieces[80], the motor[95] will stop running.



9.Build the Fan Circuit

Build the circuit step by step, connect the switch[62], the fan blade[60] will start running. Wow! So cool !

10.Magnet Controls the Fan

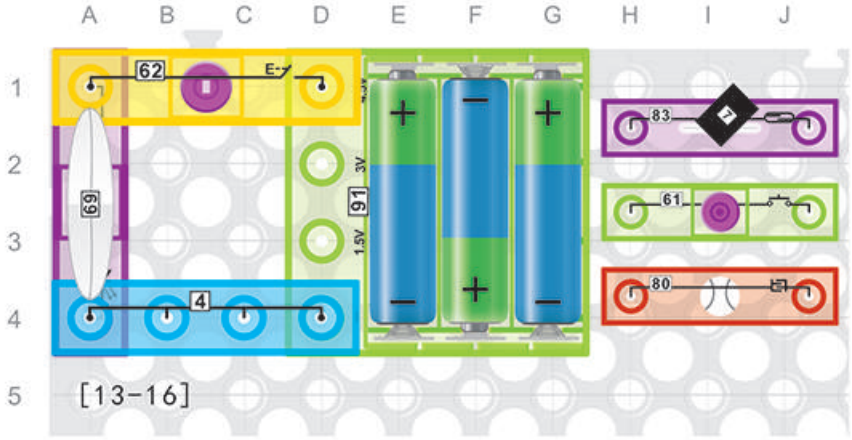
Replace the switch[62] with the reed switch[83], then try to move the magnet[7] towards the reed switch[83], see, what's happening? Now the fan blade[60] is running. Move away the magnet[7], the fan blade[60] will stop.

11.Press Switch Controls the Fan

Replace the switch[62] with the press switch[61], then press it (press switch [61]), you will see the fan blade[60] will start running. Release the press switch[61], the fan blade[60] will stop.

12.Touch Pieces Controls the Fan

In the circuit, firstly replace the switch[62] with the touch pieces[80]. Whenever the touch pieces[80] is touched by any conductive sheetmetal. You will see the fan blade[60] start running.



13.Build the LED Circuit

LED[69] is a semiconductor that emits light when the current passes through it, it's full name is Light Emitting Diode. It costs little power consumption, but it can create for variety of colors, so it is widely use in all variety of indicator light. Follow the illustration, build the circuit , then press the switch[62], LED[69] will be turned on.

14.Magnet Controls the LED

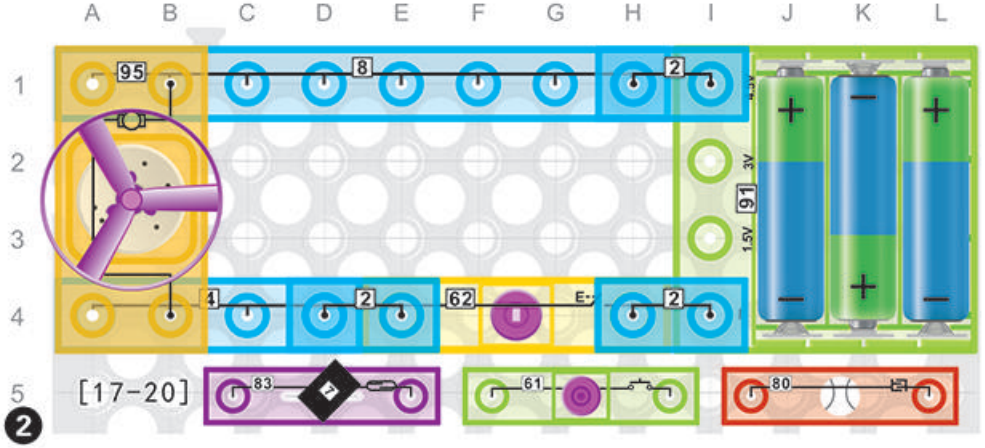
Replace the switch[62] with the reed switch[83], move the magnet[7] towards the reed switch [83], now you can see the LED[69] is on. Move away the magnet[7], LED[69] will be off.

15. Press Switch Controls the LED

Replace the switch[62] with the press switch[61], press it (press switch[61]), then you can see the LED[69] will be on. Release it (press switch[61]), the LED[69] will be off.

16.Touch Pieces Controls the LED

Replace the switch[62] with the touch pieces[80], whenever you use any conductive sheetmetal to touch the touch pieces[80], the LED[69] will be on. Fantastic!



17.Build the Flying Saucer Circuit (Caution: Never let it fly to faces!)

Build the circuit step by step, press the switch[62], press it (switch[62]) again when you see the motor[95] is running faster and faster, then you will see the saucer is flying.

18.Magnet Controls the Flying Saucer

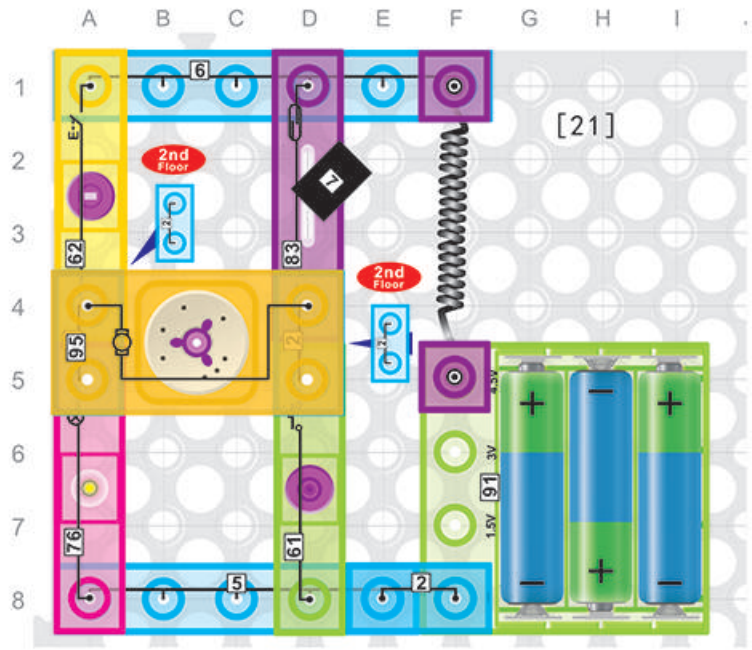
In this circuit, you are going to see how the magnet controls the flying saucers. Firstly, replace the switch[62] with the reed switch[83], touch the reed switch[83] with magnet [7], then the motor[95] will start running. Move away the magnet[7], the saucer will start flying. So much fun,right?

19.Press Switch Controls the Flying Saucer

Replace the switch[62] with the press switch[61], keep press tightly on the press switch [61], you will see the motor[95] start running. When you see the motor is running faster and faster, you can release the press switch[61], then the saucer will start flying.

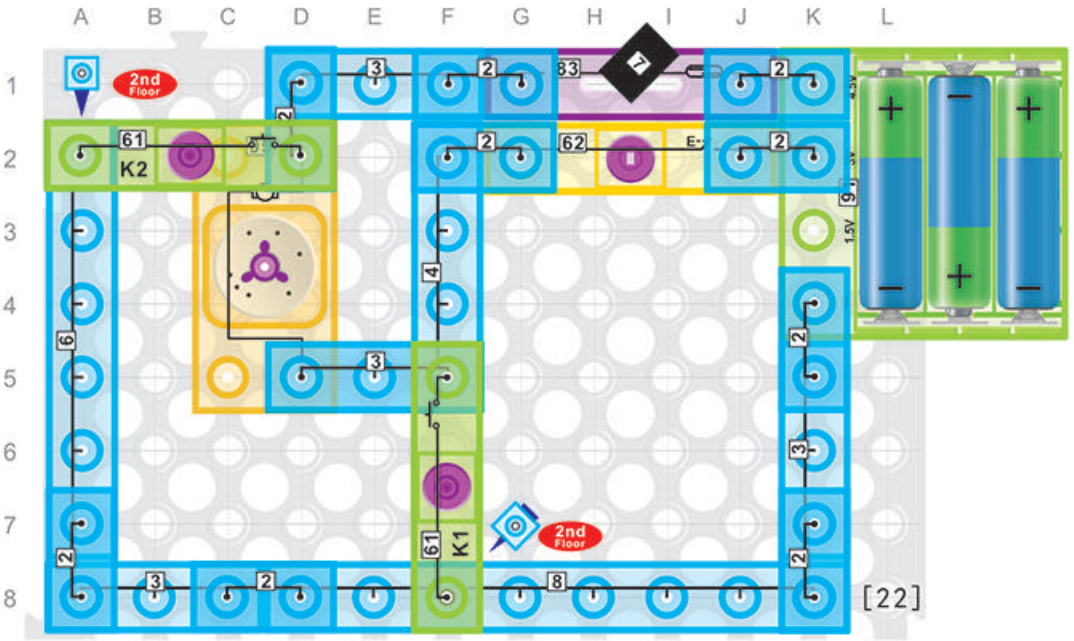
20.Touch Piece Controls the Flying Saucer

Replace the switch[62] with the touch pieces[80], whenever you use conductive sheetmetal to touch the touch pieces[80], the motor[95] will start running. Move the sheetmetal when you see the motor[95] is running fast, then the saucer will start flying.



21. Magnet Controls the Motor Direction (1)

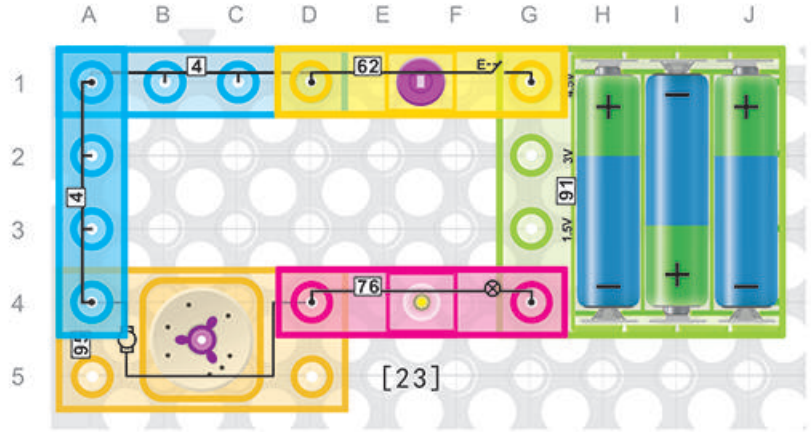
Build the circuit step by step, move magnet[7] towards reed switch[83], the motor[95] will run in reversely, now you can see the lamp[76] is on. If you move away the magnet[7], press the switch[62], the lamp[76] will be on too. Press the press switch [61], then the motor[95] will run in clockwise.



22. Magnet Controls the Motor Direction (2)

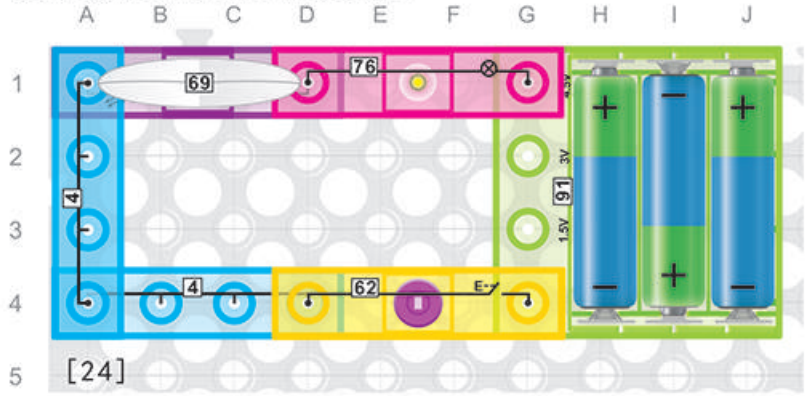
At first, build the circuit, touch the reed switch[83] with magnet[7], then press the press switch K1[61], now you can see the motor[95] is running in clockwise. Move away the magnet[7], press the switch[62], then press switch K2[61], now you can see the motor [95] is running in reversely.

Note: In this circuit, the reed switch and the press switch mustn't be connected at the same time, or it will be short.



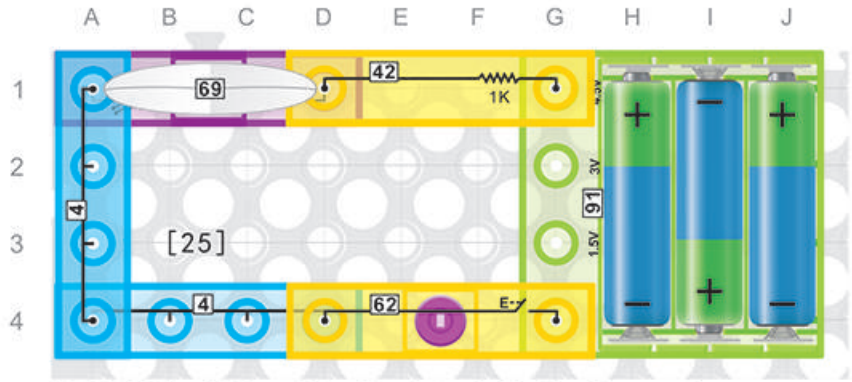
23.Build the Lamp and the Motor in Series Connection

Build the circuit in series connection, then press the switch[62], can you see the motor[95] is running? Yes, it is. Also you can see the lamp[76] is on. Disconnect the switch[62], the motor[95] and the lamp [76] will be off at the same time.



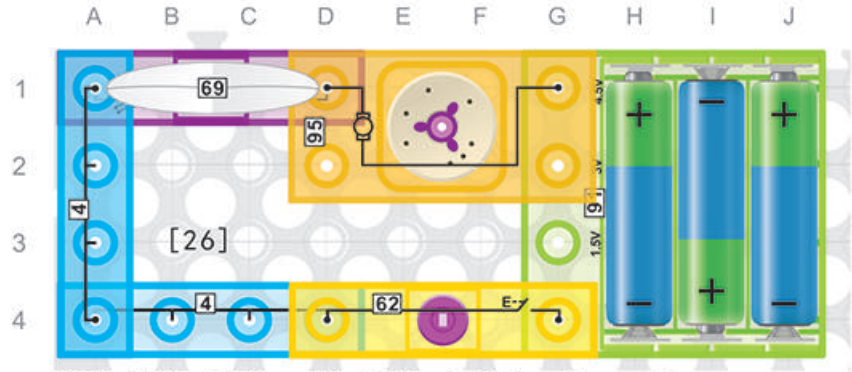
24.Build the Lamp and the LED in Series Connection

Follow the illustration step by step, connect the switch[62], then the LED[69] will be on, but the lamp[76] is still off. Why? Because the current that passed through the LED[69] is too low to light up the lamp[76], and it(lamp[76]) need more current than the LED[69].



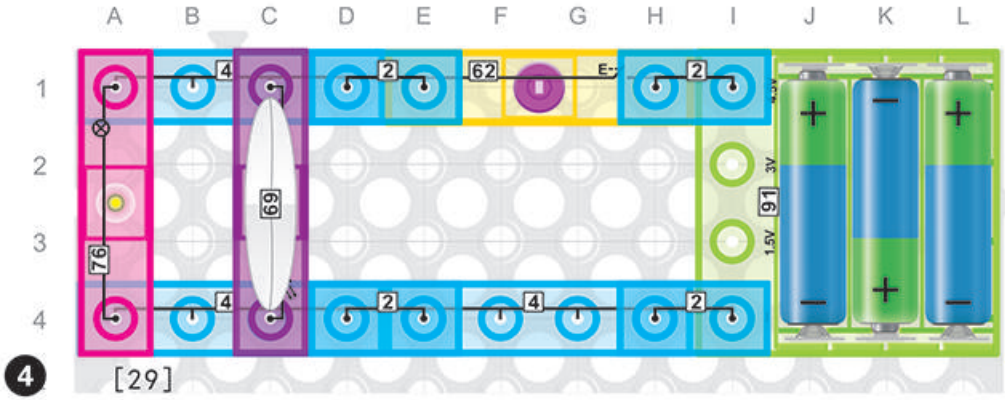
25.Build the LED and the Resistor in Series Connection

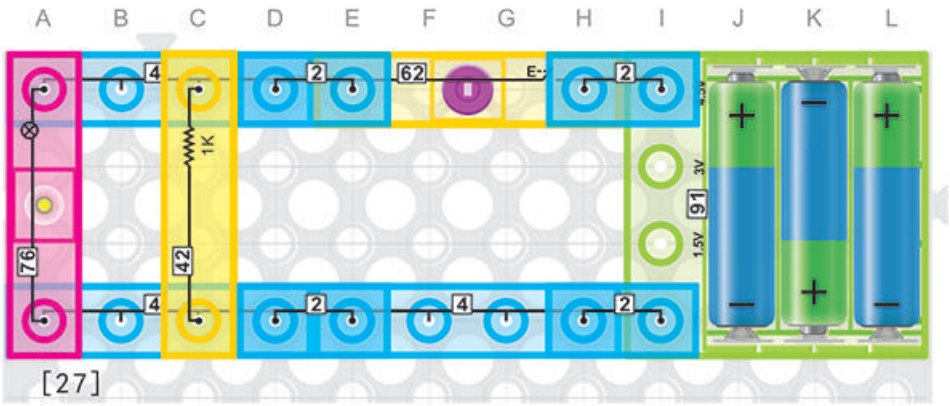
In this circuit, when you connect the switch[62], you can see the LED [69] is turned on. Disconnect the switch[62], the LED[69] will be off.



26. Build the LED and the Motor in Series Connection

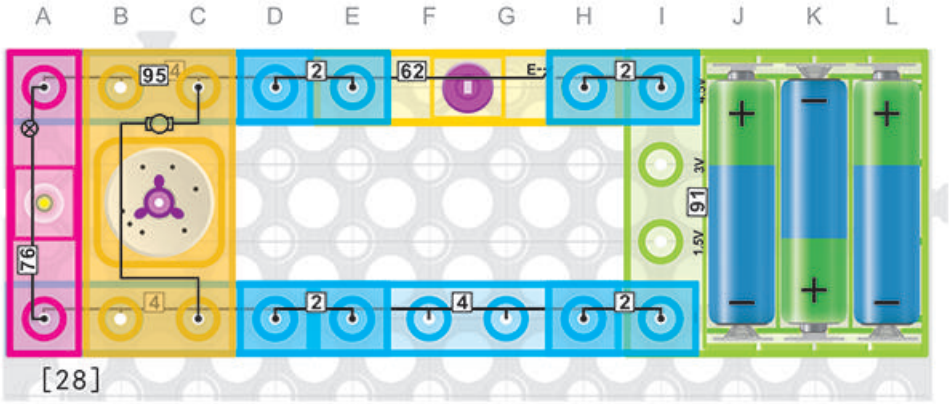
This is another series circuit. Connect the switch[62], you can see that the LED[69] is turned on. Also you maybe confused to see the motor[95] is still off. Right? Because the LED[69] just needs little consumption while the motor[95] needs more. The current that passed though the LED [69] is too low to start the motor[95].





27. Build the Lamp and the Resistor in Parallel Connection

Build the circuit, connect the switch[62], the lamp[76] will be on. Disconnect the switch[62], the lamp[76] will be off.

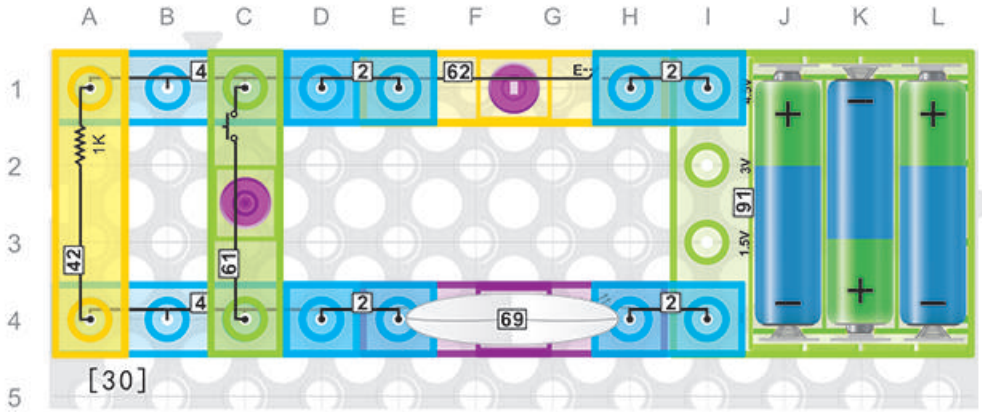


28.Build the Lamp and the Motor in Parallel Connection

This is another parallel circuit, when the switch[62] is connected, the lamp[76] will be on, also the motor[95] will start working. Disconnect the switch[62], the lamp[76] and the motor[95] will be off at the same time.

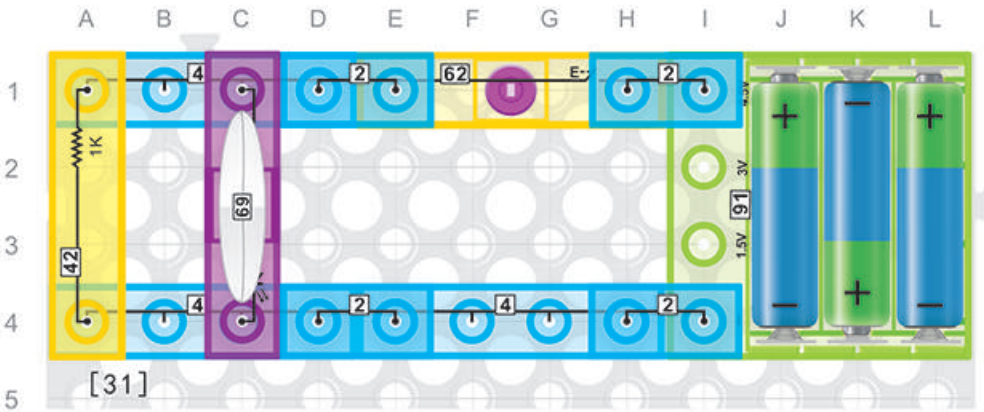
29.Build the Lamp and the LED in Parallel Connection

Build the circuit, turn on the switch[62], you will see the lamp[76] and the LED[69] is on at the same time. Disconnect the switch[62], the lamp[76] and the LED[69] will be off.



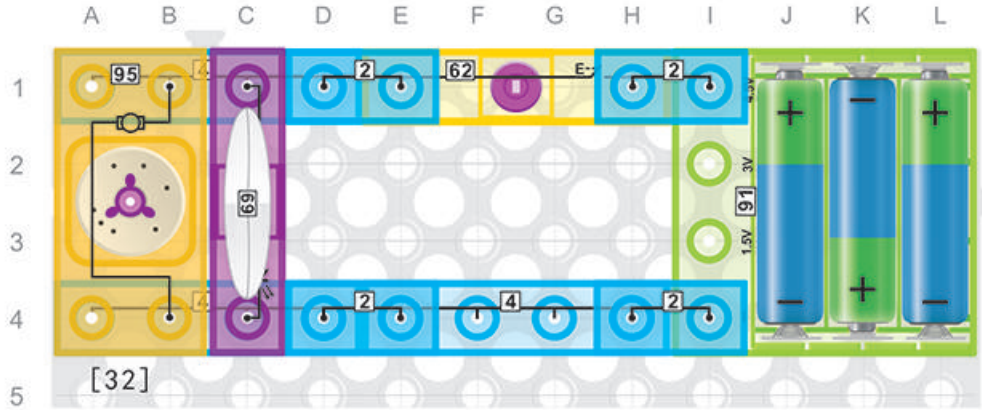
30.What is resistor? How does it work?

Resistor can protect the component in an electrical circuit, it has resistance and it is used to control the flow of electric current. Build the circuit, connect the switch[62], you will see the LED[69] is, but the light is dim. Why? Because the flow of LED[69] is limited by the resistor. If you press the press switch [61], the LED[69] will be brighter,now the current can flow directly to the LED. The smaller of the resistor, the brighter on the LED[69] will be.



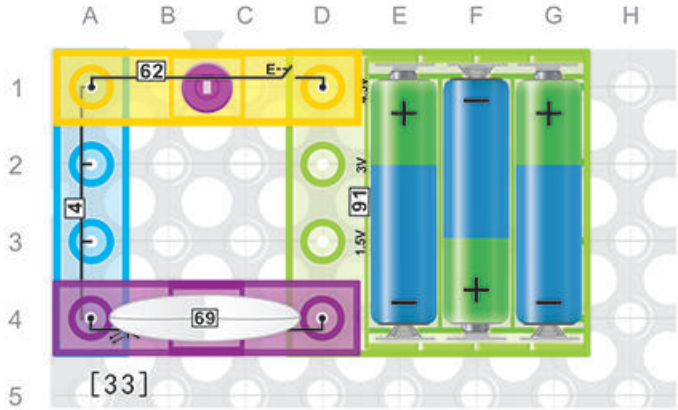
31. Build the LED and the Resistor in Parallel Connection

Build the circuit, connect the switch[62], you will see the LED [69] is on. Disconnect the switch[62], then the LED[69] will be off.



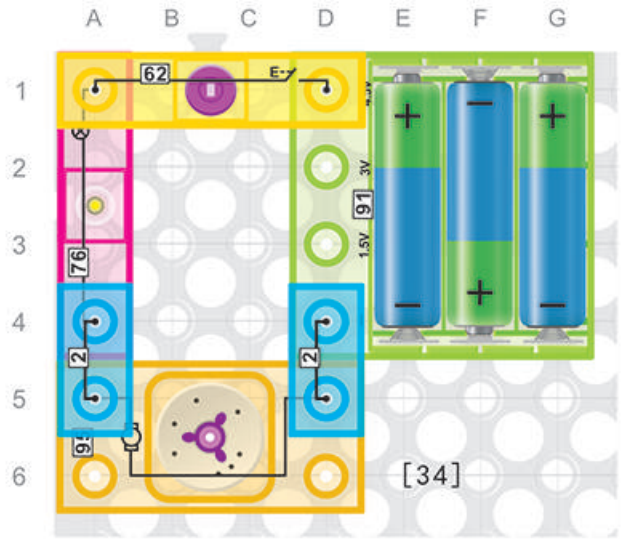
32.Build the LED and Motor in Parallel Connection

In this parallel circuit, LED[69] and the motor[95] will be on and off at the same time, if you connect the switch[62], they will be turned on. Disconnect the switch [62], they will be off.



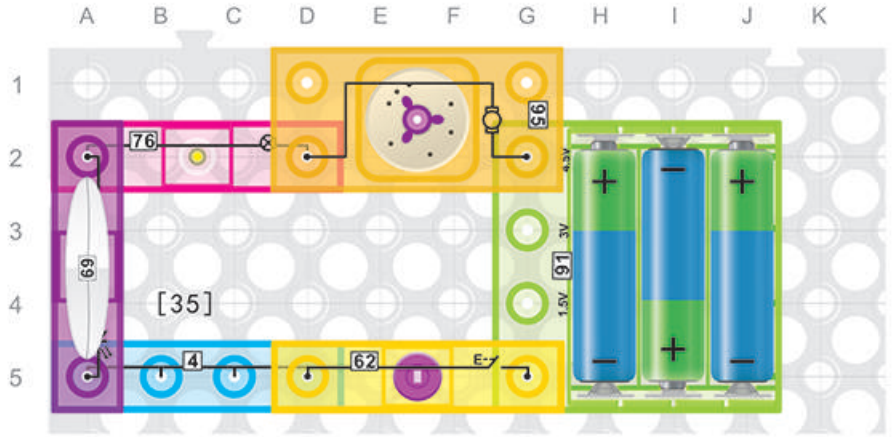
33.One-way Electric Conductivity of the LED

Follow the illustration step by step. You maybe confused that the LED[69] is still off after you connecting the switch[62], right? Because the LED[69] is similar with the other one-way electric conductivity of diode. Now try to connect the anode of diode with the switch, see, the LED[69] is on !



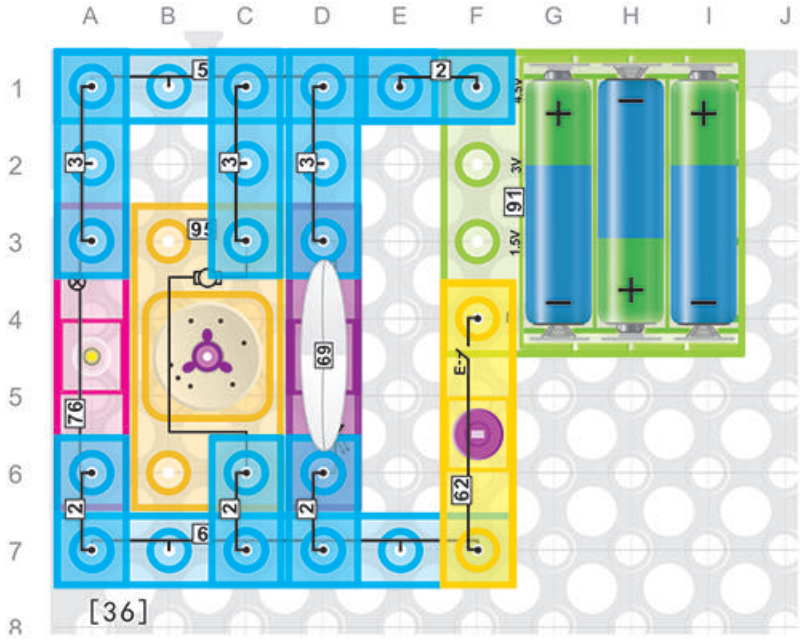
34.Batteries in the Series Circuit

Build the circuit, load your batteries in series connection, now the total voltage in this circuit is 4.5V. If you connect the switch[62], you will see the motor[95] start running, also the lamp[76] is on.



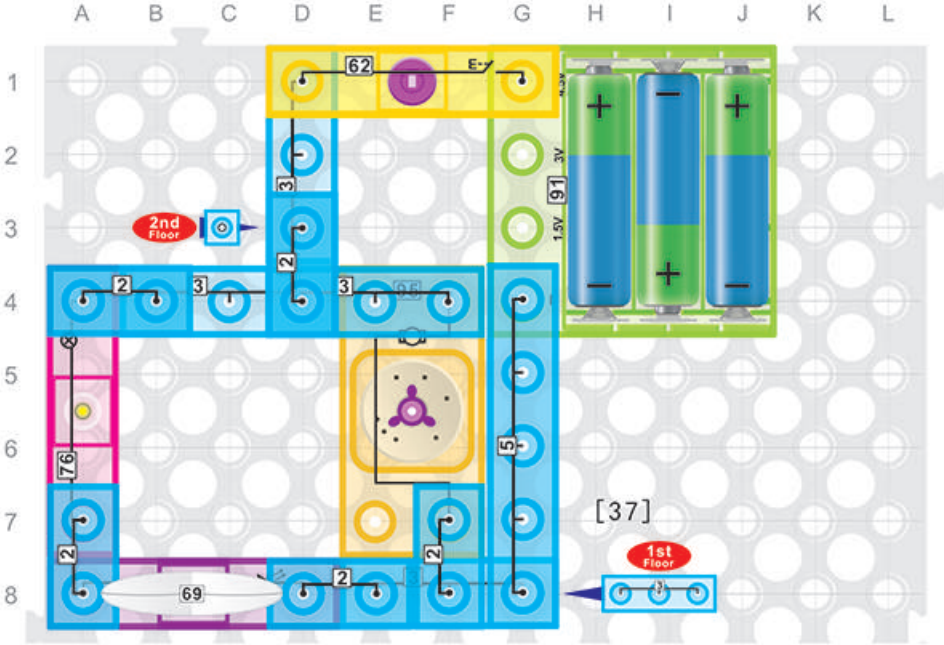
35.Build the Lamp, LED and Motor in Series Connection (1)

In the series circuit, when you connect the switch[62], you can see only the LED[69] is on, while the lamp[76] and the motor[95] is not, because the flow of the current is too low to let them work.



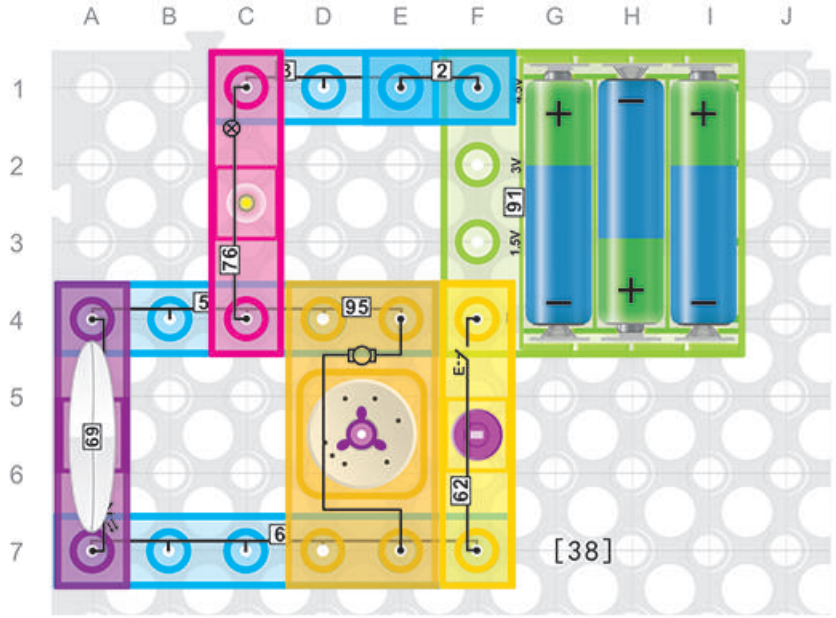
36.Build the Lamp, LED and Motor in Series Connection (2)

Build the circuit step by step, connect the switch[62], you can see the LED[69] and the lamp[76] is turned on at the same time, also the motor [95] is running. Now we have one question, If the LED[69] is broken, what will happen to the lamp[76] and the motor[95]? Can they keep working? Why?



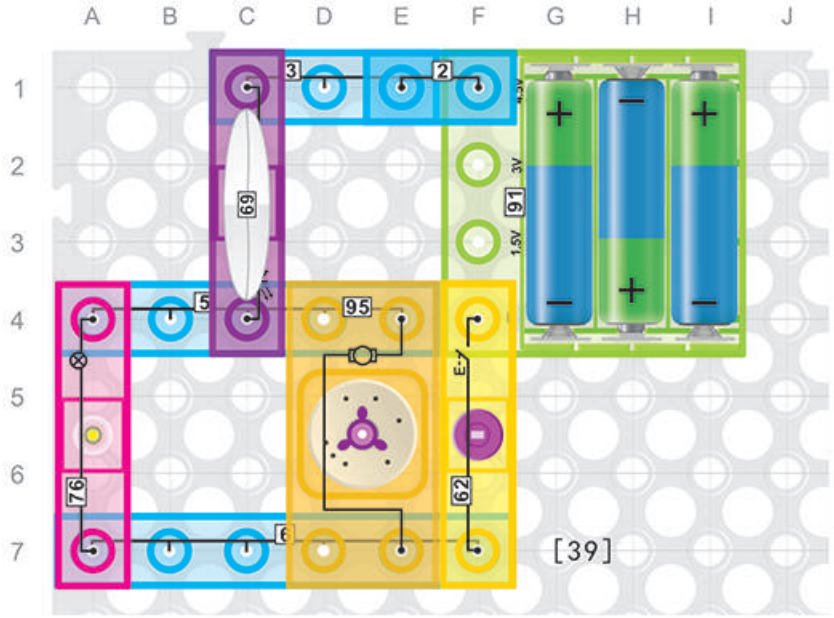
37.Build the Lamp, LED, and Motor in Series and Parallel Connection (1)

This is series and parallel circuit, firstly you should connect the lamp[76] with the LED[69] in series circuit, then connect them with the motor[95] in parallel circuit. Connect the switch[62], you can see the motor[95] and the LED[69] starts working, but the lamp[76] is not. Why? Even though the lamp[76] and the LED[69] is in series connection, the flow of the current on the lamp[76] is too low to let it work.



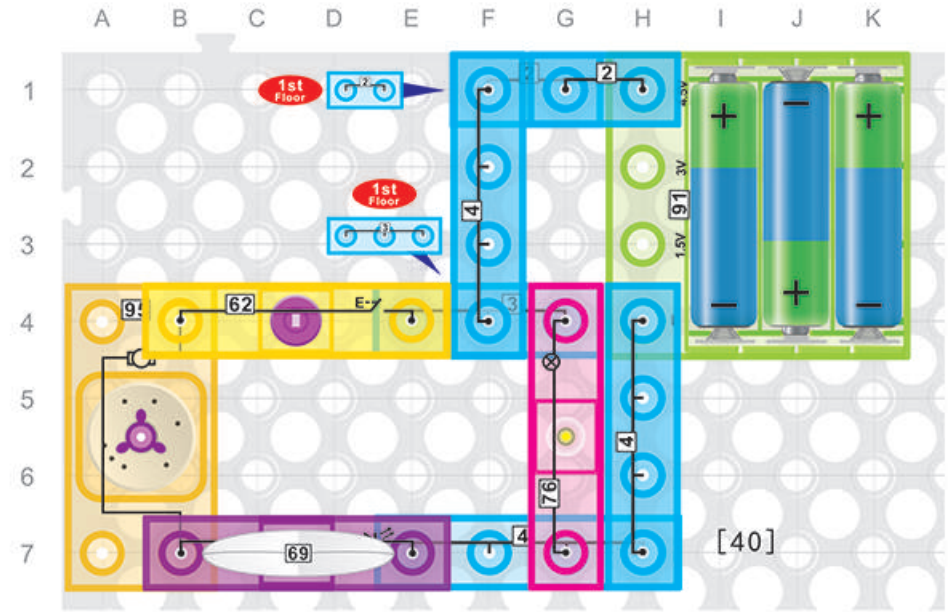
38. Build the Lamp, LED, and Motor in Series and Parallel Connection (2)

Build the circuit step by step, see, what's happening? The motor[95] is running, and the lamp[76] is on, right? But not the LED[69], Why? Let's think about it!



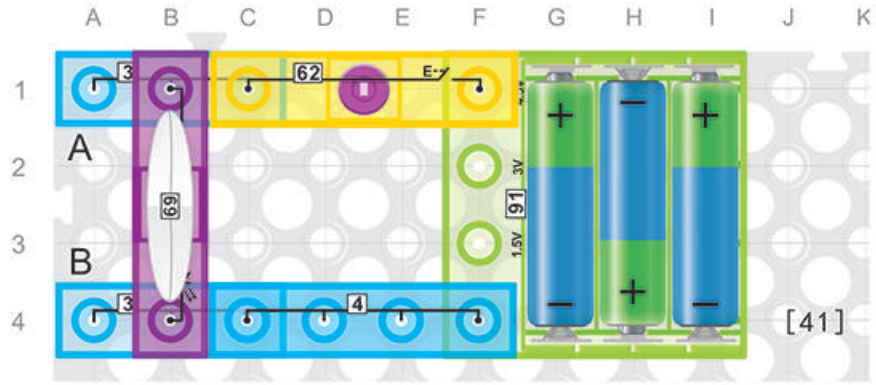
39. Build the Lamp, LED, and Motor in Series and Parallel Connection (3)

In this circuit, press the switch[62], you can see only LED[69] is on, but not the lamp[76] and the motor[95].



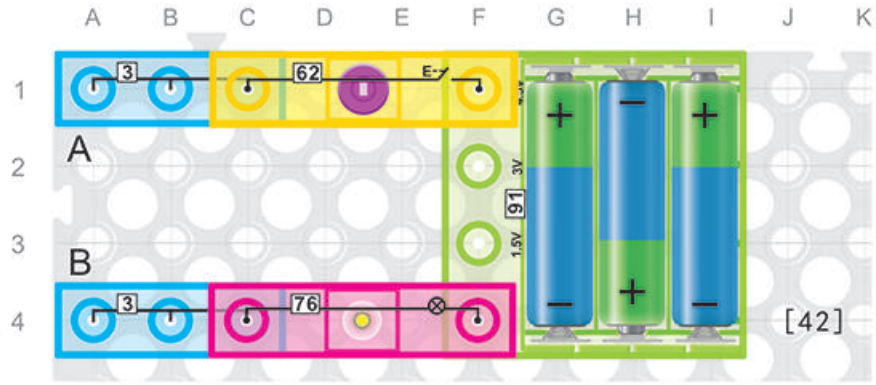
40. Build the Lamp, LED, and Motor in Series and Parallel Connection (4)

Build the circuit,you can see the lamp[76] is on, but not the LED[69] and the motor[95]. If you connect the switch[62], the LED[69] will be on, and the motor[95] is still off. Let's think about it. In the circuit, LED[69] and the motor[95] are built in series connection, why does the LED[69] can work, but the motor[95] cannot?



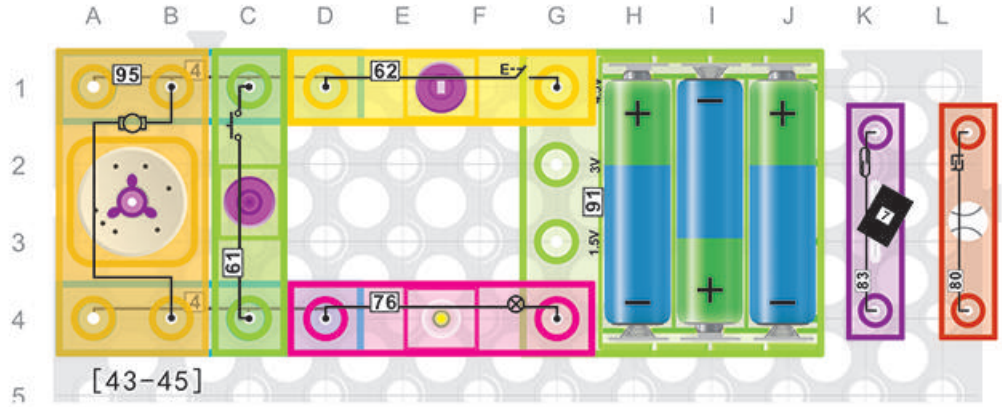
41.Power Supply Indicator

Firstly connect the switch[62], then install the LED[69] in the right polarity (A for +, B for -). In this circuit, LED[69] is used for power supply indicator. When you see the LED[69] is bright, it means the power of the batteries is sufficient, otherwise is week. The LED[69] will be off until the power is too low to let it work.



42.Conductor Testing

This circuit is very interesting, because we can identify which things in our daily life are current-conducting, and which things are not. Connect the switch[62], then install the test material in the point A and Point B, if you can see the lamp[76] is on, we can conclude that this material is conductor, such as knife, keys and so on. If the lamp[76] is still off, we can know the material is insulator, such as plastic, wood and etc.



43.Press Switch Controls the Brightness of Lamp

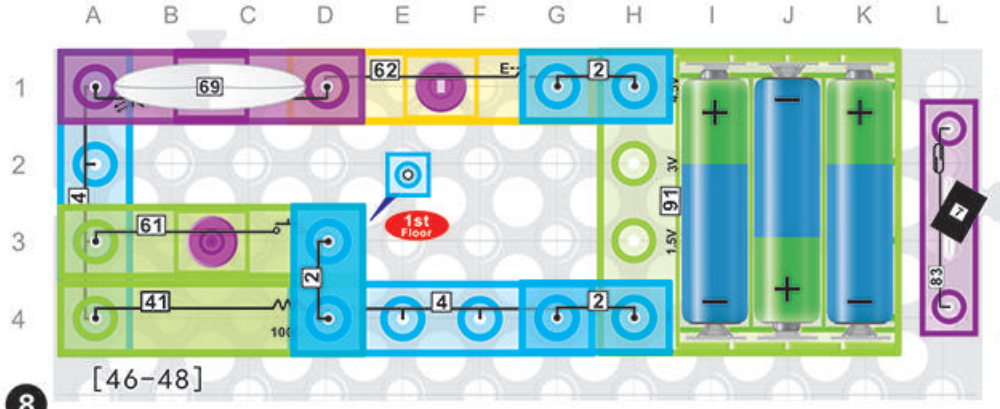
Build the circuit, connect the switch[62], you can see the lamp[76] and the motor [95] start working at the same time. But if you press the press switch[61], the motor [95] will stop, and the lamp[76] will be brighter.

44.Touch Piece Controls the Brightness of Lamp

Replace the press switch[61] with the touch piece[80], connect the switch[62], then the lamp[76] and the motor[95] will start working at the same time. If you touch the touch piece[80] with sheetmetal, the lamp[76] will be brighter.

45.Magnet Controls the Brightness of Lamp

Replace the press switch[61] with the reed switch[83], connect the switch[62], then the lamp[76] and the motor[95] will start working at the same time. If you put magnet [7] near the reed switch[83], the lamp[76] will be brighter.



46.Press Switch Controls the Brightness of LED

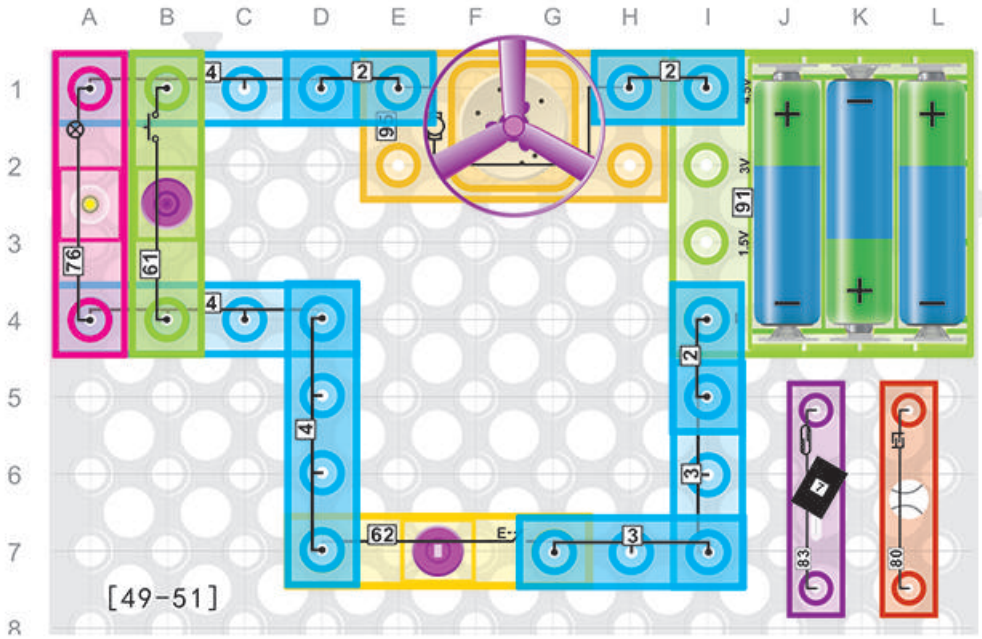
Build the circuit at first, connect the switch[62], you can see LED[69] is on. Press the press switch[61], LED[69] will be extremely bright. Do you know why?

47.Touch Piece Controls the Brightness of LED

Replace the press switch[61] with the touch piece[80], connect the switch [62], then LED[69] will be on. If you touch the touch piece[80] with any sheetmetal, you can see the LED[69] is brighter.

48.Magnet Controls the Brightness of LED

Replace the press switch[61] with the reed switch[83], connect the switch [62], you can see LED[69] is on. If you put magnet[7] near the reed switch [83], LED[69] will be brighter.



49.Press Switch Controls the Speed of Fan

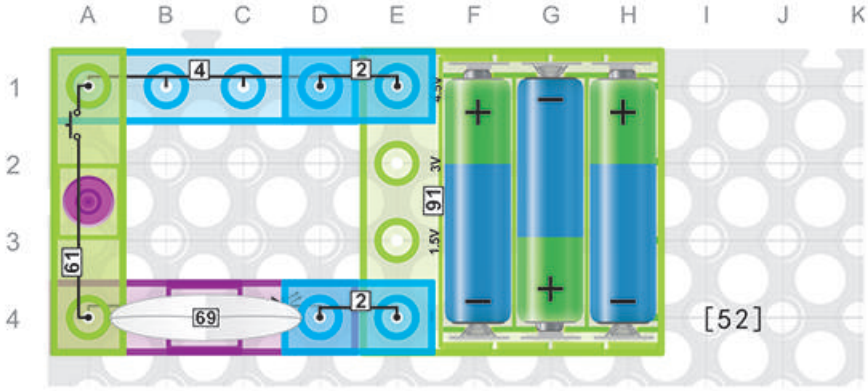
Build the circuit, connect the switch[62], the fan will start running, and lamp[76] will be on. If you press the press switch[61], you will see the lamp[76] is off while the fan is running faster.

50. Magnet Controls the Speed of Fan

Replace the press switch[61] with the reed switch[83], connect the switch[62], you can see the lamp[76] is on, also the fan is running. If you put magnet[7] near the reed switch[83], the fan will run faster.

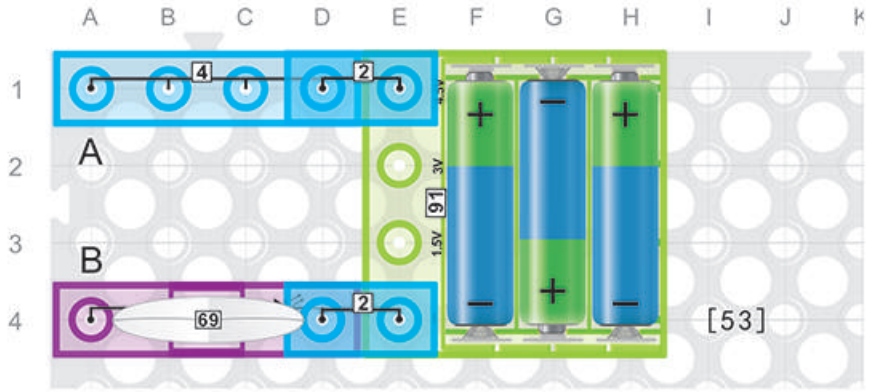
51.Touch Piece Controls the Speed of Fan

Replace the press switch[61] with touch piece[80], connect the switch[62], the lamp[76] and the fan will start working at the same time. If any sheetmetal touch the touch piece[80], the fan will run faster.



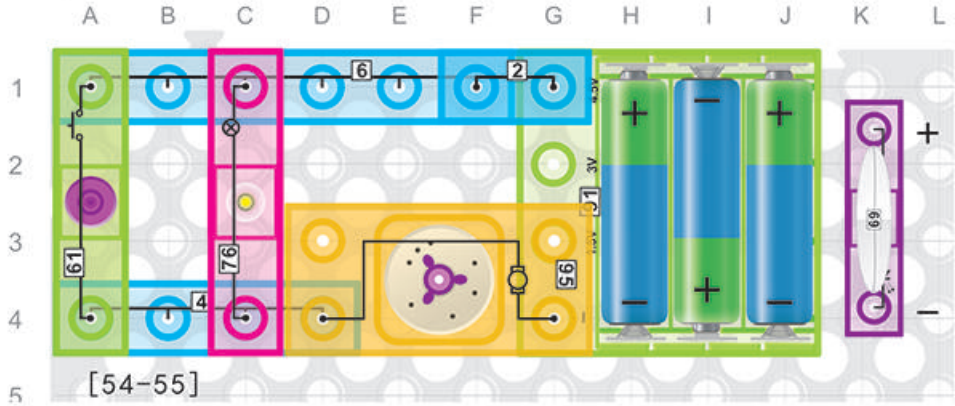
52.Telegraph Learning Circuit

Do you know how telegraph works? Build the circuit, press the press switch [61] in some certain pace, release the press switch[61], you can see LED[69] is flashing. This circuit can be used for telegraph learning.



53.Conductivity Test of the Wire

Build the circuit, connect the wire with point A and B, if you see the LED[69] is on, that means the wire is conductive, otherwise, it's short. This conductivity test can be used in testing for hundreds of meters of wire. It's unbelievable, right?

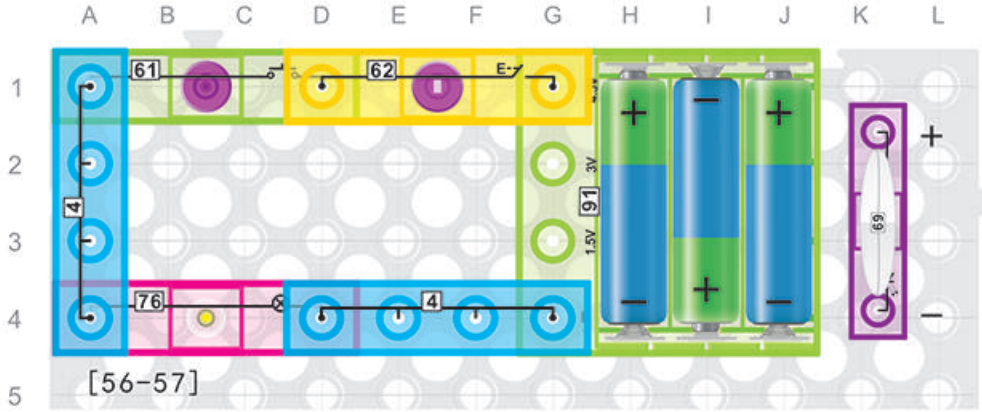


54.Control the lamp in Non-Gate Circuit

Build the circuit, what's happening can you see now? Yes, the motor[95] and the lamp[76] are working at the same time. If you press the press switch[61], you can see the lamp[76] is off. This is called Non-Gate Circuit. Got it?

55.Control the LED in Non-Gate Circuit

Replace the lamp[76] with LED[69], it (LED[69]) will be on, but the motor[95] cannot. Press the press switch[61], then the LED[69] will be off, and the motor [95] start running.

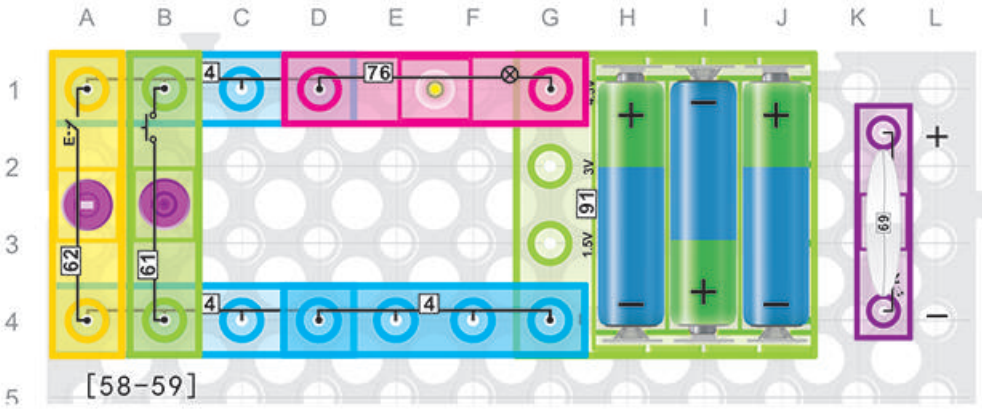


56.Control the lamp in AND-Gate Circuit

Build the circuit, connect the switch[62], can you see the lamp[76] is on? Not yet, right? Now press the press switch[61], the lamp[76] is on now. This is called AND-Gate Circuit.If you want to light up the lamp[76] in the AND-Gate Circuit, you should connect all the switch.

57.Control the LED in AND-Gate Circuit

Replace the lamp[76] with LED[69] in the upper circuit.

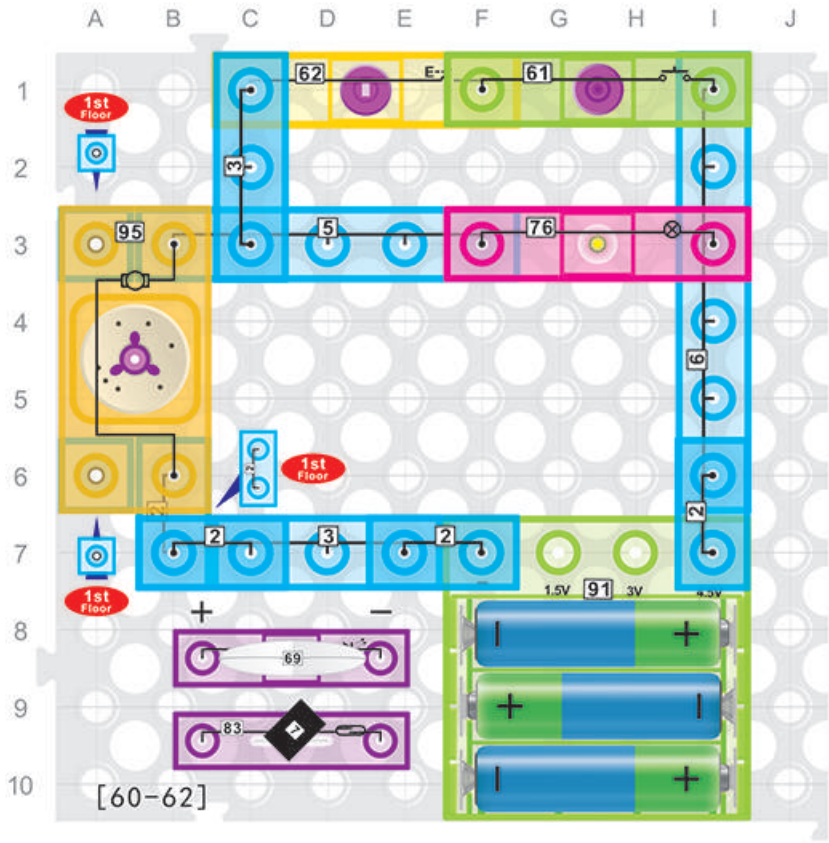


58.Control the Lamp in OR-Circuit

Build the circuit,you will see the lamp[76] is still off. Try to connect the switch[62], the lamp[76] will be on. If you disconnect the switch[62], then press the press switch[61], the lamp[76] will on again. This is OR-Circuit.

58.Control the LED in OR-Circuit

Replace the lamp[76] with the LED[69] in the upper circuit.



60.Control the Lamp in NAND Gate Circuit

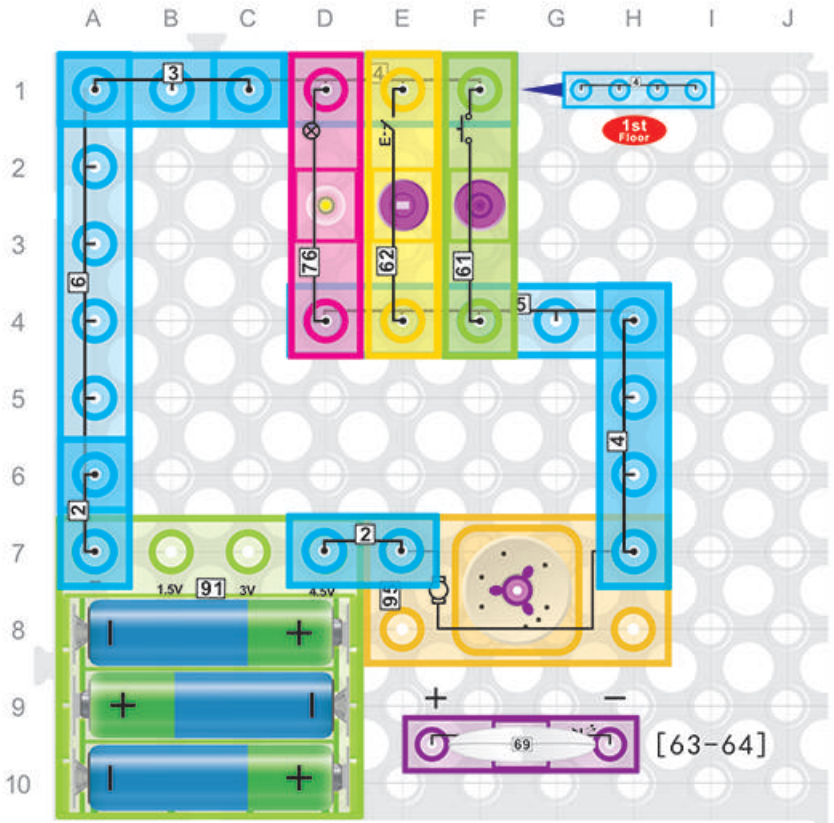
Build the circuit, you will see the motor[95] is running, and the lamp[76] is on too. How to turn off the lamp[76]? Try to connect the switch[62], the lamp is still on. But if you press the press switch[61], it (lamp[76]) will be off. In this circuit, if you want to turn off the lamp[76], you should connect all the switch, this is called NAND Gate Circuit.

61.Magnet Controls the lamp in NAND Gate Circuit

Replace the switch[62] with the reed switch[83], you can see the motor [95] and the lamp[76] start working at the same time. Connect the press switch[61] and the reed switch[83], the lamp[76] will be off, but the motor [95] will run faster.

62.Control the LED in NAND Gate Circuit

Replace the lamp[76] with the LED[69], you will see the LED[69] is on, but the motor[95] is still off. If you connect the switch[62], then press the press switch[61], LED[69] will be off, and the motor[95] start running.



63.Control the lamp in NOR-Gate Circuit

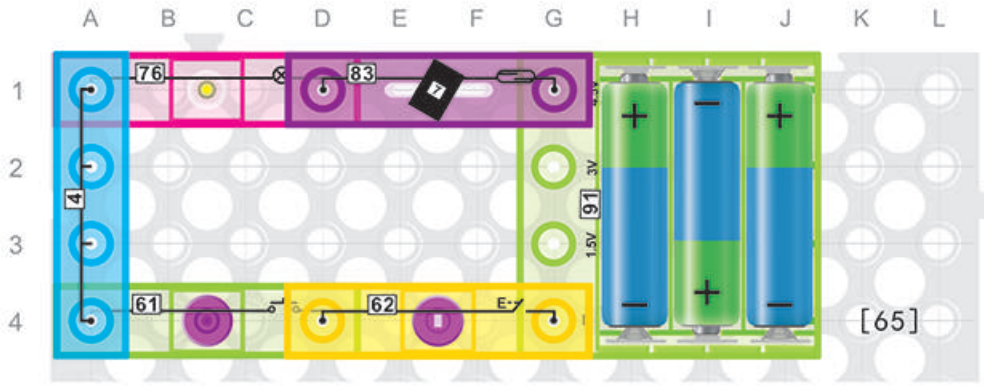
Build the circuit, you will see the motor[95] and the lamp[76] start working at the same time. Do you know how to turn off the lamp[76]? If you press the press switch[61] or connect the switch[62], the lamp [76] will be turned off, and the motor[95] will start running.

64.Control the LED in NOR Gate Circuit

Replace the lamp[76] with the LED[69], you will see the LED[69] is on, but the motor[95] is still off. If you connect the switch[62] or press the press switch[61], the LED[69] will be off, and the motor[95] will start running.

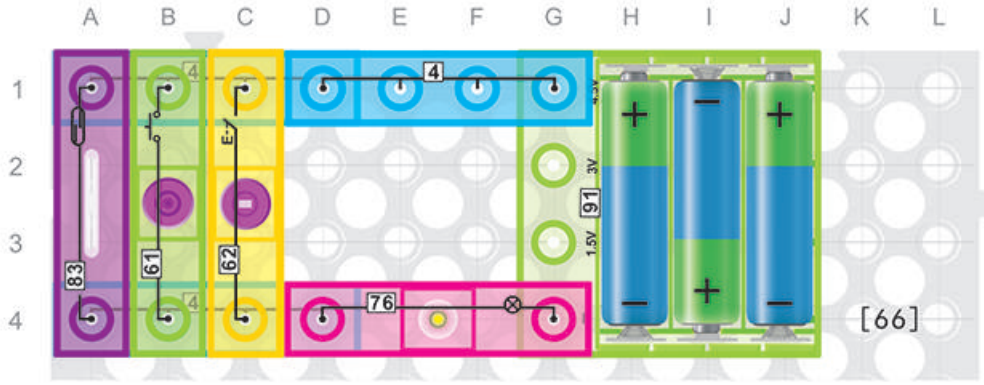
67.Three Series and Parallel Switches Control One Lamp (1)

In this circuit, if you connect the switch[62], you cannot see anything happens. But if you press the press switch[61] or move magnet[7] near the reed switch[83], you can the lamp[76] is on, because these three switches are connected in series and parallel circuit.



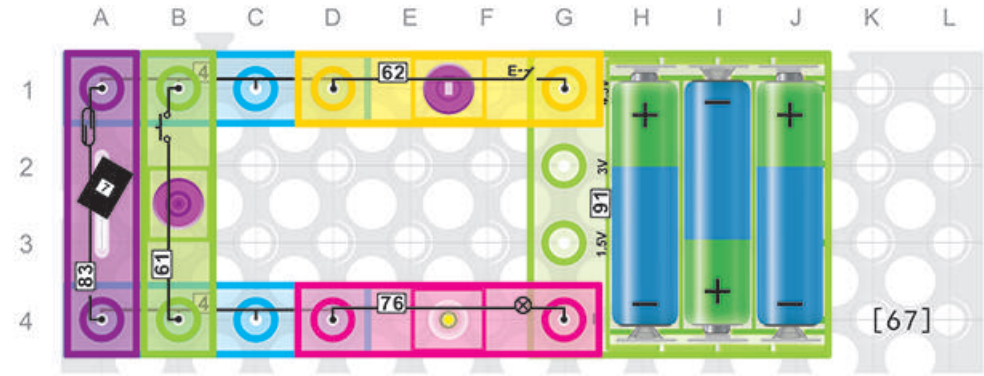
65.Three Series Switches Control One Lamp

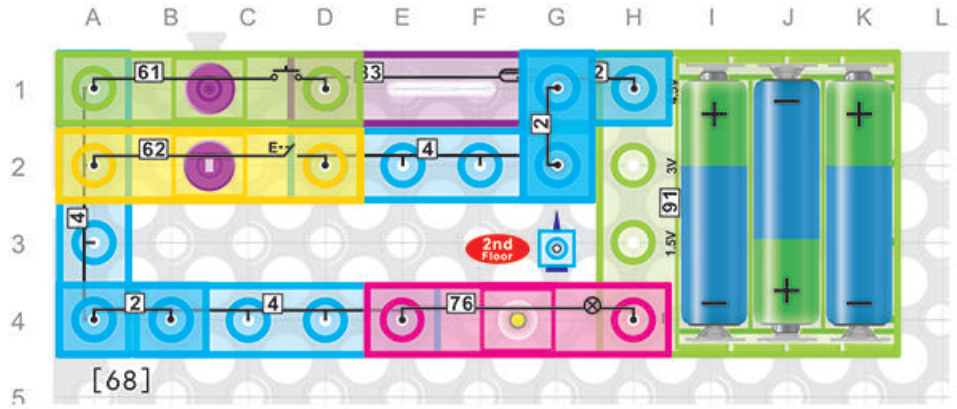
Build the circuit, connect the switch[62], can you see the lamp[76] is on? No. How about pressing the press switch[61]? Nothing happens. But if you move magnet[7] near the reed switch[83], the lamp[76] will be on. The most fantastic thing in this circuit is that you should turn on all the switch, then the lamp[76] can be lighten up.



66.Three Parallel Switches Control One Lamp

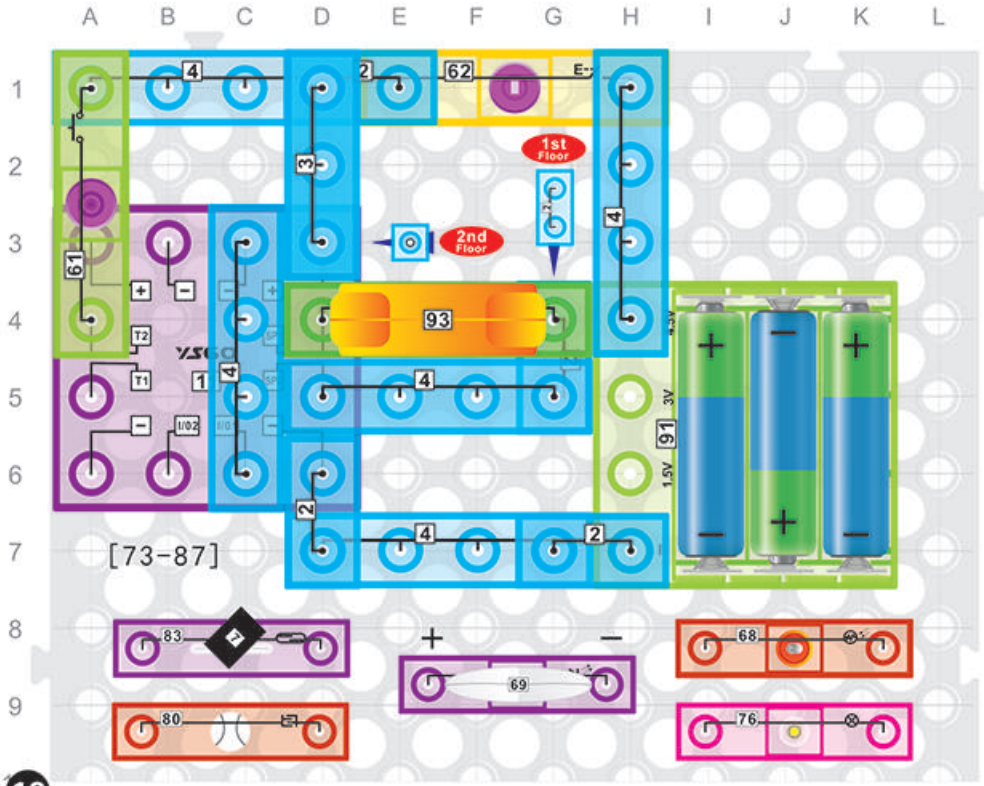
Build the circuit, connect any one of the switches, the lamp[76] will be turned on.

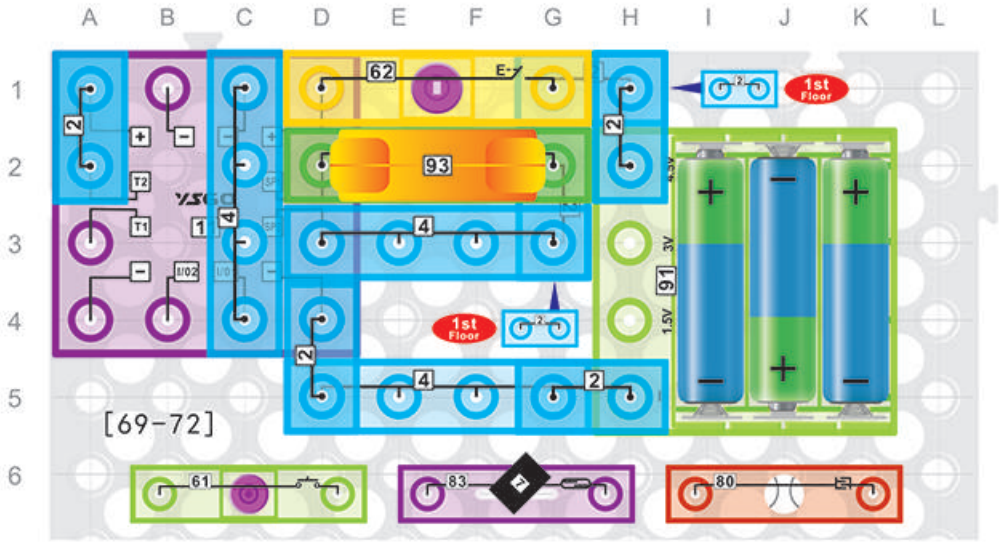




68.Three Series and Parallel Switches Control One Lamp (2)

Follow the instruction, firstly connect the press switch[61] with the reed switch [83] in series circuit, then connect with the switch[62] in parallel circuit. If you turn on the switch[62], you can see the lamp[76] is on. Disconnect the switch [62], then press the press switch[61], the lamp[76] will be off. Now if you move the magnet[7] near the reed switch[83], the lamp[76] will turned on again.





69.Switch Controls the Circuit with Birthday Songs

Build the circuit step by step, turn on the switch[62], you can hear the Birthday Songs from the speaker[93]. Turn off the switch[62], the songs will stop playing. This circuit can be used for kids' birthday party. So cool ,right?

70.Press Switch Controls the Circuit with Birthday Songs

Replace the switch[62] with the press switch[61], if you press tightly on the press switch[61], you can also hear the Birthday Songs from the speaker[93]. Release the press switch[61], the songs will stop playing.

71.Magnet Controls the Circuit with Birthday Songs

Replace the switch[62] with the reed switch[83], if you move magnet[7] near the reed switch[83], you can also hear the Birthday Songs from the speaker[93]. Move away the magnet[7], the songs will stop playing.

72.Touch Piece Controls the Circuit with Birthday Songs

Replace the switch[62] with the touch piece[80], if you use any sheetmetal to touch the touch piece[80], you can hear the Birthday Songs from the speaker[93]. Move away the magnet[7], the songs will stop playing.

73.Press Switch Controls the Musical Door Bell

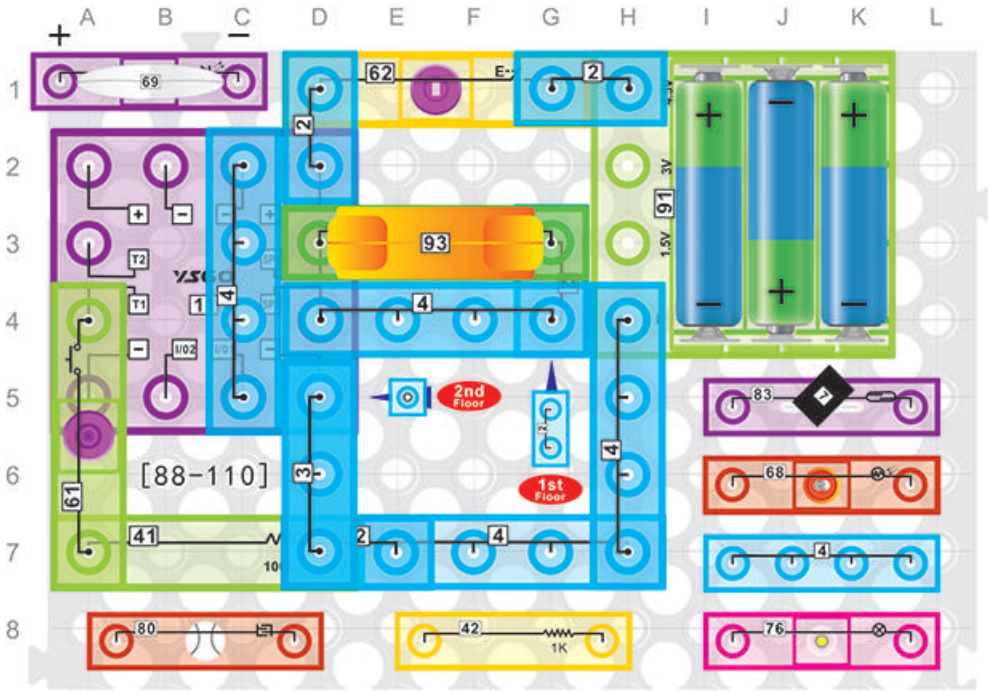
Build the circuit, connect the switch[62], you can hear some music from the speaker [93]. When you hear the music is stop, press the press switch[61] to replay it. If the press switch[61] is installed outdoors, the music can be heard indoors when the visitor press it (press switch[61]).Therefore, this circuit can be used as door bell.

74.Magnet Controls the Musical Door Bell

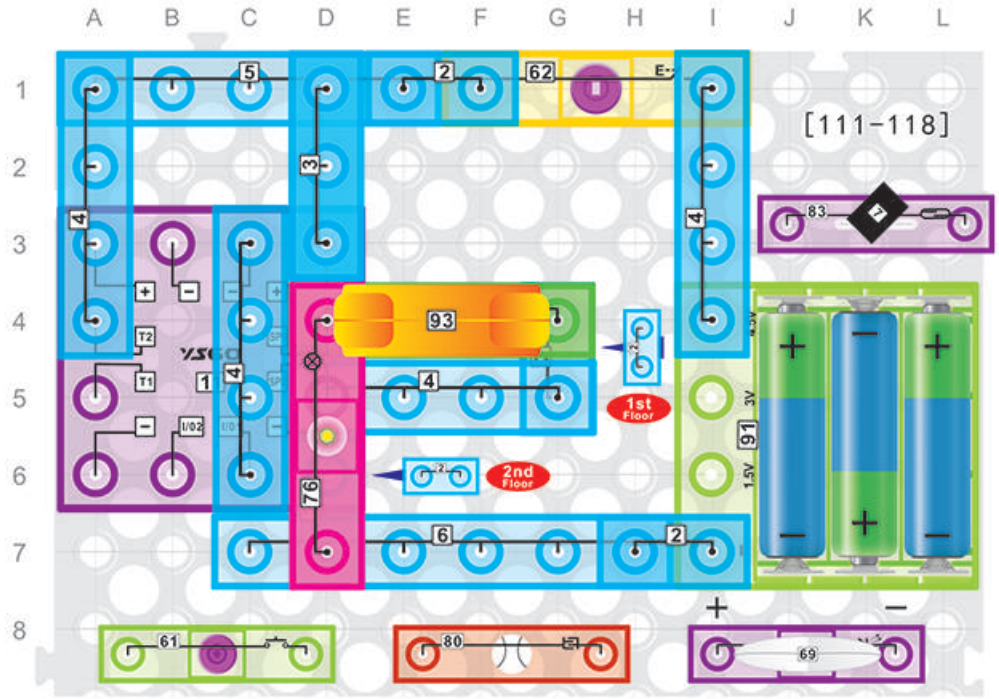
Replace the press switch[61] with the reed switch[83] in the upper circuit, turn on the switch[62]. If you hear the music stop playing, you can move the magnet[7] to touch the reed switch[83] to replay it.

75.Touch Piece Controls the Musical Door Bell
Replace the press switch[61] with touch piece[80], turn on the switch[62]. When the music stops playing, you can use any sheetmetal to touch the touch piece[80], then you can hear the music from the speaker[93] again.
76.Light Controls the Musical Door Bell
Replace the press switch[61] with photoresistance[68], then turn on the switch [62]. Wait until the music stops playing. If the photoresistance[68] met any light, the music will be played again. Cover the light, the music will be stop.
77.Water Controls the Musical Door Bell
Replace the press switch[61] with the photoresistance[68], then turn on the switch[62]. Drop a drop of water on the touch piece[80] when the music stops playing, the music will be replayed.
78.Press Switch Controls the Lamp
79.Magnet Controls he Lamp
80.Touch Piece Controls the Lamp
81.Light Controls the Lamp
82.Water Controls the Lamp
78-82, you just need to replace the speaker[93] with the lamp[76] in the circuit of 73-77.
83.Press Switch Controls the LED
84.Magnet Controls the LED
85.Touch Piece Controls the LED
86.Light Controls the LED
87.Water Controls the LED
83-87, you just need to replace the speaker[93] with the LED[69] in the circuit of 73-77.

88.Press Switch Controls the Play Mode of Birthday Song
Build the circuit, turn on the switch[62], you will hear Birthday Song from the speaker[93]. Press the press switch[61], the song will be repeated.
89.Magnet Controls the Play Mode of Birthday Song
Replace the press switch[61] with the reed switch[83], turn on the switch[62], then move magnet[7] near the reed switch[83], the birthday song will be repeated.
90.Touch Piece Controls the Play Mode of Birthday Song
Replace the press switch[61] with the touch switch[80], turn on the switch[62], touch the touch piece[80] with any sheetmetal, the birthday song will be repeated.
91.Wire Controls the Play Mode of Birthday Song
Replace the press switch[61] with the wire[4], turn on the switch[62], you will hear the Birthday Song from the speaker[93] again and again.
92.Resistor Controls the Play Mode of Birthday Song
Replace the press switch[61] with 1K resistor[42], turn on the switch[62], Birthday Song will be repeated from the speaker[93].
93.Photoresistance Controls the Play Mode of Birthday Song
Replace the press switch[61] with photoresistance[68], turn on the switch[62], Birthday Song will be repeated from the speaker[93].



94.Lamp Controls the Play Mode of Birthday Song
Replace the press switch[61] with lamp[76], turn on the switch[62], you will hear the Birthday Song from the speaker[93] again and again.
95.Water Controls the Play Mode of Birthday Song
Replace the press switch[61] with touch piece[80], drop a drop of water on the touch piece[80], if you turn on the switch[62], the Birthday Song will be repeated from the speaker[93].
96.Press Switch Controls the Intermission of Lamp
97.Magnet Controls the Intermission of Lamp
98.Touch Controls the Intermission of Lamp
99.Wire Controls the Intermission of Lamp
100.Resistor Controls the Intermission of Lamp
101.Photoresistance Controls the Intermission of Lamp
102.Water Controls the Intermission of Lamp
96-102, you just need to replace the speaker[93] with the lamp[76] in the circuit of 88-95.
103.Press Switch Controls the Intermission of Red LED
104.Magnet Controls the Intermission of Red LED
105.Touch Piece Controls the Intermission of Red LED
106.Wire Controls the Intermission of Red LED
107.Resistor Controls the Intermission of Red LED
108.Photoresistance Controls the Intermission of Red LED
109.Lamp Controls the Intermission of Red LED
110.Water Controls the Intermission of Red LED
103-110, just replace the speaker[95] with the LED[69] in the circuit of 88-95.
(Note: Please make sure you install the LED in the right polarity.)



111.Switch Controls the Play of Birthday Song and the Lamp
Build the circuit,turn on the switch[62], you will hear the Birthday Song from the speaker[93], and the lamp[76] will be on,but it's dim. Disconnect the switch[62], the song will be stopped, and the lamp[76] will be off.

112.Press Switch Controls the Play of Birthday Song and the Lamp
Replace the switch[62] with the press switch[61], press tightly on the press switch [61], you will hear the Birthday Song from the speaker[93], and the lamp[76] will be on at the same time.

113.Magnet Controls the Play of Birthday Song and the Lamp
Replace the switch[62] with the reed switch[83], move magnet[7] near the reed switch[83], you will hear the Birthday Song from the speaker[93], and the lamp[76] will be on at the same time.

114.Touch Piece Controls the Play of Birthday Song and the Lamp
Replace the switch[62] with the touch piece[80], touch the touch piece[80] with any sheetmetal, you will hear the Birthday Song from the speaker[93], and the lamp[76] will be on at the same time.

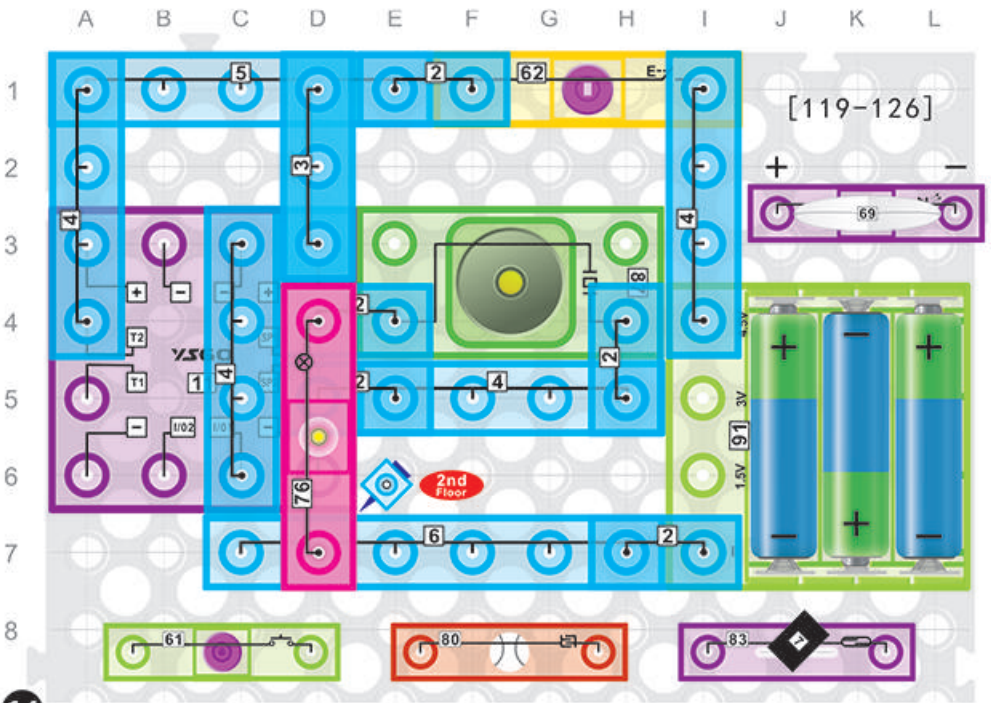
115.Switch Controls the Play of Birthday Song and the LED

116.Press Switch Controls the Play of Birthday Song and the LED

117.Magnet Controls the Play of Birthday Song and the LED

118.Touch Piece Controls the Play of Birthday Song and the LED

115-118, just replace the lamp[76] with the LED[69] in the circuit of 111-114.
(Note: Please make sure you install the LED in the right polarity.)



119.Switch Controls the Buzzer
Build the circuit, turn on the switch[62], you will hear the Birthday Song from the Buzzer[87], and the lamp[76] will be on. Disconnect the switch[62], the song will be stopped, and the lamp[76] will be off.

120.Press Switch Controls the Buzzer
Replace the switch[62] with the press switch[61], then press the press switch[61], you will hear the Birthday Song from the buzzer[87], and the lamp[76] will be on. Disconnect the switch[62], the song will be stopped, and the lamp[76] will be off.

121.Magnet Controls the Buzzer
Replace the switch[62] with the reed switch[83], move magnet[7] near the reed switch[83], you will hear the Birthday Song from the buzzer[87], and the lamp[76] will be on too.

122.Touch Piece Controls the Buzzer
Replace the switch[62] with the touch piece[80], touch the touch piece[80] with any sheetmetal, you will hear the Birthday Song from the buzzer[87], also the lamp[76] will be on.

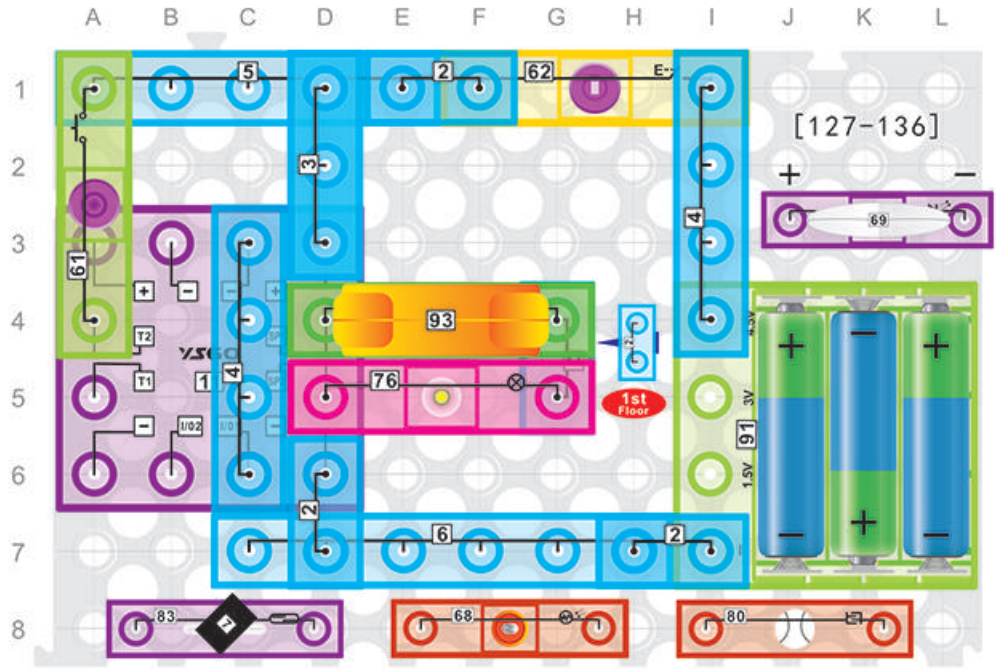
123.Switch Controls the Buzzer and LED

124.Press Switch Controls the Buzzer and LED

125.Magnet Controls the Buzzer and LED

126.Touch Piece Controls the Buzzer and LED

123-126, just replace the lamp[76] with the LED[69] in the circuit of 119-122.
(Note:Please make sure you install the LED in the right polarity.)



127.Switch Control the Musical Door Bell
Build the circuit, connect the switch[62], you will hear the music from speaker[93], then the lamp[76] will be on. When the music stops playing, press the press switch [61], music will be on again, also the lamp[76] will be heard later. Install the press switch[61] outdoors with small wire, you can hear the music andsee the lightening lamp indoors if it (press switch[61]) is pressed by any visitor.

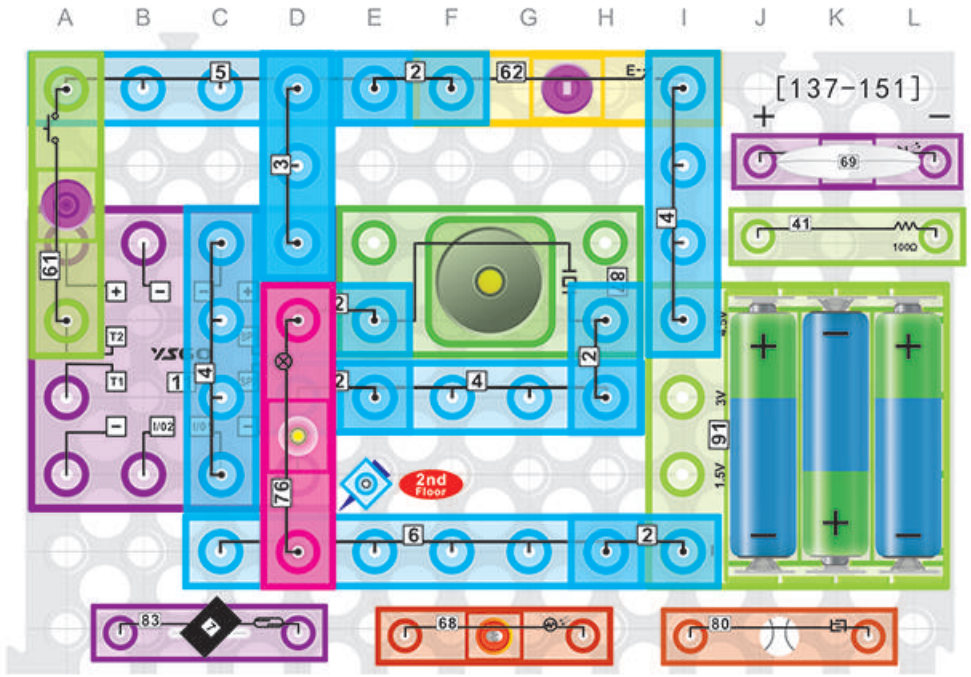
128.Magnet Controls the Musical Door Bell
Replace the press switch[61] with the reed switch[83], turn on the switch[62], move the magnet[7] towards the reed switch[83] till the music stops. You can also hear the door bell ringing.

129.Touch Piece Controls the Musical Door Bell
Replace the switch[61] with the touch piece[80], turn on the switch[62], touch the touch piece[80] with any sheetmetal till the music stops. Door bell will ring.

130.Light Controls the Speaker and Musical Door Bell
Replace the press switch[61] with photoresistance[68], turn on the switch[62], you will hear the music playing quietly. If you cover the light of the photoresistance[68], music will be stopped.

131.Water Controls the Speaker and Musical Door Bell
Replace the press switch[61] with touch piece[80], turn on the switch[62], now wait until the music stops, if you drop a drop of water on the touch piece[80], the music will be on again.

132.Press Switch Controls the Speaker and LED
133.Magnet Controls the Speaker and LED
134.Touch Piece Controls the Speaker and LED
135.Light Controls the Speaker and LED
136.Water Controls the Speaker and LED
132-136, just replace the lamp[76] with the LED[69] in the circuit of 127-131.
(Note:Please make sure you install the LED in the right polarity.)



137.Press Switch Controls the Buzzer and Lamp
Build the circuit, turn on the switch[62], you can hear the music from the buzzer[87], then the lamp[76] will be on. Wait until the music and lamp is off, press the press switch[61], you will hear the music again, and the lamp[76] will be on later. Install the press switch[61] outdoors with small wire, you can hear the music and see the lightening lamp indoors if it (press switch[61]) is pressed by any visitor.

138.Magnet Controls the Buzzer and Lamp
Replace the press switch[61] with the reed switch[83], turn on the switch[62], then the music will be off, and the lamp will be turned off . If you want to let them work again, you just need to move magnet[7] near the reed switch.

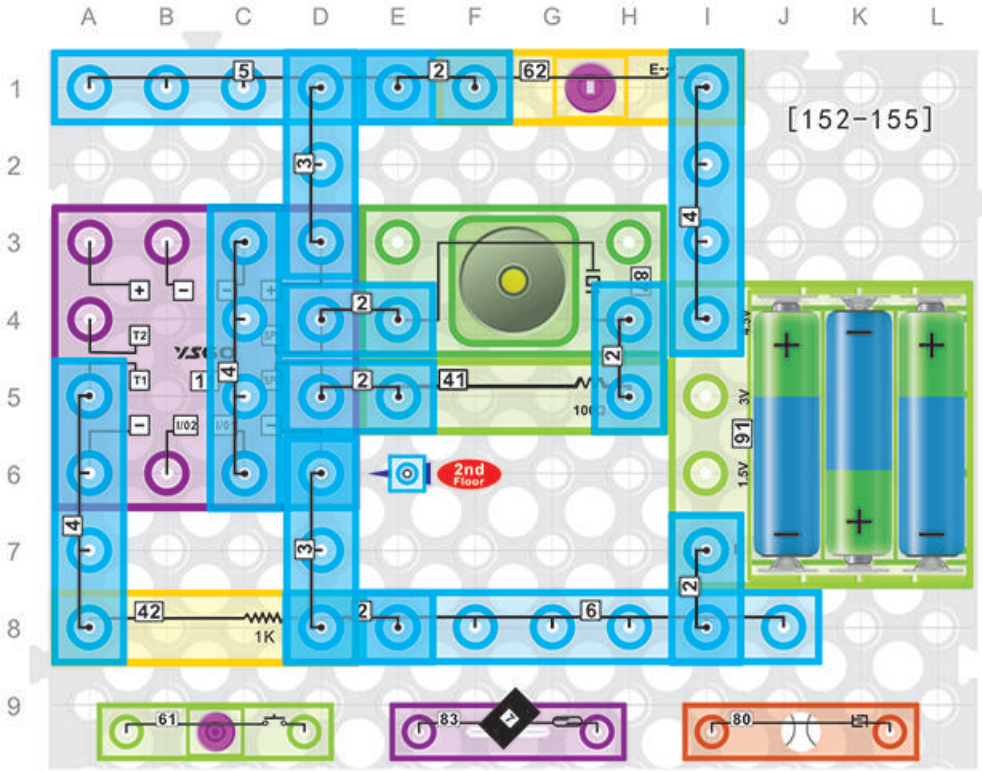
139.Touch Piece Controls the Buzzer and Lamp
Replace the press switch[61] with the reed switch[83], turn on the switch[62], then the music will be off, and the lamp will be turned off .If you want to let them work again, you just need to touch the touch piece[80] with any sheetmetal.

140.Light Control the Buzzer and Lamp
Replace the press switch[61] with photoresistance[68], turn on the switch[62], you will hear the music playing quietly. If you cover the light of the photoresistance[68], music will be stopped.

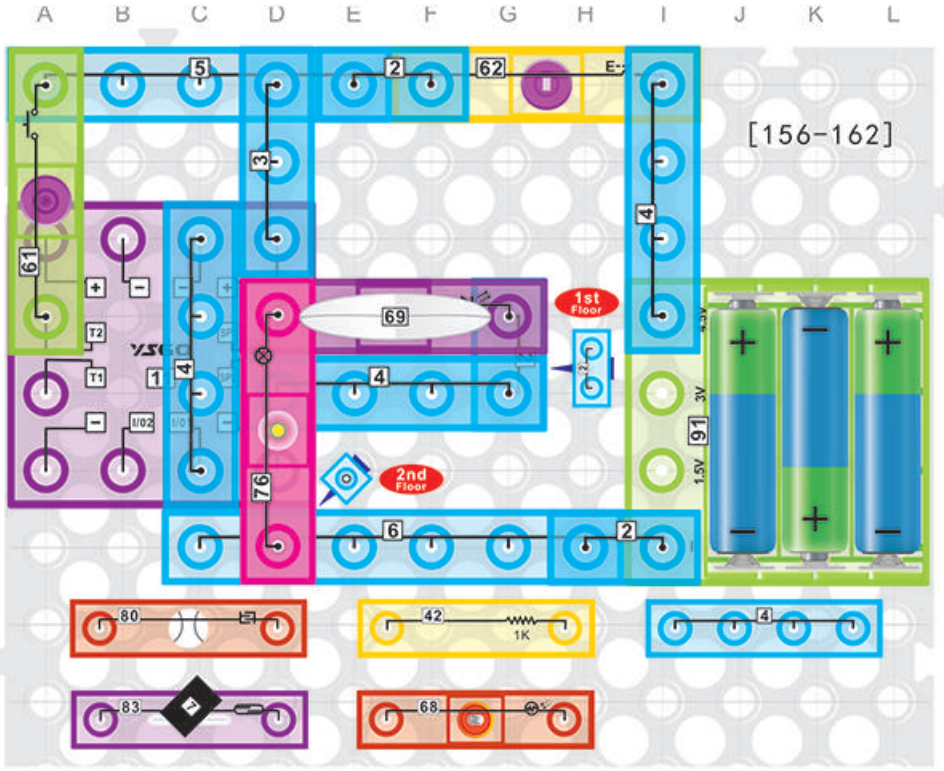
141.Water Controls the Buzzer and Lamp
Replace the switch[61] with touch piece[80], turn on the switch[62], now wait until the music stops, if you drop a drop of water on the touch piece[80], the music will be on again.

142.Press Switch Controls the Buzzer and LED
143.Magnet Controls the Buzzer and LED
144.Touch Piece Control the Buzzer and LED
145.Light Controls the Buzzer and LED
146.Water Controls the Buzzer and LED
142-146, just replace the lamp[76] with the LED[69] in the circuit 137-141.

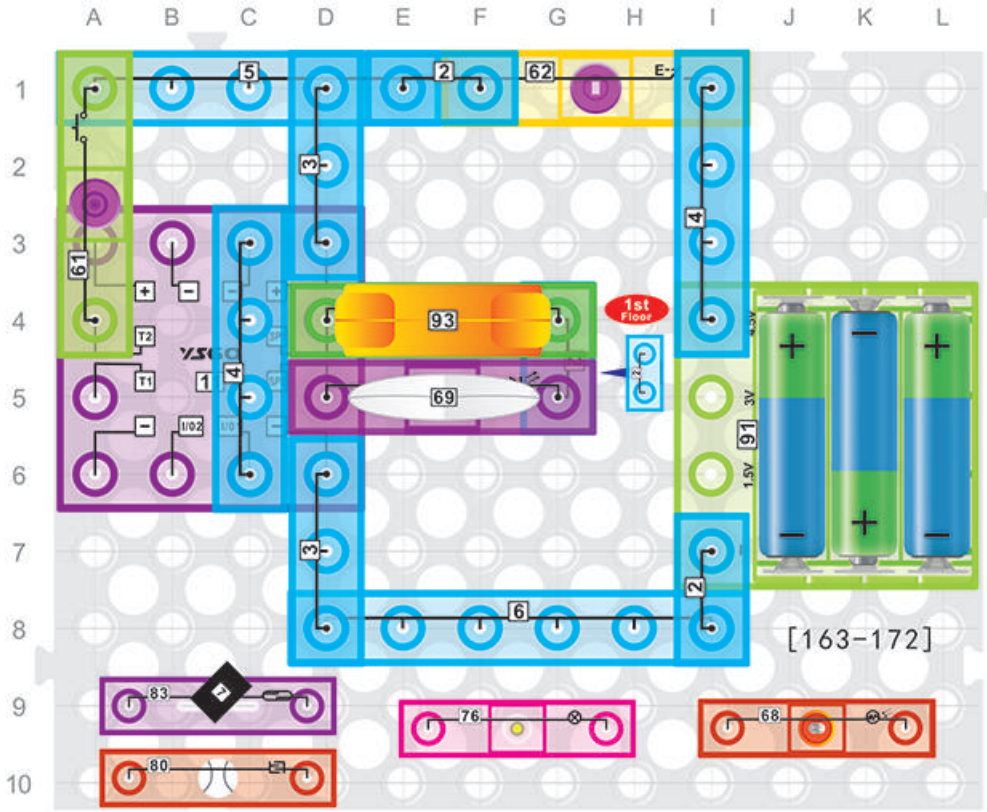
147.Press Switch Controls the Buzzer and Musical Door Bell
148.Magnet Controls the Buzzer and Musical Door Bell
149.Touch Piece Controls the Buzzer and Musical Door Bell
150.Light Controls the Buzzer and Musical Door Bell
151.Water Controls the Buzzer and Musical Door Bell
147-151, replace the press switch[61] with the wire[4] in the circuit of 137-141.



152.Switch Controls the Buzzer and Continuous Musical Door Bell
Build the circuit, turn on the switch[62], you will hear the music from the buzzer[87], and the music will last for a little while.
153.Press Switch Controls the Buzzer and Continuous Musical Door Bell
Replace the switch[62] with the press switch[61], press the press switch[61], you will hear the music from the buzzer[87], and the music will last for a little while.
154.Magnet Controls the Buzzer and Continuous Musical Door Bell
Replace the switch[62] with the reed switch[83], the move magnet[7] near the reed switch[83], you will hear the music from the buzzer[87], and the music will last for a little while.
155.Touch Piece Controls the Buzzer and Continuous Musical Door Bell
Replace the switch[62] with touch piece[80], touch the touch piece[80] with any sheetmetal, you will hear the music from the buzzer[87], and the music will last for a little while.



156.Press Switch Controls the Lamp and LED
Build the circuit, if you press tightly on the press switch[61], then turn on the switch[62], you can see the lamp[76] and LED[69] will flash on and off at the same time.
157.Magnet Controls the Lamp and LED
Replace the press switch[61] with reed switch[83], move magnet[7] near the reed switch[83], do not move, then press the switch[62], the lamp[76] and the LED[69] will flash on and off at the same time too.
158.Touch Piece Controls the Lamp and LED
Replace the press switch[61] with touch piece[80] in the upper circuit, touch the touch piece[80] with any sheetmetal, then press the switch[62].
159.Wire Controls the Lamp and LED
Replace the switch[61] with wire[4], turn on the switch[62].
160.Resistor Controls the Lamp and LED
Replace the press switch[61] with the 1K resistor[42], then turn on the switch[62].
161.Photoresistance Controls the Lamp and LED
Replace the press switch[61] with the photoresistance[68], turn on the switch[62].
162.Water Controls the Lamp and LED
Place the press switch[61] with the touch piece[80], drop one drop of water on the touch piece[80], then turn on the switch[62].



163.Press Switch Controls the LED and Birthday Song
Build the circuit, press the switch[62], you will hear the Birthday Song from the speaker[93], and LED[69] will be on. Wait until they stop working, press the press switch[61], you will hear the song again from speaker[93], then the LED[69] will be on.

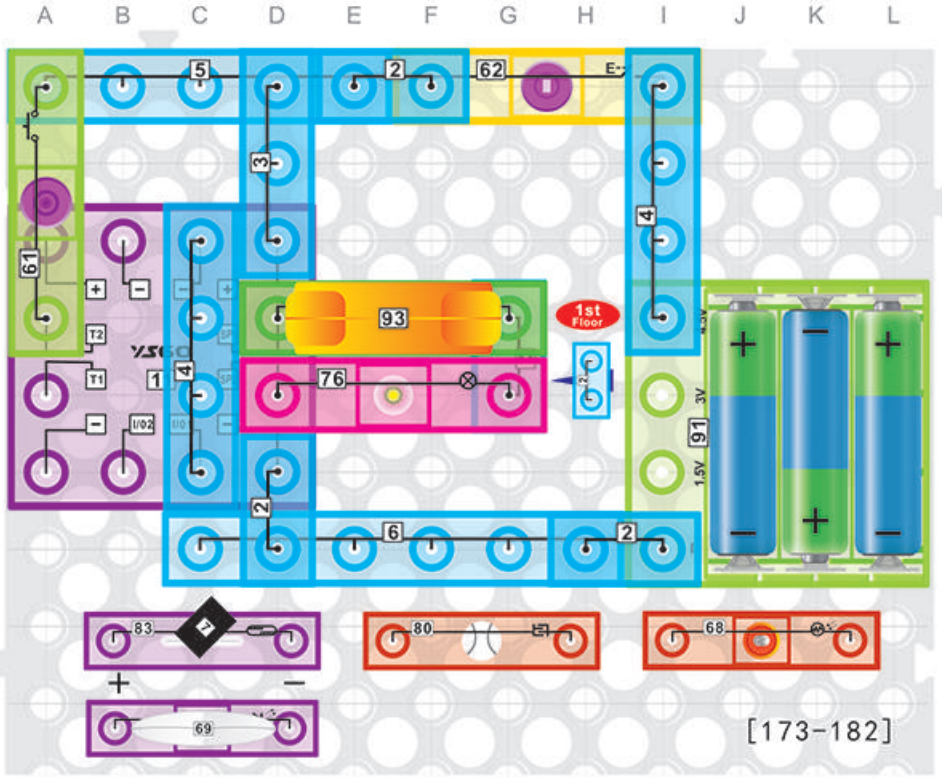
164.Magnet Controls the LED and Birthday Song
Replace the press switch[61] with the reed switch[83], turn on the switch[62], the music and LED[69] will be off later. if you want to turn on again, you can move magnet[7] near the reed switch[83].

165.Touch Piece Controls the LED and Birthday Song
Replace the press switch[61] with touch piece[80], turn on the switch[62], the music and LED[69] will be off later. if you want to turn on again, you just need to touch the touch piece[80] with any sheetmetal.

166.Light Controls the LED and Birthday Song
Replace the press switch[61] with photoresistance[68], turn on the switch [62], the Birthday Song will keep playing. If you cover the light of the photoresistance[68], the music will be off.

167.Water Controls the LED and Birthday Song
Replace the press switch[61] with touch piece[80], connect the switch[62], the Birthday Song will be turned off, and the LED[69] will be off later. If you want to turn on again, you just need to drop a drop of water on the touch piece[80].

168.Press Switch Controls the Lamp and Birthday Song
169.Magnet Controls the Lamp and Birthday Song
170.Touch Piece Controls the Lamp and Birthday Song
171.Light Controls the Lamp and Birthday Song
172.Water Controls the Lamp and Birthday Song
168-172, just replace the LED[69] with the lamp[76] in the circuit of 163-167.



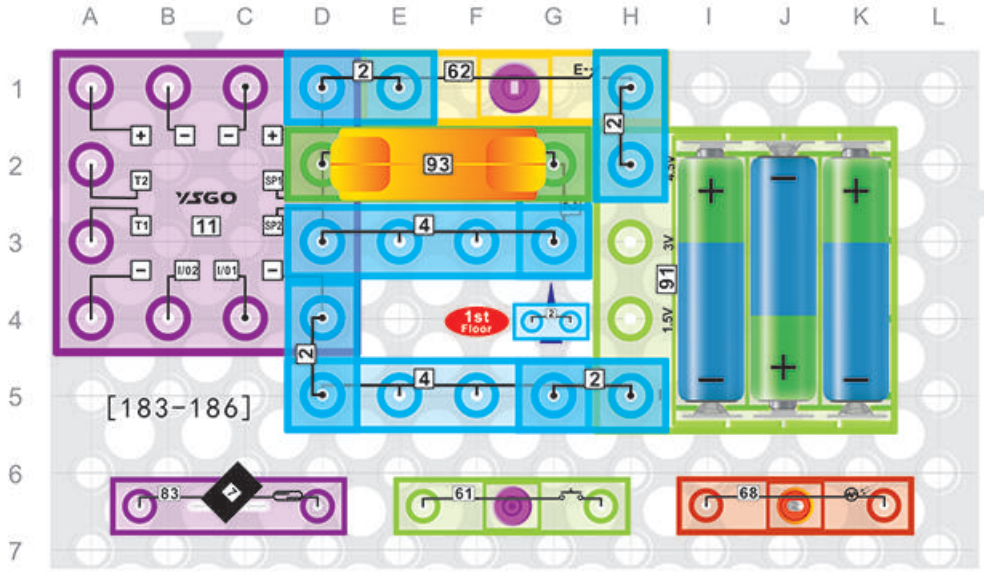
173.Press Switch Controls the Lamp and Circle Play of Birthday Song
Build the circuit, press the switch[62], press the press switch[61], the Birthday Song will be kept playing, and the lamp[76] will be on at the same time.

174.Magnet Controls the Lamp and Circle Play of Birthday Song
Replace the press switch[61] with the reed switch[83], turn on the switch[62], then move magnet[7] near the reed switch[83].

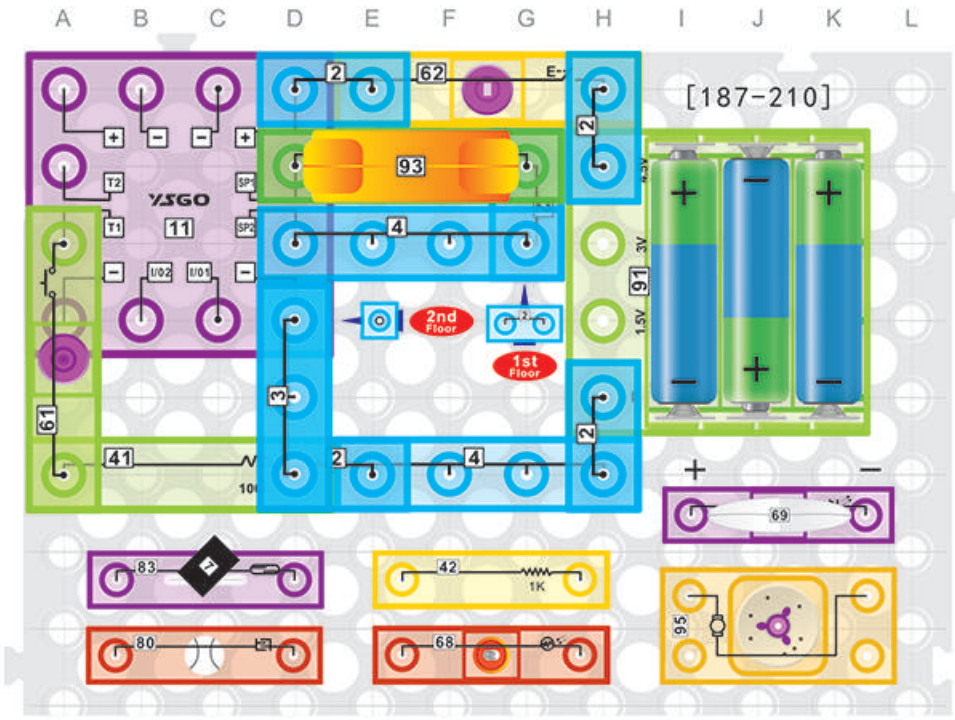
175.Touch Piece Controls the Lamp and Circle Play of Birthday Song
Replace the press switch[61] with touch piece[80], turn on the switch [62], then press the touch piece[80] with any sheetmetal.

176.Light Controls the Lamp and Circle Play of Birthday Song
Replace the press switch[61] with photoresistance[68], turn on the switch[62], you will hear the Birthday Song again and again. If you cover the light of the photoresistance[68], the music will be stopped.

177.Water Controls the Lamp and Circle Play of Birthday Song
Replace the press switch[61] with touch piece[80],turn on the switch[62], then drop a drop of water on the touch piece[80].
178.Press Switch Controls the LED and Circle Play of Birthday Song
179.Magnet Controls the LED and Circle Play of Birthday Song
180.Touch Piece Controls the LED and Circle Play of Birthday Song
181.Light Controls the LED and Circle Play of Birthday Song
182.Water Controls the LED and Circle Play of Birthday Song
178-182, you just need to replace the lamp[76] with the LED[69] in the circuit of 173-177.

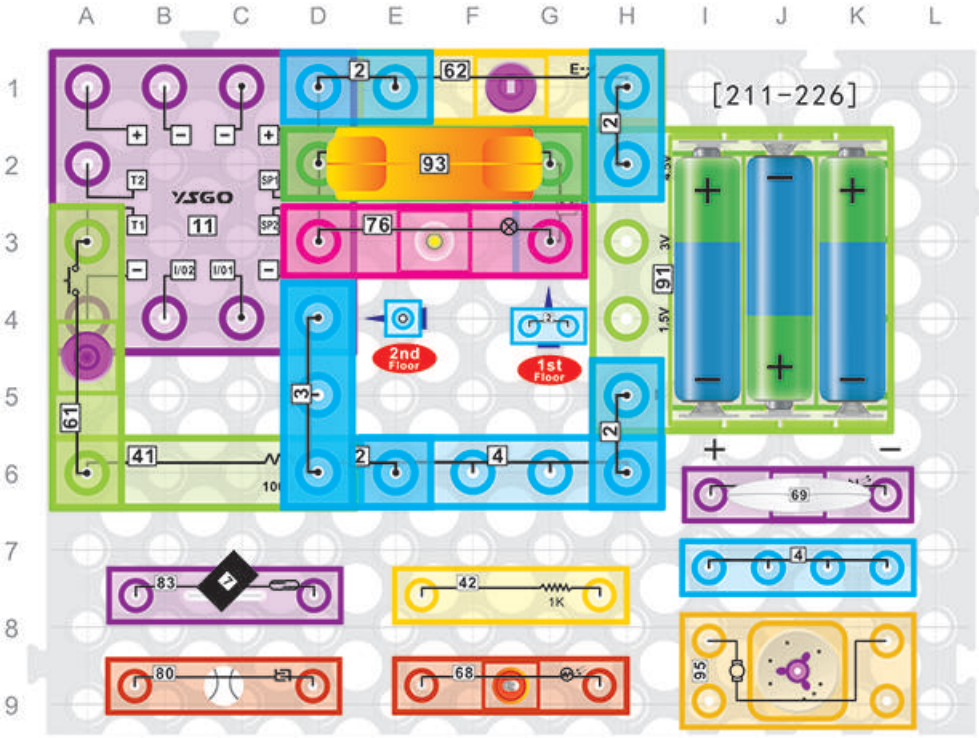


183.Switch Controls the Sounds of Police Siren
Build the circuit, turn on the switch[62], you will hear the sound of police siren from speaker[93].
184.Magnet Controls the Sounds of Police Siren
Replace the switch[62] with the reed switch[83], move magnet[7] near the reed switch[83], you will also hear the sound of police siren from the speaker[93].
185.Press Switch Controls the Sounds of Police Siren
Replace the switch[62] with the press switch[61], press the press switch[61], you will also hear the sound of police siren from the speaker[93].
186.Touch Piece Controls the Sounds of Police Siren
Replace the switch[62] with touch piece[80], press the touch piece[80] with any sheetmetal, the siren will start working too.

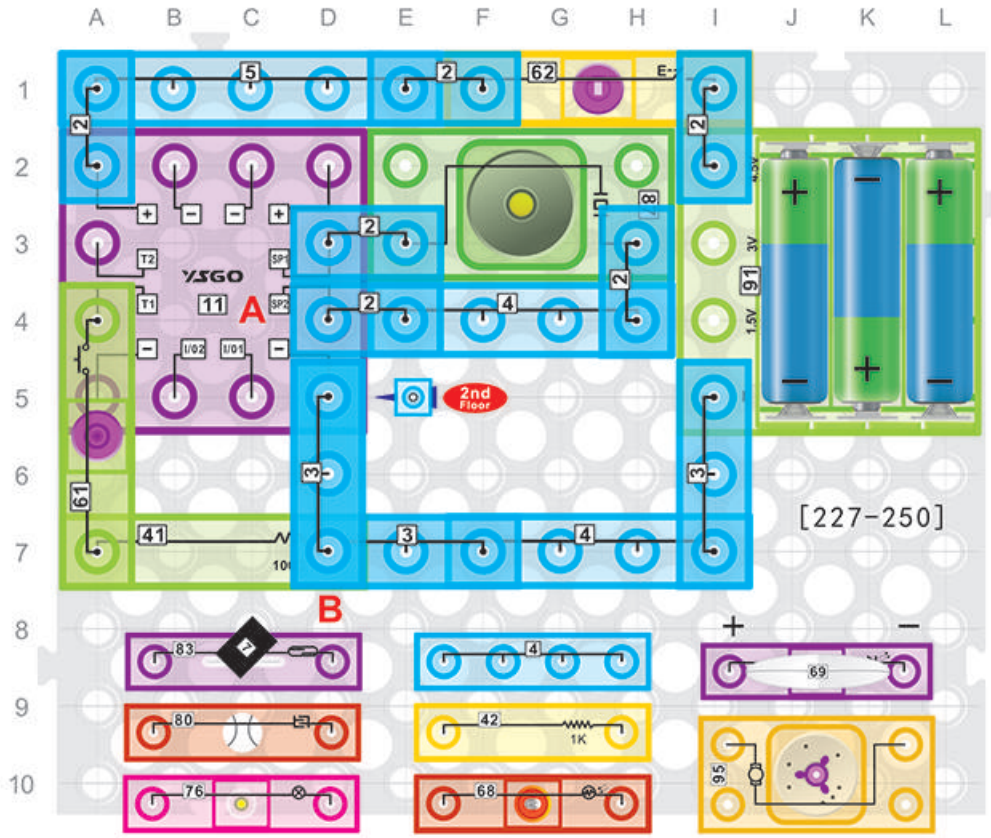


187.Press Switch Controls the Sounds of Machine Guns
Build the circuit, connect the switch[62], if you press the press switch[61], you can hear the sounds of machine guns from the speaker[93].
188.Magnet Controls the Sounds of Machine Guns
Replace the press switch[61] with the reed switch[83], keep magnet[7] touch the reed switch[83], you will also hear the sounds of machine guns from the speaker[93].
189.Touch Piece Controls the Sounds of Machine Guns
Replace the press switch[61] with touch piece[80], press the touch piece[80] with any sheetmetal, then you can hear the sounds of machine guns from the speaker[93].
190.Light Controls the Sounds of Machine Guns
Replace the press switch[61] with photoresistance[68], turn on the switch[62], you will hear the sounds of machine guns from the speaker[93].
191.Motor Controls the Sounds of Machine Guns
Replace the press switch[61] with the motor[95], turn on the switch[62], you will hear the sounds of machine gun too.
192.Resistor Controls the Sounds of Machine Guns
Replace the press switch[61] with 1K resistor[42], turn on the switch[62].
193.Wire Controls the Sounds of Machine Guns
Replace the press switch[61] with wire[4], then turn on the switch[62].

194.Water Controls the Sounds of Machine Guns
Replace the press switch[61] with touch piece[80], if you drop a drop of water on the touch piece[80], then turn on the switch[62], you can hear the sounds of machine guns from the speaker[93].
195.Press Switch Controls the Flash of Lamp
196.Magnet Controls the Flash of Lamp
197.Touch Piece Controls the Flash of Lamp
198.Light Controls the Flash of Lamp
199.Motor Controls the Flash of Lamp
200.Resistor Controls the Flash of Lamp
201.Wire Controls the Flash of Lamp
202.Water Controls the Flash of Lamp
195-202, you just need to replace the speaker[93] with the lamp[76] in the circuit of 187-194.
203.Press Switch Controls the Flash of LED
204.Magnet Controls the Flash of LED
205.Touch Piece Controls the Flash of LED
206.Resistor Controls the Flash of LED
207.Light Controls the Flash of LED
208.Motor Controls the Flash of LED
209.Wire Controls the Flash of LED
210.Water Controls the Flash of LED
203-210, you just need to replace the speaker[93] with the LED[69] in the circuit of 187-194.

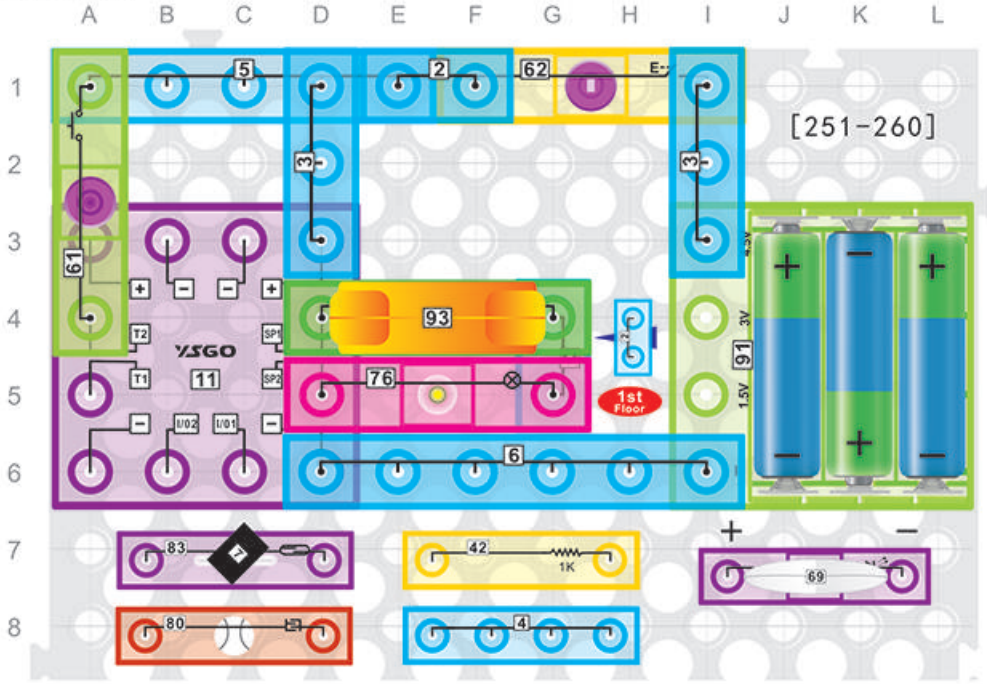


211.Press Switch Controls Lamp and Sounds of Machine Guns
Build the circuit, turn on the switch[62], then press the press switch[61], you will hear the sounds of machine guns from the speaker[93], and the lamp[76] will be on.
212.Magnet Controls Lamp and Sounds of Machine Guns
Replace the press switch[61] with the reed switch[83], touch the reed switch [83] with magnet[7], then turn on the switch[62],you will hear the sounds of machine guns from the speaker[93], and the lamp[76] will be on.
213.Touch Piece Controls Lamp and Sounds of Machine Guns
Replace the press switch[61] with touch piece[80], touch the touch piece[80] with any sheetmetal, then turn on the switch[62].
214.Light Controls Lamp and Sounds of Machine Guns
Replace the press switch[61] with the photoresistance[68], turn on the switch[62].
215.Motor Controls Lamp and Sounds of Machine Guns
Replace the press switch[61] with motor[95], then turn on the switch[62].
216.Resistor Controls Lamp and Sounds of Machine Guns
Replace the press switch[61] with 1K resistor[42], then turn on the switch[62].
217.Wire Controls Lamp and Sounds of Machine Guns
Replace the press switch[61] with wire[4], then turn on the switch[62].
218.Water Controls Lamp and Sounds of Machine Guns
Replace the press switch[61] with touch piece[80], drop a drop of water on the touch piece[80], then turn on the switch[62], you will hear the sounds of machine guns from the speaker[93], and the lamp[76] will be on.
219.Press Switch Controls the LED and Sounds of Machine Guns
220.Magnet Controls the LED and Sounds of Machine Guns
221.Touch Piece Controls the LED and Sounds of Machine Guns
222.Light Controls the LED and Sounds of Machine Guns
223.Motor Controls the LED and Sounds of Machine Guns
224.Resistor Controls the LED and Sounds of Machine Guns
225.Wire Controls the LED and Sounds of Machine Guns
226.Water Controls the LED and Sounds of Machine Guns
219-226, you just need to replace the lamp[76] with LED[69] in the circuit of 211-218.

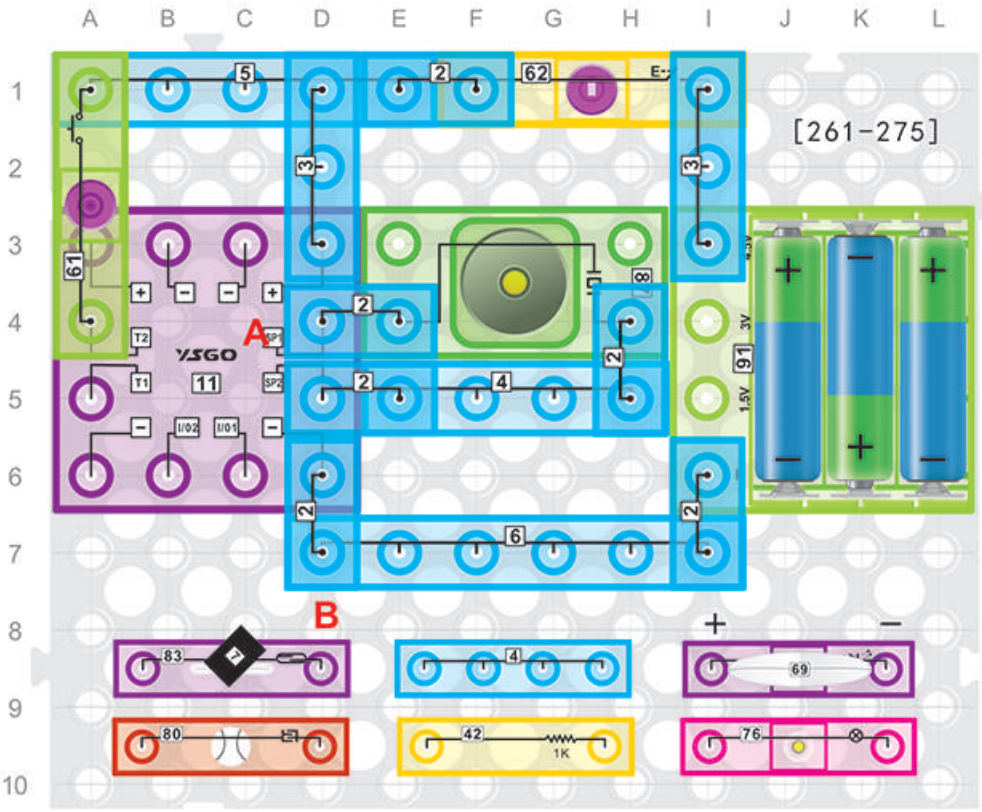


227.Press Switch Controls the Sounds of Machine Guns from the Buzzer
Build the circuit, press the switch[62], if you press the press switch[61], you will hear the sounds of machine guns from the buzzer[87].
228.Magnet Controls the Sounds of Machine Guns from the Buzzer
Replace the press switch[61] with the reed switch[83], touch the reed switc[83] with magnet[7], then turn on the switch[62].
229.Touch Piece Controls the Sounds of Machine Guns from the Buzzer
Replace the press switch[61] with touch piece[80], touch the touch piece[80] with any sheetmetal, then turn on the switch[62].
230.Light Controls the Sounds of Machine Guns from the Buzzer
Replace the press switch[61] with photoresistance[68], then turn on the switch[62].
231.Motor Controls the Sounds of Machine Guns from the Buzzer
Replace the press switch[61] with motor[95], then turn on the switch[62].
232.Resistor Controls the Sounds of Machine Guns from the Buzzer
Replace the press switch[61] with 1K resistor[42], then turn on the switch[62].
233.Wire Controls the Sounds of Machine Guns from the Buzzer
Replace the press switch[61] with wire[4], then turn on the switch[62].

234.Water Controls the Sounds of Machine Guns from the Buzzer
Replace the press switch[61] with touch piece[80], drop a drop of water on the touch piece[80], then turn on the switch[62].
235.Press Switch Controls the Lamp and the Sounds of Machine Guns from the Buzzer
236.Magnet Controls the Lamp and the Sounds of Machine Guns from the Buzzer
237.Touch Piece Controls the Lamp and the Sounds of Machine Guns from the Buzzer
238.Resistor Controls the Lamp and the Sounds of Machine Guns from the Buzzer
239.Light Controls the Lamp and the Sounds of Machine Guns from the Buzzer
240.Motor Controls the Lamp and the Sounds of Machine Guns from the Buzzer
241.Wire Controls the Lamp and the Sounds of Machine Guns from the Buzzer
242.Water Controls the Lamp and the Sounds of Machine Guns from the Buzzer
235-242, you just need to connect the lamp[76] in the point A and B in the circuit of 227-234.
243.Press Switch Controls the LED and the Sounds of Machine Guns from the Buzzer
244.Magnet Controls the LED and the Sounds of Machine Guns from the Buzzer
245.Touch Piece Controls the LED and the Sounds of Machine Guns from the Buzzer
246.Resistor Controls the LED and the Sounds of Machine Guns from the Buzzer
247.Light Controls the LED and the Sounds of Machine Guns from the Buzzer
248.Motor Controls the LED and the Sounds of Machine Guns from the Buzzer
249.Wire Controls the LED and the Sounds of Machine Guns from the Buzzer
250.Water Controls the LED and the Sounds of Machine Guns from the Buzzer
243-250, you just need to connect the LED[69] in the point A and B in the circuit of 227-234.

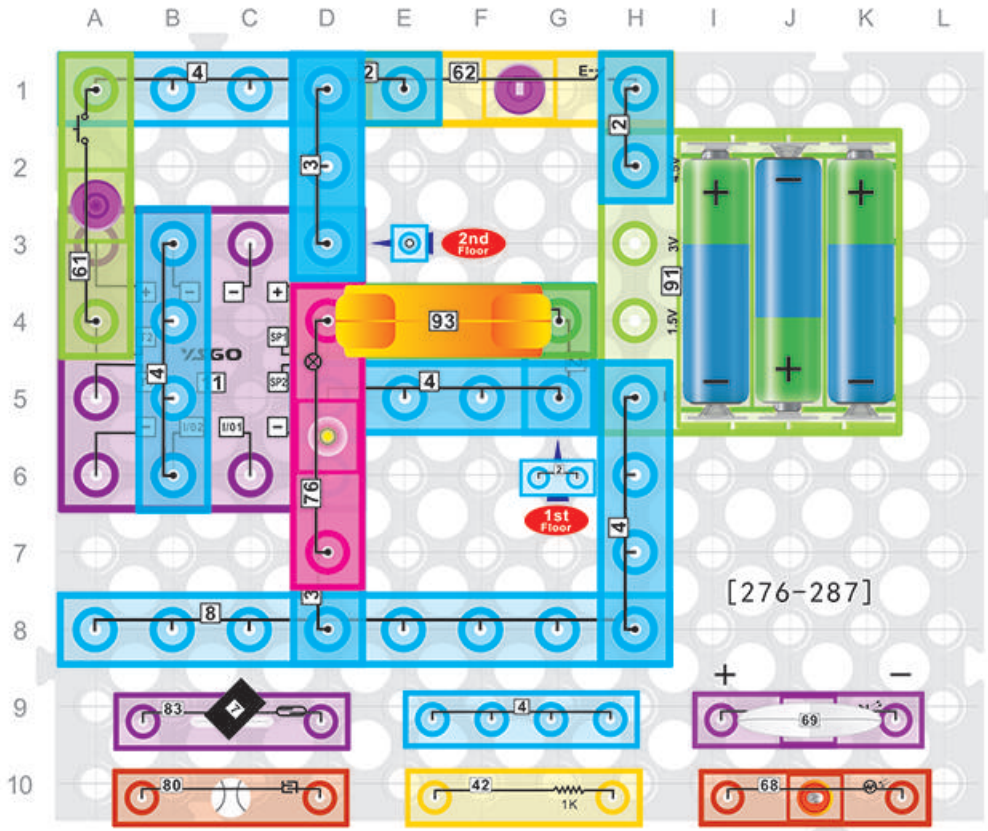


251.Press Switch Controls the Lamp and the Sounds of Fire Engine
Build the circuit, connect the switch[62], then press the press switch[61], you will hear the sounds of fire engine form the speaker[93], and the lamp[76] will be on.
252.Magnet Controls the Lamp and the Sounds of Fire Engine
This circuit is similar to the upper one, replace the press switch[61] with reed switch[83], touch the reed switch[83] with magnet[7], then turn on the switch[62].
253.Touch Controls the Lamp and the Sounds of Fire Engine
Replace the press switch[61] with touch piece[80], touch the touch piece[80] with any sheetmetal, then turn on the switch[62].
254.Resistor Controls the Lamp and the Sounds of Fire Engine
Replace the press switch[61] with 1K resistor[42], then turn on the switch[62].
255.Wire Controls the Lamp and the Sounds of Fire Engine
Replace the press switch[61] with the wire[4], then turn on the switch[62].
256.Press Switch Controls the LED and the Sounds of Fire Engine
257.Magnet Controls the LED and the Sounds of Fire Engine
258.Touch Piece Controls the LED and the Sounds of Fire Engine
259.Resistor Controls the LED and the Sounds the Fire Engine
260.Wire Controls the LED and the Sounds the Fire Engine
256-260, you just need to replace the lamp[76] with the LED[69] in the circuit of 251-255. (Note:Please make sure you install the LED in the right polarity.)



261.Press Switch Controls the Sounds of Fire Engine from the Buzzer
Build the circuit, press the switch[62], then press the press switch[61], you will hear the sounds of fire engine from the buzzer[87].
262.Magnet Controls the Sounds of Fire Engine from the Buzzer
Replace the press switch[61] with the reed switch[83], touch the reed switch[83] with magnet[7], then turn on the switch[62], you will also hear the sounds of fire engine from the buzzer[87].
263.Touch Piece Controls the Sounds of Fire Engine from the Buzzer
Replace the press switch[61] with touch piece[80], press the touch piece[80] with any sheetmetal, then turn on the switch[62], the sounds of fire engine will be on again.
264.Resistor Controls the Sounds of Fire Engine from the Buzzer
Replace the press switch[61] with the 1K resistor[42], then turn on the switch[62].
265.Wire Controls the Sounds of Fire Engine from the Buzzer
Replace the press switch[61] with the wire[4], then turn on the switch[62].
264.Press Switch Controls the Lamp and the Sounds of Fire Engine from the Buzzer
265.Magnet Controls the Lamp and the Sounds of Fire Engine from the Buzzer
266.Touch Piece Controls the Lamp and the Sounds of Fire Engine from the Buzzer

269.Resistor Controls the Lamp and the Sounds of Fire Engine from the Buzzer
270.Wire Controls the Lamp and the Sounds of Fire Engine from the Buzzer
266-270, you just need to install the lamp[76] in the point A and B in the circuit of 261-265.
271.Press Switch Controls the LED and the Sounds of Fire Engine from the Buzzer
272.Magnet Controls the LED and the Sounds of Fire Engine from the Buzzer
273.Touch Piece Controls the LED and the Sounds of Fire Engine from the Buzzer
274.Resistor Controls the LED and the Sounds of Fire Engine from the Buzzer
275.Wire Controls the LED and the Sounds of Fire Engine from the Buzzer
271-275, install the LED[69] in the point A and B in the circuit of 261-265.
(Note:Please make sure you install the LED in the right polarity.)



276.Press Switch Controls the Lamp and the Sounds of Space Battle
Build the circuit, turn on the switch[62], then press the press switch[61], you will hear the sounds of space battle from the speaker[93], and the lamp[76] is on too.

277.Magnet Controls the Lamp and the Sounds of Space Battle
Replace the press switch[61] with the reed switch[83], turn on the switch[62], if you touch the reed switch[83] with magnet[7] now, you can also hear the sounds of space battle from the speaker[93], and the lamp[76] is on too .

278.Touch Piece Controls the Lamp and the Sounds of Space Battle
Replace the press switch[61] with touch piece[80], then turn on the switch[62], if you touch the touch piece[80] with any sheetmetal now, you can hear the sounds of space battle from the speaker[93], and the lamp[76] is on too.

279.Light Controls the Lamp and the Sounds of Space Battle
Replace the press switch[61] with the photoresistance[68], then press the switch[62].

280.Resistor Controls the Lamp and the Sounds of Space Battle
Replace the press switch[61] with the 1K resistor[42], then turn on the switch [62].

281.Wire Controls the Lamp and the Sounds of Space Battle
Replace the press switch[61] with the wire[4], then turn on the switch[62].

282.Press Switch Controls the LED and the Sound of Space Battle

283.Magnet Controls the LED and the Sound of Space Battle

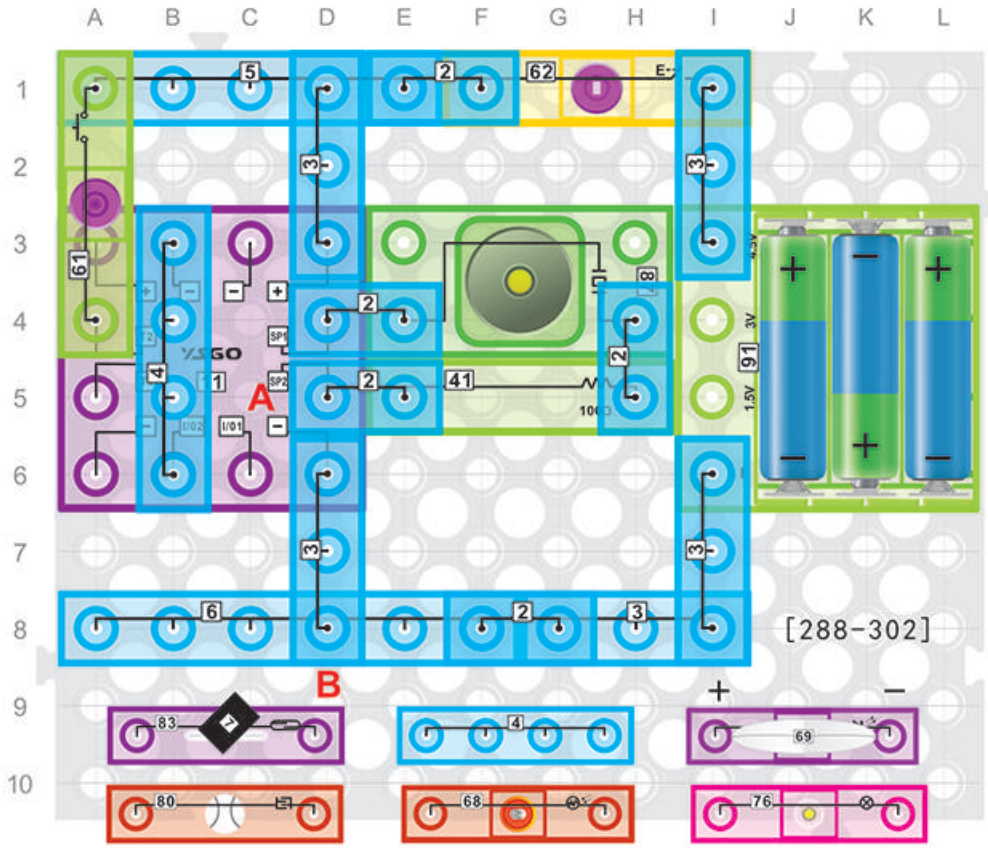
284.Touch Piece Controls the LED and the Sound of Space Battle

285.Light Controls the LED and the Sound of Space Battle

286.Resistor Controls the LED and the Sound of Space Battle

287.Wire Controls the LED and the Sound of Space Battle

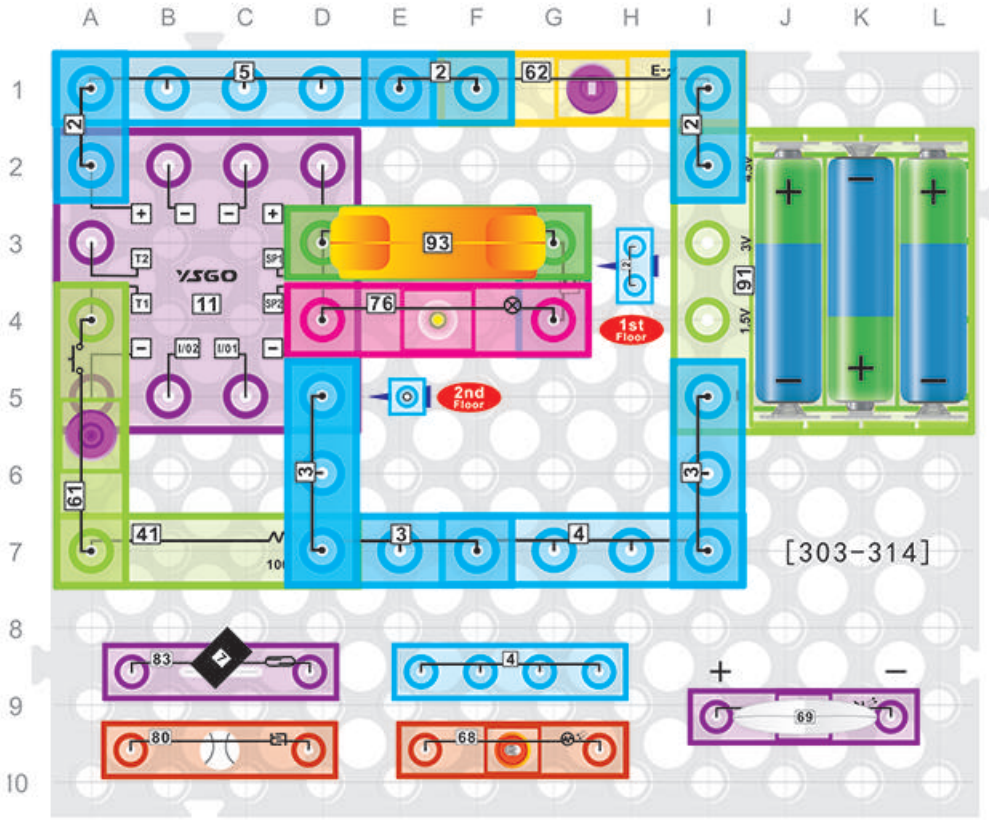
282-287, you just need to replace the lamp[76] with the LED[69] in the circuit of 276-281.



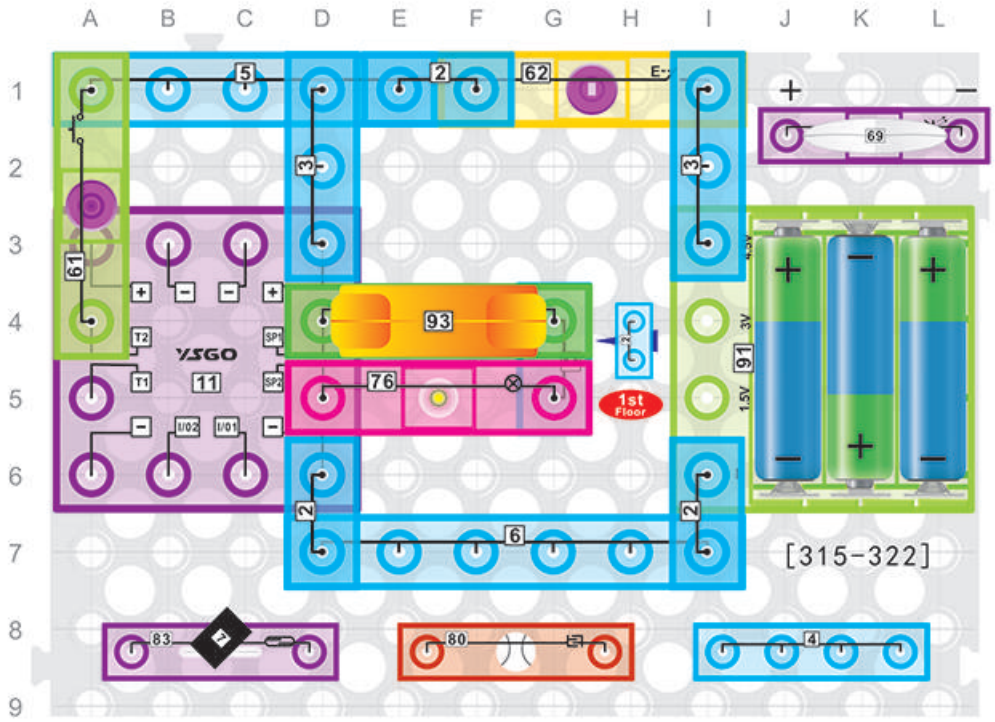
288.Press Switch Controls the Sounds of Space Battle from the Buzzer
Build the circuit, press the switch[62], the press the press switch[61], you will hear the sounds of space battle from the buzzer[87].

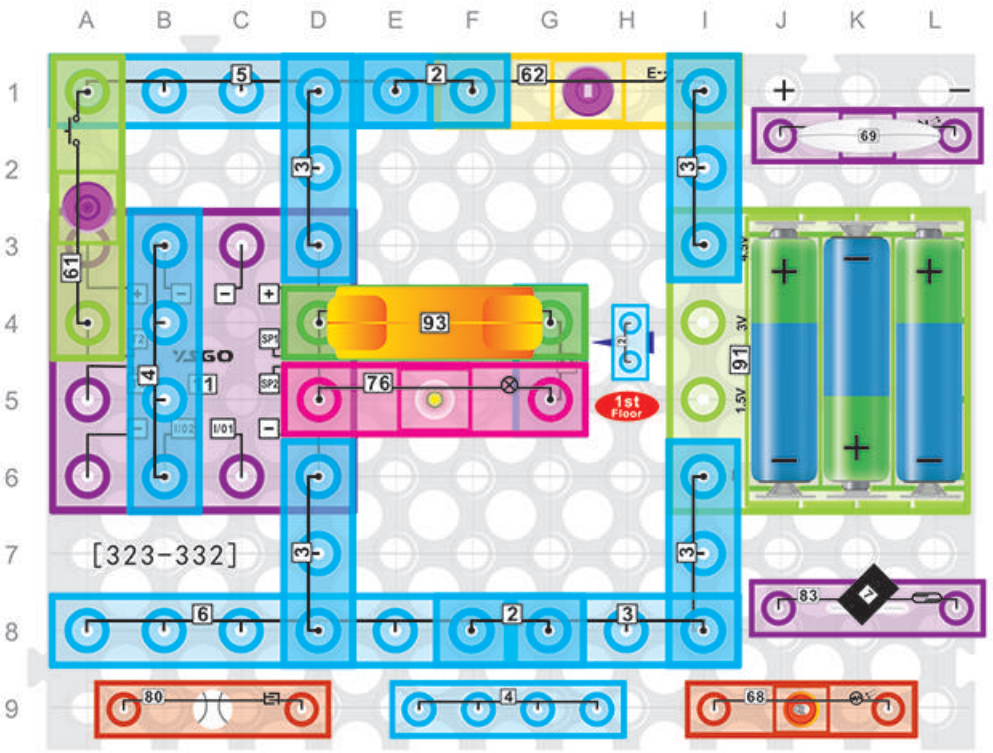
289.Magnet Controls the Sounds of Space Battle from the Buzzer
Replace the press switch[61] with the reed switch[83], turn on the switch[62], if you touch the reed switch[83] with magnet[7] now, you can hear the sounds of space battle from the buzzer[87].
290.Touch Piece Controls the Sounds of Space Battle from the Buzzer
Replace the press switch[61] with touch piece[80], then turn on the switch[62], if you touch the touch piece[80] with any sheetmetal now, you can hear the sounds of space battle from the buzzer[87].
291.Light Controls the Sounds of Space Battle from the Buzzer
Replace the press switch[61] with the photoresistance[68], then press the switch [62]. Do not cover the light of the photoresistance, or the sounds will be ended.
292.Wire Controls the Sounds of Space Battle from the Buzzer
Replace the press switch[61] with the wire[4], then turn on the switch[62], you can hear the sounds of space battle from the buzzer[87] too.
293.Press Switch Controls the Lamp and the Sounds of Space Battle from the Buzzer
294.Magnet Controls the Lamp and the Sounds of Space Battle from the Buzzer
295.Touch Piece Controls the Lamp and the Sounds of Space Battle from the Buzzer
296.Light Controls the Lamp and the Sounds of Space Battle from the Buzzer
297.Wire Controls the Lamp and the Sounds of Space Battle from the Buzzer
293-297, you just need to install the lamp[76] in the point A and B in the circuit of 288-292.
298.Press Switch Controls the LED and the Sounds of Space Battle from the Buzzer
299.Magnet Controls the LED and the Sounds of Space Battle from the Buzzer
300.Touch Piece Controls the LED and the Sounds of Space Battle from the Buzzer
301.Light Controls the LED and the Sounds of Space Battle from the Buzzer
302.Wire Controls the LED and the Sounds of Space Battle from the Buzzer
298-302, you just need to install the LED[69] in the point A and B in the circuit of 288-292.

303.Press Switch Controls the Lamp and the Moderate Volume of Machine Guns
Build the circuit, turn on the switch[62], then press the press switch[61], you will hear the sounds of machine guns from the speaker[93], and the lamp[76] will be on.
304.Magnet Controls the Lamp and the Moderate Volume of Machine Guns
Replace the press switch[61] with the reed switch[83], turn on the switch[62], if you touch the reed switch[83] with magnet[7] now, you can hear the sounds of machine guns from the speaker[93], and the lamp[76] will be on too.
305.Touch Piece Controls the Lamp and the Moderate Volume of Machine Guns
Replace the press switch[61] with touch piece[80], then turn on the switch[62], if you touch the touch piece[80] with any sheetmetal now, you can hear the sounds of machine guns from the speaker[93], and the lamp[76] will be on too.
306.Light Controls the Lamp and the Moderate Volume of Machine Guns
Replace the press switch[61] with the photoresistance[68], then press the switch[62].



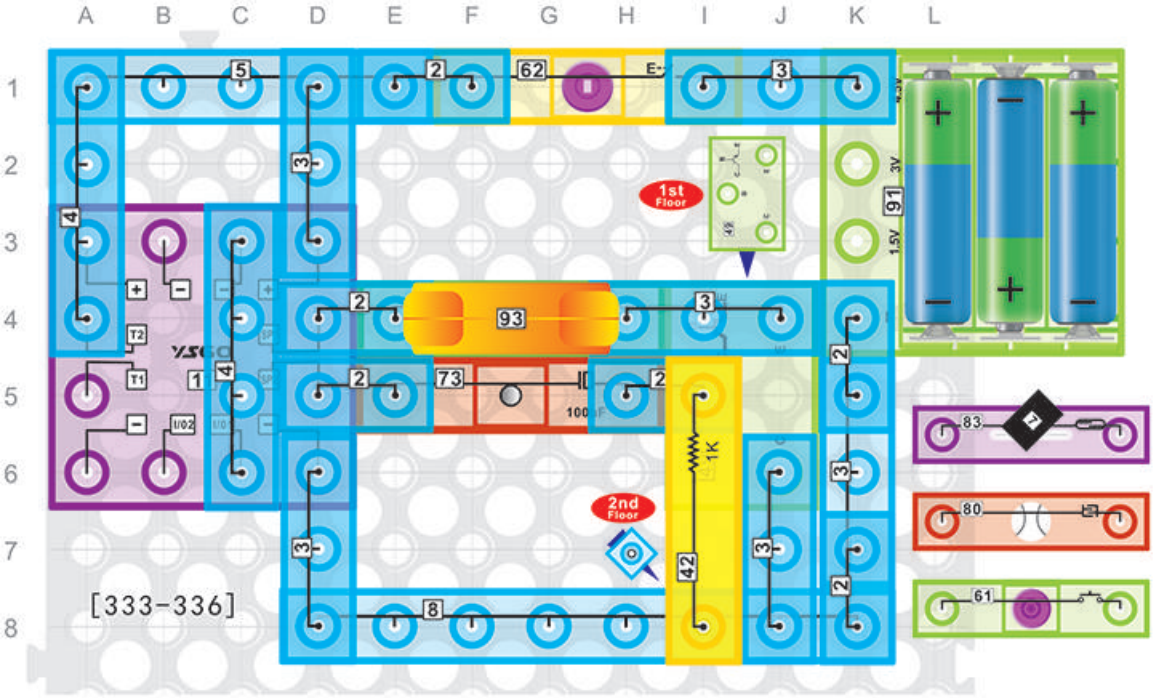
307. Wire Controls the Lamp and the Moderate Volume of Machine Guns
Replace the press switch[61] with the wire[4], then turn on the switch[62], you can hear the sounds of machine guns from the speaker[93],and the lamp[76] will be on too .
308.Water Controls the Lamp and the Moderate Volume of Machine Guns
Replace the press switch[61] with touch piece[80], turn on the switch[62], if you drop a drop of water on the touch piece[80] now, you will hear the sounds of machine guns from the speaker[93], and the lamp[76] will be on too.
309.Press Switch Controls the LED and the Moderate Volume of Machine Guns
310.Magnet Controls the LED and the Moderate Volume of Machine Guns
311.Touch Piece Controls the LED and the Moderate Volume of Machine Guns
312.Light Controls the LED and the Moderate Volume of Machine Guns
313.Wire Controls the LED and the Moderate Volume of Machine Guns
314.Water Controls the LED and the Moderate Volume of Machine Guns
309-314, you just need to replace the lamp[76] with the LED[69] in the circuit of 303-308





315.Press Switch Controls the Lamp and the Sounds of Fire Engine
Build the circuit, if you keep pressing the press switch[61], then turn on the switch [62], you will hear the sounds of fire engine from the speaker[93], then lamp[76] will be on too.
316.Magnet Controls the Lamp and the Sounds of Fire Engine
Replace the press switch[61] with the reed switch[83], turn on the switch[62], if you touch the reed switch[83] with magnet[7] now, you can hear the sounds of fire engine from the speaker[93], and the lamp[76] will be on too.
317.Touch Piece Controls the Lamp and the Sounds of Fire Engine
Replace the press switch[61] with touch piece[80], then turn on the switch[62], if you touch the touch piece[80] with any sheetmetal now, you will hear the sounds of fire engine in moderate volume from speaker[93], and the lamp[76] will be on too.
318.Wire Controls the Lamp and the Sounds of Fire Engine
Replace the press switch[61] with wire[4], turn on the switch[62].
319.Press Switch Controls the LED and the Sounds of Fire Engine
320.Magnet Controls the LED and the Sounds of Fire Engine
321.Touch Piece Controls the LED and the Sounds of Fire Engine
322.Wire Controls the LED and the Sounds of Fire Engine
319-322, replace the lamp[76] with LED[69] in the circuit of 315-318.
(Note:Please make sure you install the LED in the right polarity.)

323.Press Switch Controls the Lamp and the Sounds of Space Battle
Build the circuit, turn on the switch[62], if you press the press switch[61], you will hear the sounds of space battle from the speaker[93], and the lamp[76] will be on.
324.Magnet Controls the Lamp and the Sounds of Space Battle
Replace the press switch[61] with the reed switch[83], turn on the switch[62], if you touch the reed switch[83] with magnet[7] now, you can hear the sounds of space battle from the speaker[93], and the lamp[76] will be on too.
325.Touch Piece Controls the Lamp and the Sounds of Space Battle
Replace the press switch[61] with touch piece[80], turn on the switch[62], then touch the touch piece[80] with any sheetmetal.
326.Light Controls the Lamp and the Sounds of Space Battle
Replace the press switch[61] with the photoresistance[68], then turn on the switch[62].
327.Wire Controls the Lamp and the Sounds of Space Battle
Replace the press switch[61] with the wire[4], then turn on the switch[62].
328.Press Switch Controls the LED and the Sounds of Space Battle
329.Magnet Controls the LED and the Sounds of Space Battle
330.Touch Piece Controls the LED and the Sounds of Space Battle
331.Light Controls the LED and the Sounds of Space Battle
332.Wire Controls the LED and the Sounds of Space Battle
328-332, replace the lamp[76] with LED[69] in the circuit of 323-327.
(Note:Please make sure you install the LED in the right polarity.)

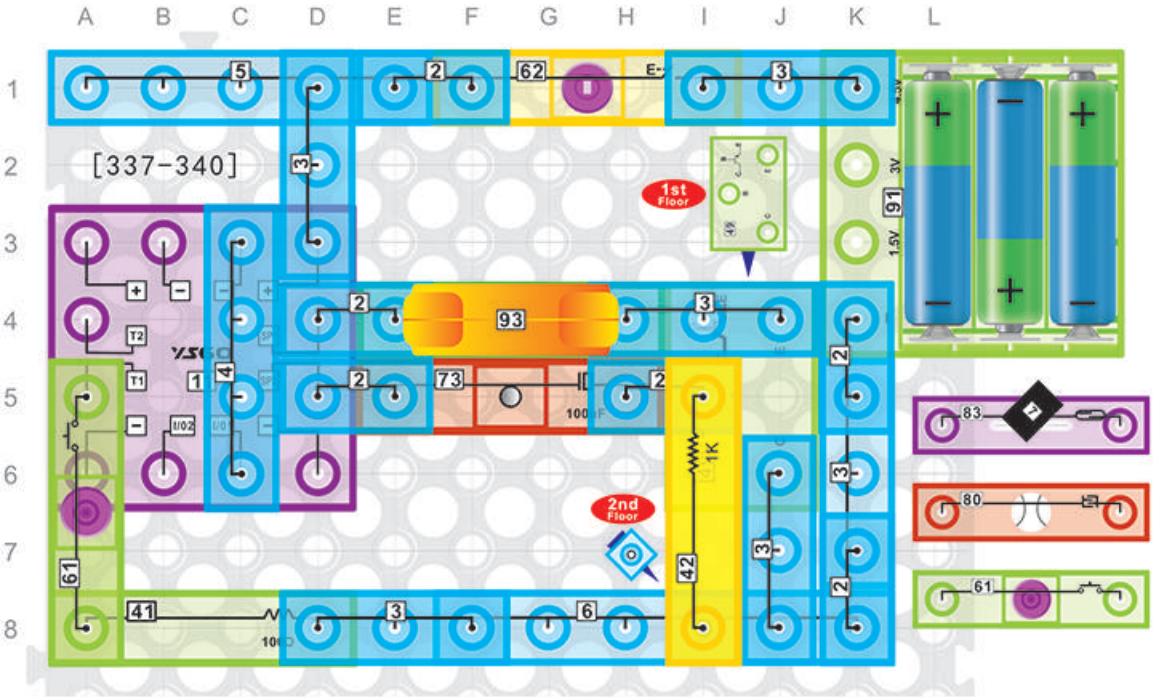


333. Switch Control the Music in the Capacitive Coupling (1)
Build the circuit, turn on the switch[62], you can hear the music from the speaker[93], then turn off the switch[62], the music will be stop.

334.Press Switch Controls the Music in the Capacitive Coupling (2)
Replace the switch[62] with the press switch[61], then press the press switch[61], you can hear the music from the speaker[93]. Release the press switch[61], the music will be off.

335.Magnet Controls the Music in the Capacitive Coupling (3)
Replace the switch[62] with the reed switch[83],touch the reed switch [83] with magnet[7], you will hear the music from the speaker[93]. If you move away the magnet[7], the music will be off.

336.Touch Piece Controls the Music in the Capacitive Coupling (4)
Replace the switch[62] with touch piece[80], press the touch piece[80] with any sheetmetal, you will hear music from the speaker[93]. Move away the sheetmetal, the music will be off.

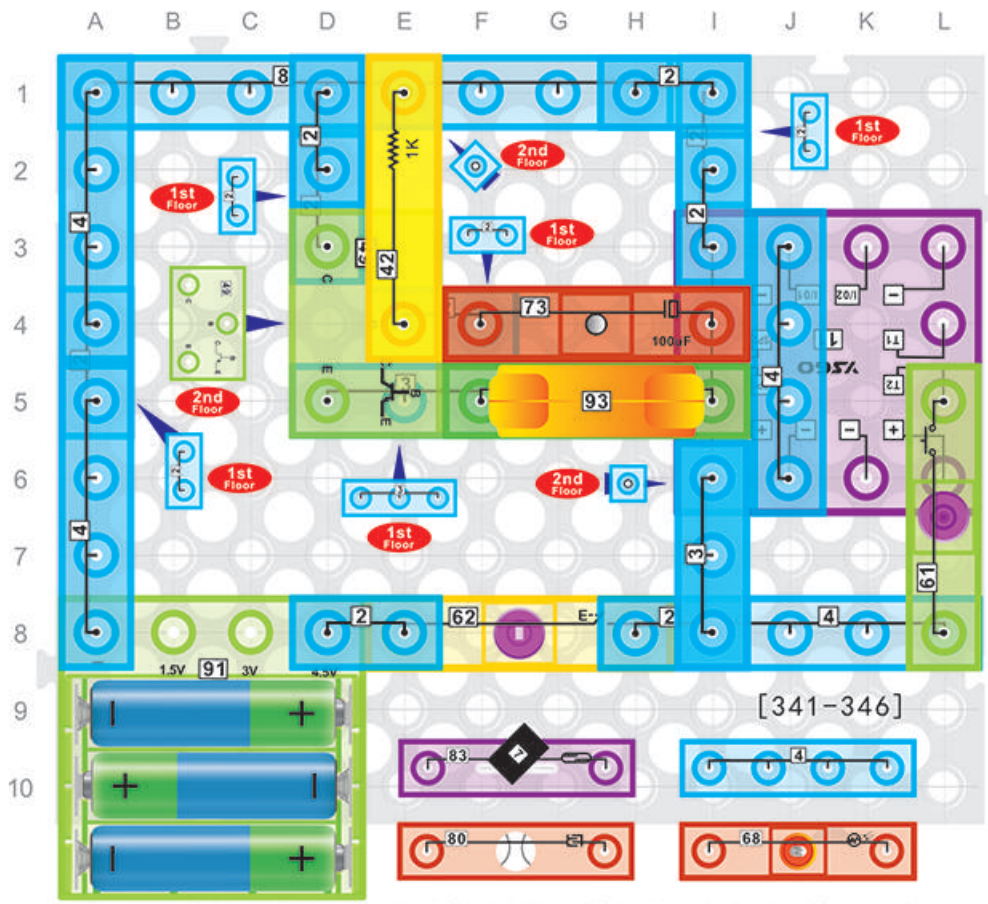


337.Press Switch Controls the Music in the Capacitive Coupling (1)
Replace the switch[62] with the press switch[61], then press the press switch[61], you can hear the music from the speaker[93]. Release the press switch[61], the music will be off.

338.Magnet Controls the Music in the Capacitive Coupling (1)
Replace the press switch[61] with the reed switch[83],touch the reed switch[83] with magnet[7], you will hear the music from the speaker[93]. If you move away the magnet[7], the music will be off.

339.Touch Piece Controls Music in the Capacitive Coupling (1)
Replace the press switch[61] with touch piece[80], press the touch piece[80] with any sheetmetal, you will hear music from the speaker [93]. Move away the sheetmetal, the music will be off.

340.Water Controls the Music in the Capacitive Coupling (1)
Replace the press switch[61] with touch piece[80], turn on the switch [62], the music will stop later. If you drop a drop of water onthe touch piece[80], you will hear the music from the speaker[93] again.



341.Press Switch Controls the Circle Play of the Music in the Capacitive Coupling(1)
Build the circuit, press the switch[62], if you press the press switch[61], you will hear the Birthday Song in circle play from the speaker[93].

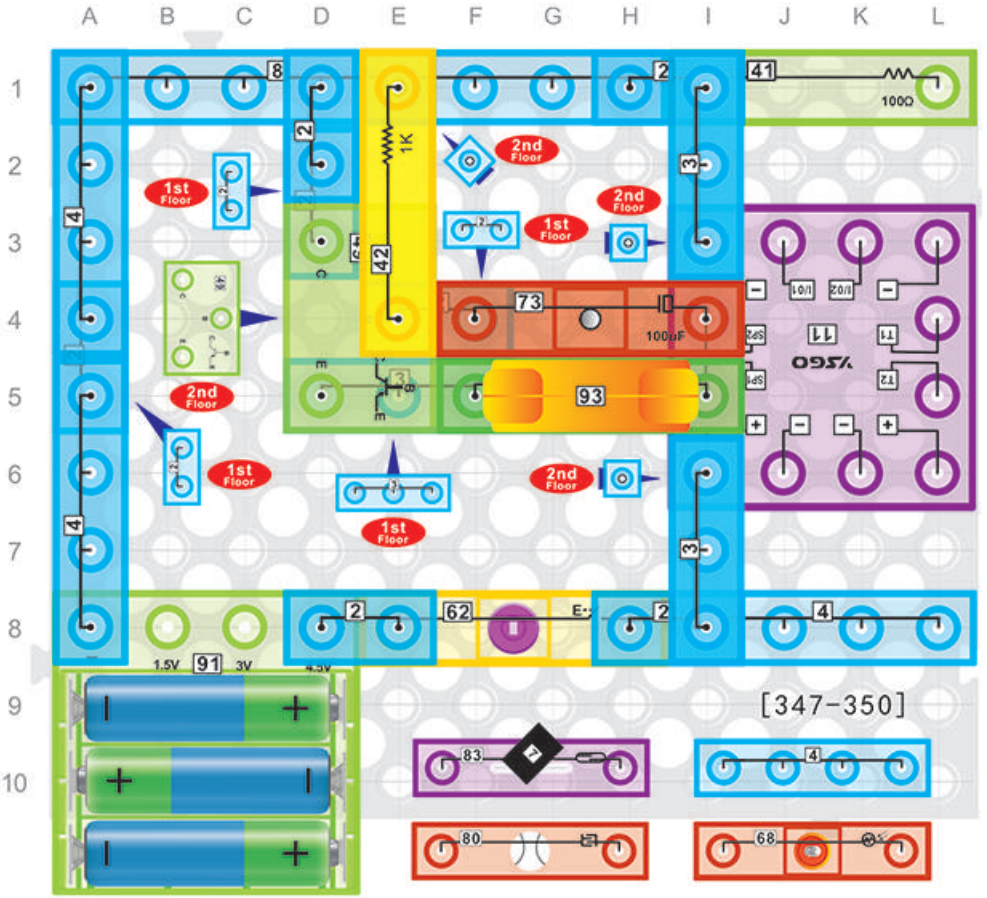
342.Magnet Controls the Circle Play of the Music in the Capacitive Coupling(1)
Replace the press switch[61] with the reed switch[83], then turn on the switch [62], keep magnet[7] touched the reed switch[83], you will hear the Birthday Song from the Speaker[93] again and again.

343.Touch Piece Controls the Circle Play of the Music in the Capacitive Coupling(1)
Replace the press switch[61] with touch piece[80], turn on the switch[62], if you touch the touch piece[80] with any sheetmetal now, you can hear the Birthday Song in circle play too.

344.Wire Controls the Circle Play of the Music in the Capacitive Coupling(1)
Replace the press switch[61] with wire[4], turn on the switch[62], you can hear the Birthday Song in circle play.

345.Light Controls the Circle Play of the Music in the Capacitive Coupling(1)
Replace the press switch[61] with photoresistance[68], then turn on the switch[62], now you can also hear the Birthday Song in circle play from the speaker[93].

346.Water Controls the Circle Play of the Music in the Capacitive Coupling(1)
Replace the press switch[61] with touch piece[80], then turn on the switch[62], if you drop a drop of water on the touch piece [80], you will hear the Birthday Song in circle play from the speaker[93].

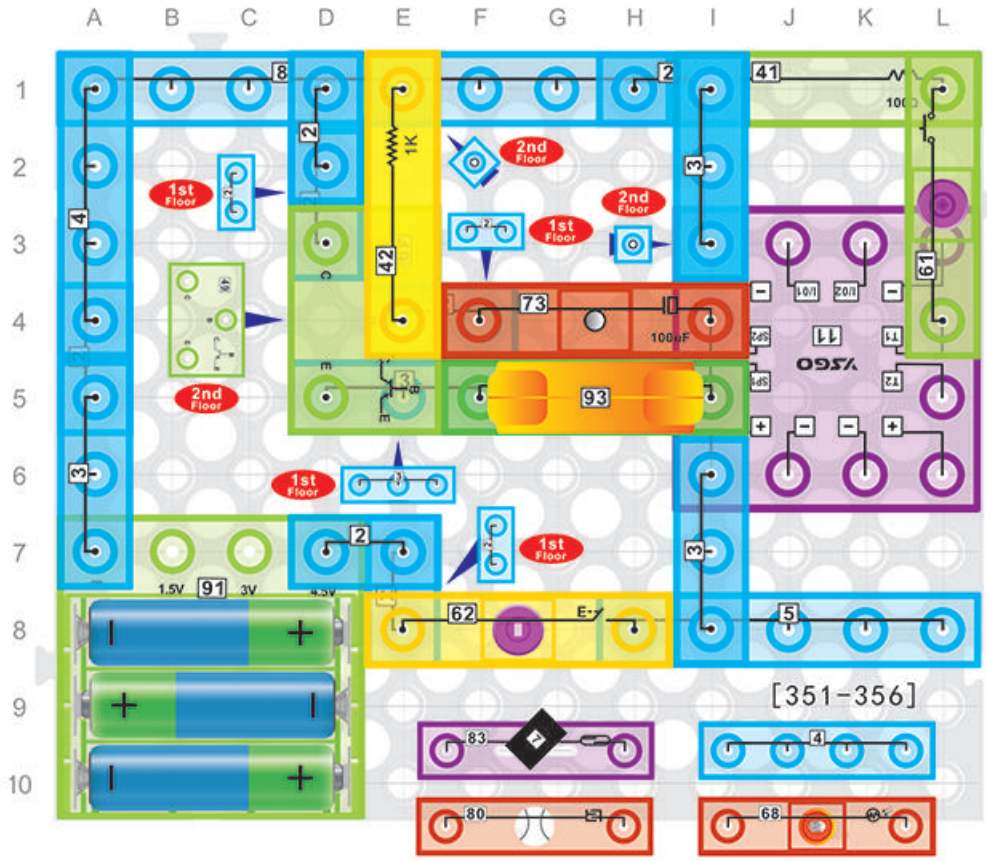


347.Switch Controls the Sounds of Police Siren in the Capacitive Coupling(1)
Build the circuit, press the switch[62], you will hear the sounds of police siren from the speaker[93].

348.Magnet Controls the Sounds of Police Siren in the Capacitive Coupling(1)
Replace the switch[62] with the reed switch[83], touch the reed switch[83] with magnet[7], you will also hear the sounds of police siren from the speaker[93].

349.Press Switch Controls the Sounds of Police Siren in the Capacitive Coupling(1)
Replace the switch[62] with the press switch[61], then turn on the press switch[61], you will hear the sounds of police siren from the speaker[93].

350.Touch Piece Controls the Sounds of Police Siren in the Capacitive Coupling(1)
Replace the switch[62] with the touch piece[80], touch the touch piece[80] with any sheetmetal, you will hear the sounds of police siren from the speaker[93].



351.Press Switch Controls the Sounds of Machine Guns in the Capacitive Coupling(1)

Build the circuit step by step, turn on the switch[62], then press the press switch [61], you will hear the sounds of machine guns from the speaker[93].

352. Magnet Controls the Sounds of Machine Guns in the Capacitive Coupling(1)

Replace the press switch[61] with the reed switch[83], then turn on the switch[62], if you touch the reed switch[83] with magnet[7], you can also hear the sounds of machine guns from the speaker[93].

353.Touch Piece Controls the Sounds of Machine Guns in the Capacitive Coupling(1)

Replace the press switch[61] with touch piece[80], then turn on the switch[62], if you touch the touch piece[80] with any sheetmetal now, you can hear the sounds of machine guns for the speaker[93].

354.Light Controls the Sounds of Machine Guns in the Capacitive Coupling(1)

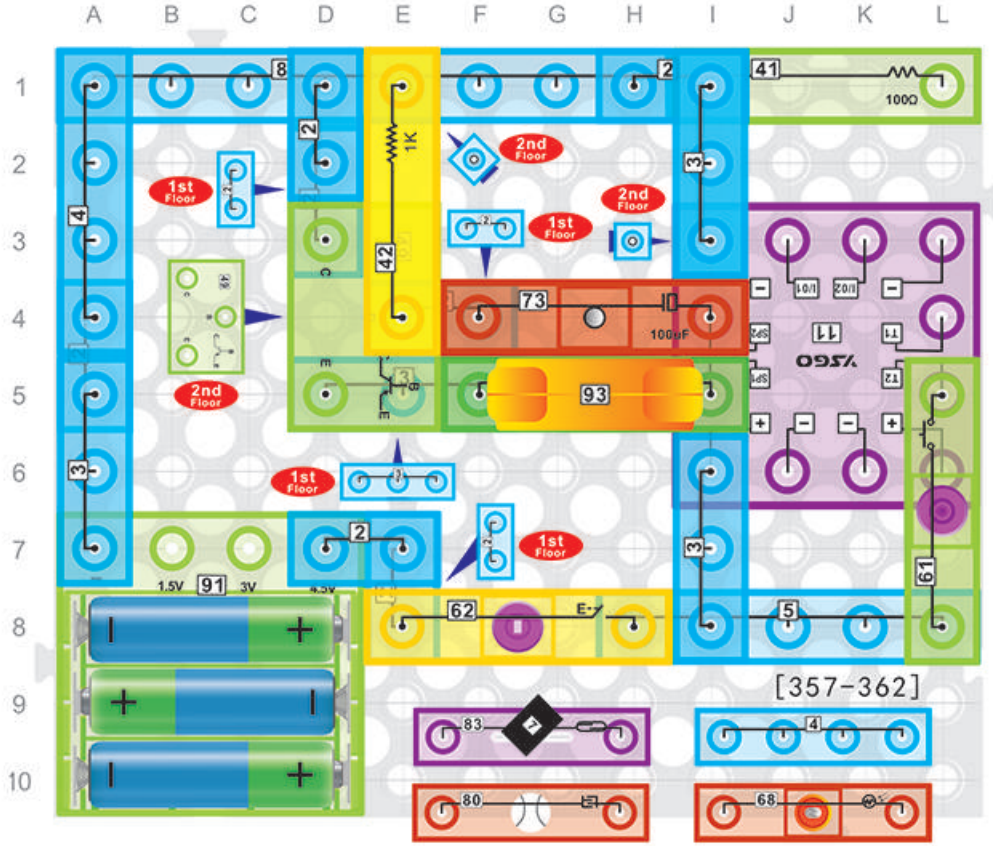
Replace the press switch[61] with photoresistance[68], then turn on the switch[62], you will also hear the sounds of machine guns from the speaker[93].

355.Wire Controls the Sounds of Machine Guns in the Capacitive Coupling(1)

Replace the press switch[61] with wire[4], then turn on the switch[62].

356.Water Controls the Sounds of Machine Guns in the Capacitive Coupling(1)

Replace the press switch[61] with touch piece[80], if you drop a drop of water on the touch piece[80], then turn on the switch[62], you can hear the sounds of machine guns from the speaker[93].



357.Press Switch Controls the Sounds of Fire Engine in the Capacitive Coupling(1)

Build the circuit step by step, turn on the switch[62], then press the press switch [61], you will hear the sounds of fire engine from the speaker[93].

358.Magnet Controls the Sounds of Fire Engine in the Capacitive Coupling(1)

Replace the press switch[61] with the reed switch[83], then turn on the switch[62], if you touch the reed switch[83] with magnet[7], you can also hear the sounds of fire engine from the speaker[93].

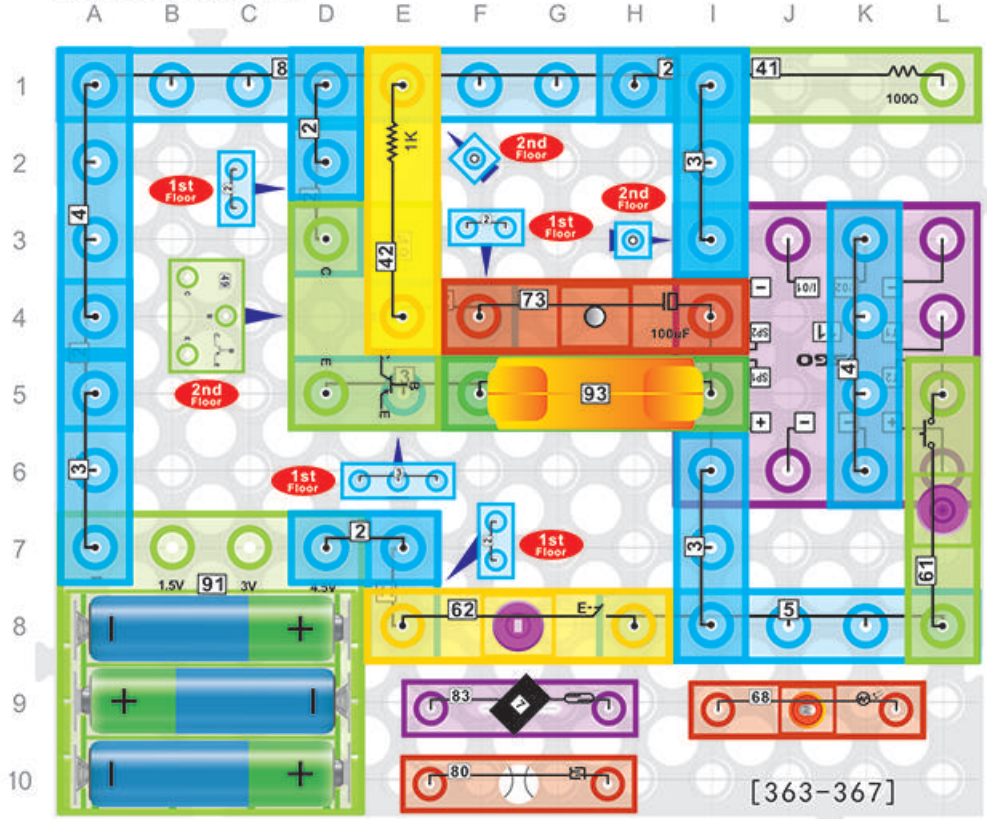
359.Touch Piece Controls the Sounds of Fire Engine in the Capacitive Coupling(1)

Replace the press switch[61] with touch piece[80], then turn on the switch[62], if you touch the touch piece[80] with any sheetmetal now, you can hear the sounds of machine guns for the speaker[93].

360.Light Controls the Sounds of Fire Engine in the Capacitive Coupling(1)
Replace the press switch[61] with photoresistance[68], then turn on the switch[62], you will also hear the sounds of fire engine from the speaker[93].

361.Wire Controls the Sounds of Fire Engine in the Capacitive Coupling(1)
Replace the press switch[61] with wire[4], then turn on the switch[62], you will also hear the sounds of fire engine from the speaker[93].

362.Water Controls the Sounds of Fire Engine in the Capacitive Coupling(1)
Replace the press switch[61] with touch piece[80], if you drop a drop of water on the touch piece[80], then turn on the switch[62], you can hear the sounds of fire engine from the speaker[93].



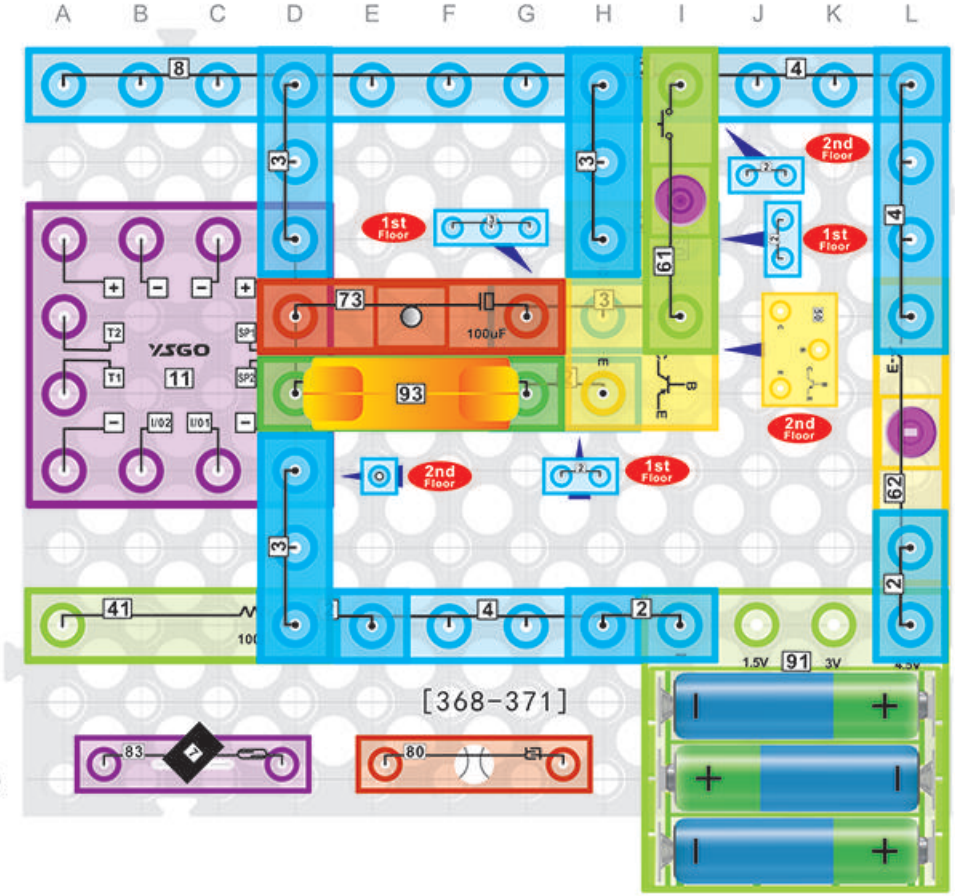
363.Press Controls the Sounds of Space Battle in the Capacitive Coupling(1)
Build the circuit step by step, turn on the switch[62], then press the press switch [61], you will hear the sounds of space battle from the speaker[93].

364.Magnet Controls the Sounds of Space Battle in the Capacitive Coupling(1)
Replace the press switch[61] with the reed switch[83], then turn on the switch[62], if you touch the reed switch[83] with magnet[7], you can also hear the sounds of space battle from the speaker[93]

365.Touch Piece Controls the Sounds of Space Battle in the Capacitive Coupling(1)
Replace the press switch[61] with touch piece[80], then turn on the switch[62], if you touch the touch piece[80] with any sheetmetal now, you can hear the sounds of space battle from the speaker[93].

366.Light Controls the Sounds of Space Battle in the Capacitive Coupling(1)
Replace the press switch[61] with photoresistance[68], then turn on the switch [62], cover the light of photoresistance[68], you will hear the sounds of space battle from the speaker[93].

367.Water Controls the Sounds of Space Battle in the Capacitive Coupling(1)
Replace the press switch[61] with touch piece[80], if you drop a drop of water on the touch piece[80], then turn on the switch[62], you can hear the sounds of space battle from the speaker[93].



368.Press Switch Controls the Volume+ of Police Siren in the Capacitive Coupling(1)
Build the circuit, turn on the switch[62], you will hear the sounds of police siren more loudly, if you press the press switch[61], you will hear the police siren hooting loudly.

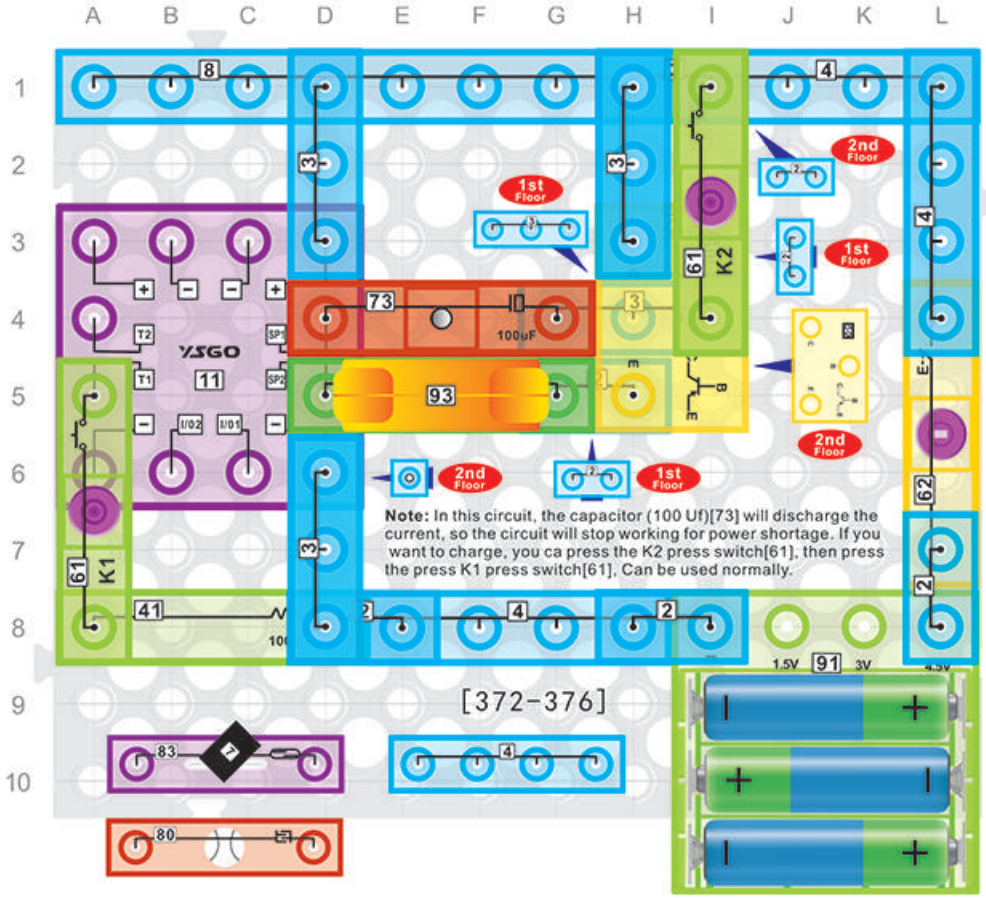
369.Magnet Controls the Volume+ of Police Siren in the Capacitive Coupling(1)
Replace the press switch[61] with the reed switch[83], then turn on the switch[62], if you touch the reed switch[83] with magnet[7], you can also hear the sounds of police siren from the speaker[93].

370.Touch Piece Controls the Volume+ of Police Siren in the Capacitive Coupling(1)

Replace the press switch[61] with touch piece[80], then turn on the switch[62], if you touch the touch piece[80] with any sheetmetal now, you can hear the sounds of police siren from the speaker[93].

371.Water Controls the Volume+ of Police Siren in the Capacitive Coupling(1)

Replace the press switch[61] with touch piece[80], if you drop a drop of water on the touch piece[80], then turn on the switch[62], you can hear the sounds of police siren from the speaker[93].



372.Press Switch Controls the Volume+ of Machine Guns in the Capacitive Coupling(2)

Build the circuit, press the press switch K1[61], then turn on the switch[62], you will hear the shooting sounds of machine guns from the speaker[93].

373.Magnet Controls the Volume+ of Machine Guns in the Capacitive Coupling(2)

Replace the press switch[61] with the reed switch[83], then turn on the switch[62], if you touch the reed switch[83] with magnet[7], you can also hear the shooting sounds of machine guns from the speaker[93].

374.Touch Piece Controls the Volume+ of Machine Guns in the Capacitive Coupling(2)

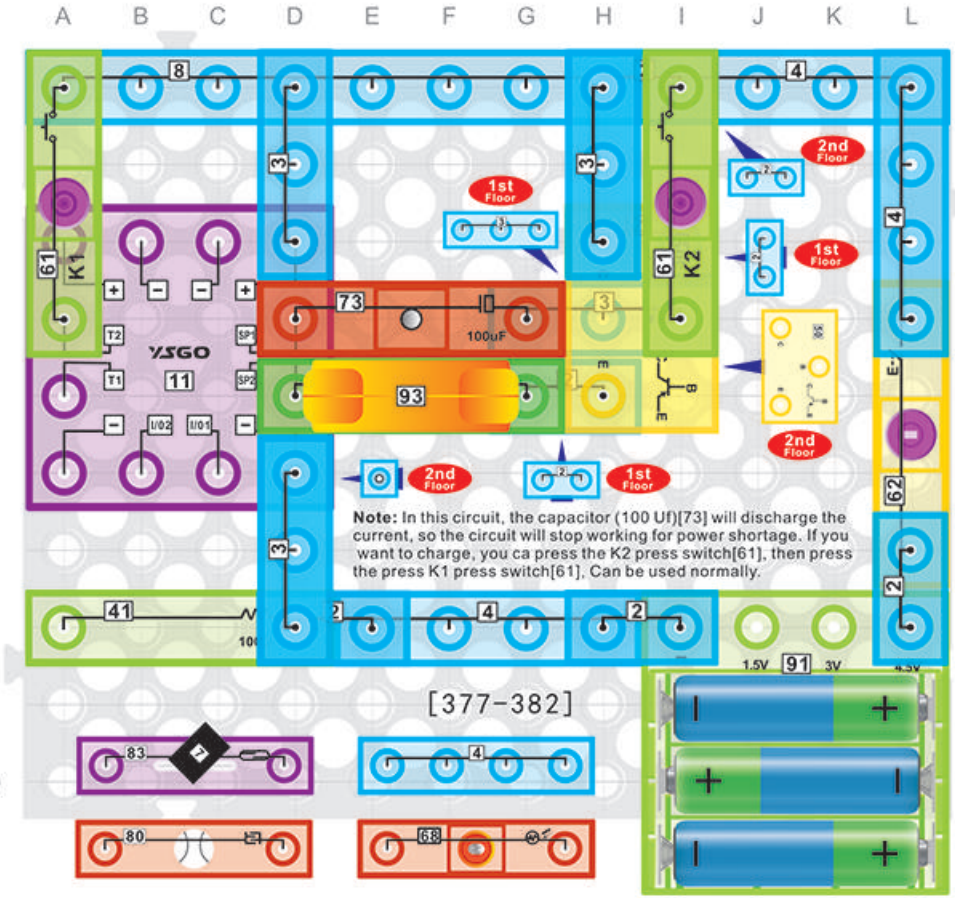
Replace the press switch K2[61] with touch piece[80], then turn on the switch [62], if you touch the touch piece[80] with any sheetmetal now, you can hear the shooting sounds of machine guns from the speaker[93].

375.Wire Controls the Volume+ of Machine Guns in the Capacitive Coupling(2)

Replace the press switch K2[61] with wire[4], then turn on the switch[62], you will also hear the shooting sounds machine guns from the speaker[93].

376.Water Controls the Volume+ of Machine Guns in the Capacitive Coupling(2)

Replace the press switch K2[61] with touch piece[80], if you drop a drop of water on the touch piece[80], then turn on the switch[62], you can hear the shooting sounds of machine guns from the speaker[93].



377.Press Switch Controls the Volume+ of the Sounds of Fire Engine in the Capacitive Coupling (2)

Build the circuit, Press the press switch K1[61], then turn on the switch[62], you will hear the sounds of fire engine from the speaker[93].

378.Magnet Controls the Volume+ of the Sounds of Fire Engine in the Capacitive Coupling (2)
Replace the press switch[61] with the reed switch[83], then turn on the switch[62], if you touch the reed switch[83] with magnet[7], you can also hear the sounds of fire engine from the speaker[93].

379.Touch Piece Controls the Volume+ of the Sounds of Fire Engine in the Capacitive Coupling (2)
Replace the press switch K2[61] with touch piece[80], then turn on the switch[62], if you touch the touch piece[80] with any sheetmetal now, you can hear the sounds of fire engine from the speaker[93].

380.Light Controls the Volume+ of the Sounds of Fire Engine in the Capacitive Coupling (2)
Replace the press switch[61] with photoresistance[68], then turn on the switch[62], cover the light of photoresistance[68], you will hear the sounds of fire engine from the speaker[93].

381.Wire Controls the Volume+ of the Sounds of the Sounds of Fire Engine in the Capacitive Coupling (2)
Replace the press switch K2[61] with wire[4], then turn on the switch[62], you will also hear the sounds of fire engine from the speaker[93].

382.Water Controls the Volume+ of the Sounds of Fire Engine in the Capacitive Coupling (2)
Replace the press switch K2[61] with touch piece[80], if you drop a drop of water on the touch piece[80], then turn on the switch[62], you can hear the sounds of fire engine from the speaker[93].

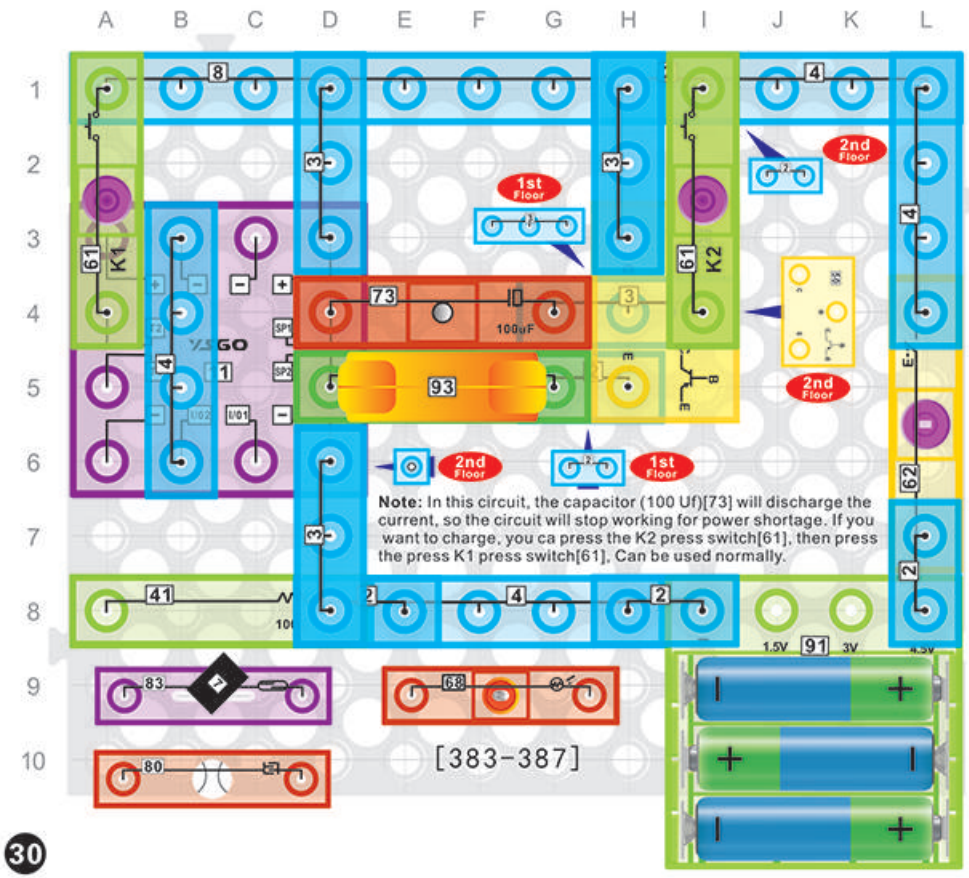
383.Press Switch Controls the Volume+ of Space Battle in the Capacitive Coupling (2)
Build the circuit, Press the press switch K1[61], then turn on the switch[62], you will hear the sounds of space battle from the speaker[93].

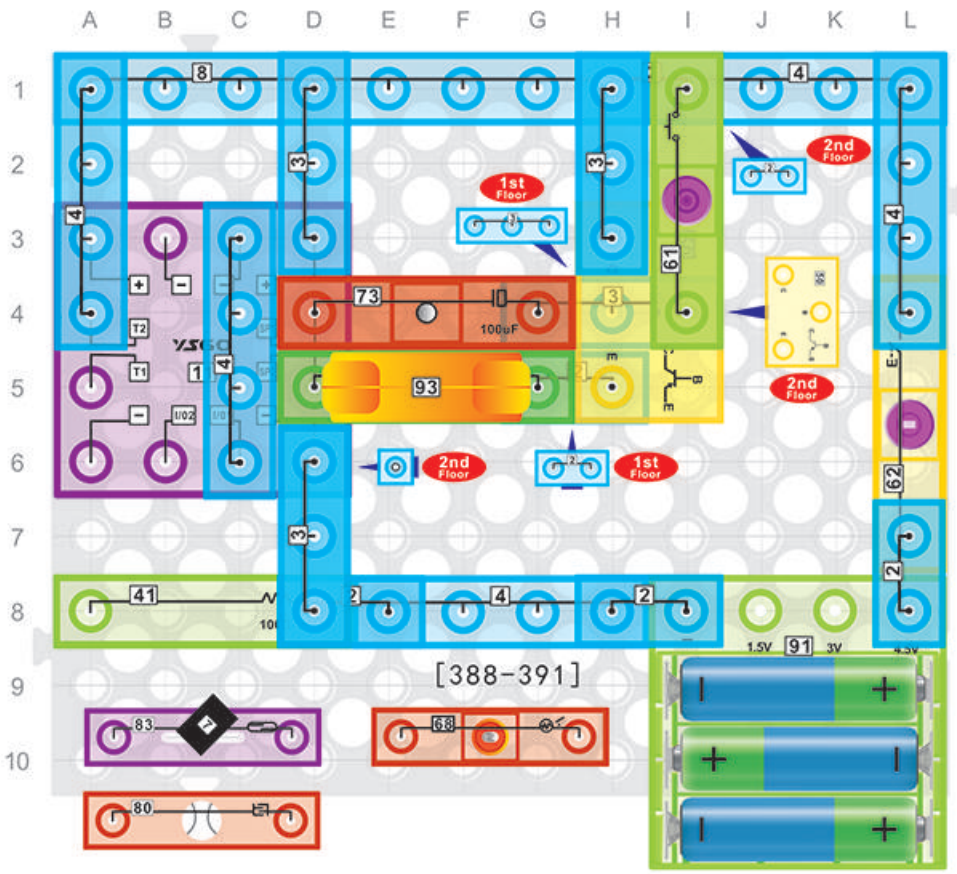
384.Magnet Controls the Volume+ of Space Battle in the Capacitive Coupling (2)
Replace the press switch[61] with the reed switch[83], then turn on the switch[62], if you touch the reed switch[83] with magnet[7], you can also hear the sounds of space battle from the speaker[93].

385.Touch Piece Controls the Volume+ of Space Battle in the Capacitive Coupling (2)
Replace the press switch K2[61] with touch piece[80], then turn on the switch[62], if you touch the touch piece[80] with any sheetmetal now, you can hear the sounds of space battle from the speaker[93].

386.Light Controls the Volume+ of Space Battle in the Capacitive Coupling (2)
Replace the press switch[61] with photoresistance[68], then turn on the switch[62], cover the light of photoresistance[68], you will hear the sounds of space battle from the speaker[93].

387.Water Controls the Volume+ of Space Battle in the Capacitive Coupling (2)
Replace the press switch K2[61] with touch piece[80], if you drop a drop of water on the touch piece[80], then turn on the switch[62], you can hear the sounds of space battle from the speaker[93].



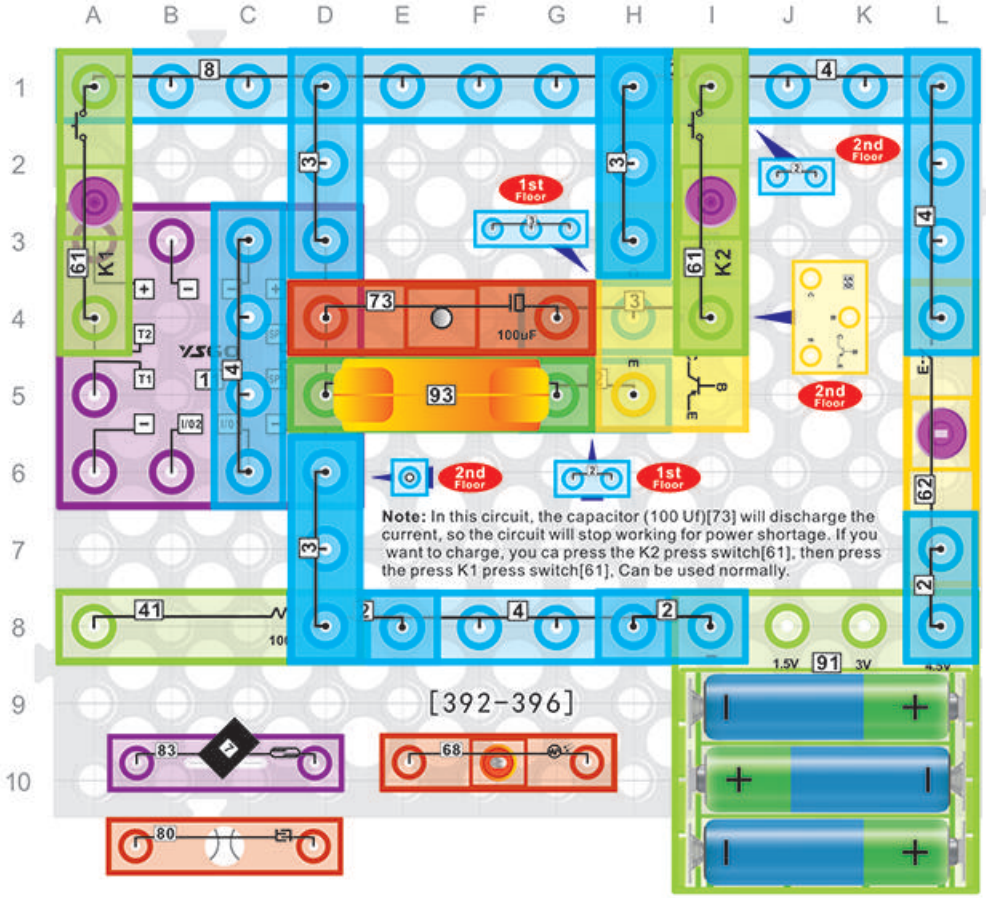


388.Switch Controls the Volume+ of the Music in the Capacitive Coupling (2)
Build the circuit step by step, then turn on the switch[62], you will hear the music from the speaker[93]. Disconnect the switch[62], the music will be off.

389.Press Switch Controls the Volume+ of the Music in the Capacitive Coupling (2)
Replace the switch[62] with the press switch[61], press the press switch[61], you will hear the music from the speaker[93]. Release the press switch[61], the music will be off.

390.Magnet Controls the Volume+ of the Music in the Capacitive Coupling (2)
Replace the switch[62] with the reed switch[83], then turn on the switch[62], if you touch the reed switch[83] with magnet[7], you can also hear the music from the speaker[93].

391.Touch Piece Controls the Volume+ of the Music in the Capacitive Coupling (2)
Replace the switch[62] with touch piece[80], then turn on the switch[62], if you touch the touch piece[80] with any sheetmetal now, you can hear the music from the speaker[93].



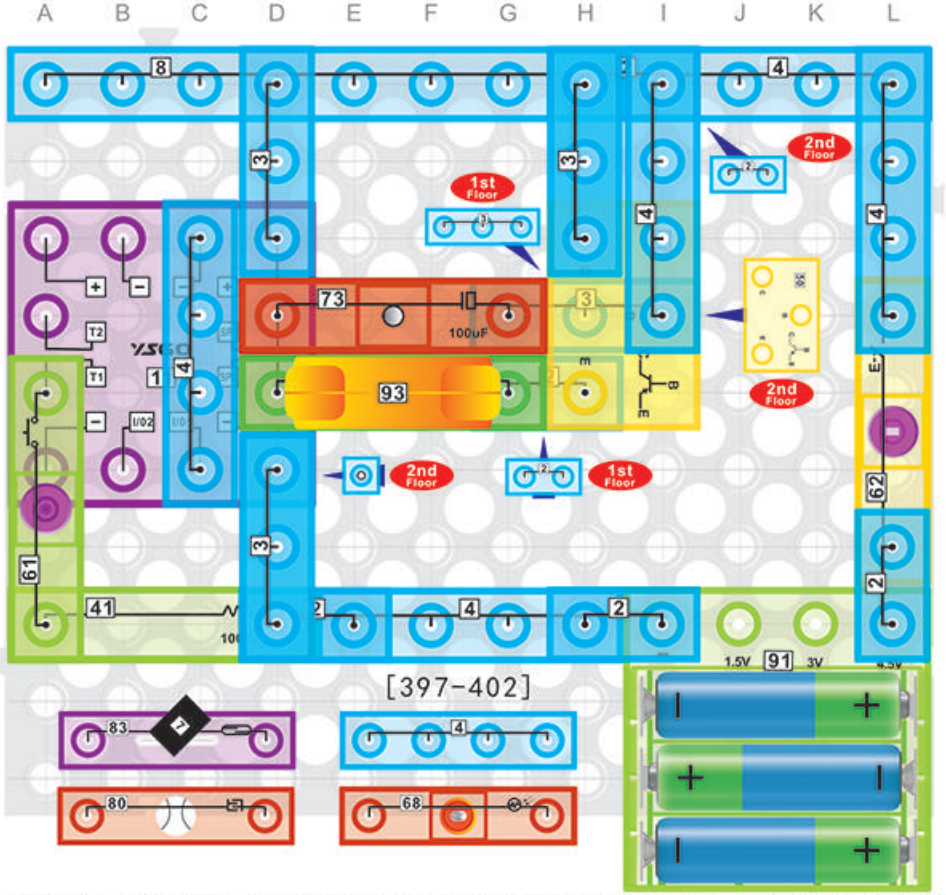
392.Press Switch Controls the Volume+ of the Music in the Capacitive Coupling (3)
Build the circuit step by step, then turn on the switch[62], now you can hear the music from the speaker[93], then it will stop later. If you press tightly on the press switch K1 [61], the music will be on again.

393.Magnet Controls the Volume+ of the Music in the Capacitive Coupling (3)
Replace the press switch[61] with the reed switch[83], then turn on the switch[62], the music will stop playing later, if you touch the reed switch[83] with magnet[7], the music will be heard again from the speaker[93].

394.Touch Piece Controls the Volume+ of the Music in the Capacitive Coupling (3)
Replace the press switch K2[61] with touch piece[80], then turn on the switch[62]. Wait until the music is stop, then touch the touch piece[80] with any sheetmetal now, you can hear the music from the speaker[93] again.

395.Light Controls the Volume+ of the Music in the Capacitive Coupling (3)
Replace the press switch K2[61] with photoresistance[68], then turn on the switch [62], you can hear the music from the speaker[93] now.

396.Water Controls the Volume+ of the Music in the Capacitive Coupling (3)
Replace the press switch K2[61] with touch piece[80], then turn on the switch[62], if you drop a drop of water on the touch piece[80] now, you can hear the music from the speaker[93].



397.Press Switch Controls the Circle Play of the Music in the Capacitive Coupling(2)
Build the circuit, turn on the switch[62], you can hear the music from the speaker [93], and it will stop later. If you want to turn on the music again, you just need to press tightly on the press switch[61].

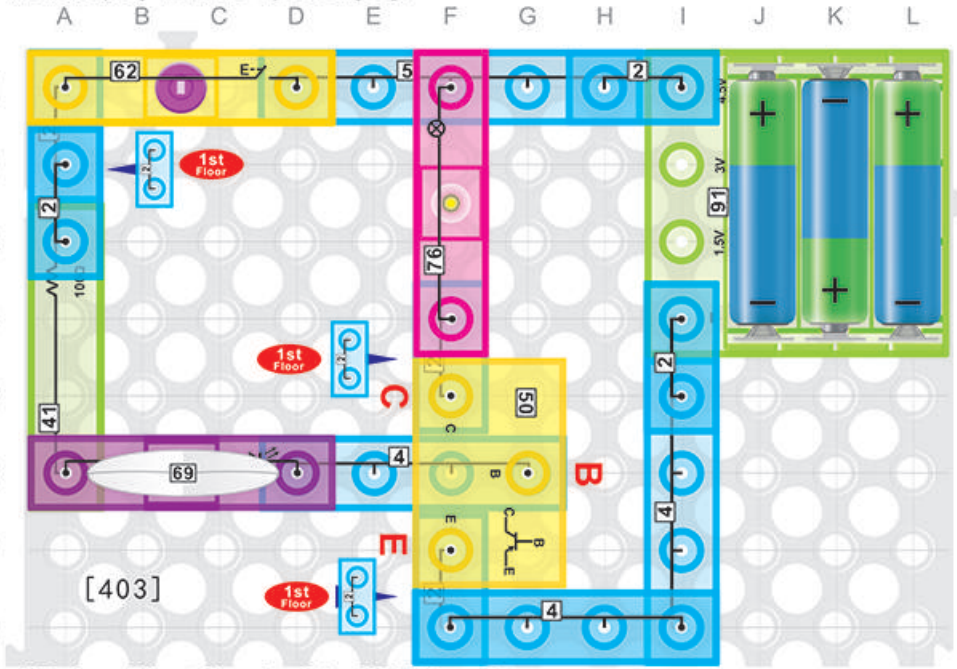
398.Magnet Controls the Circle Play of the Music in the Capacitive Coupling(2)
Replace the press switch[61] with the reed switch[83], then turn on the switch[62], keep magnet[7] touched the reed switch[83], you will hear the Birthday Song from the Speaker[93] again and again.

399.Touch Piece Controls the Circle Play of the Music in the Capacitive Coupling(2)
Replace the press switch[61] with touch piece[80], turn on the switch[62], if you touch the touch piece[80] with any sheetmetal now, you can hear the Birthday Song in circle play too.

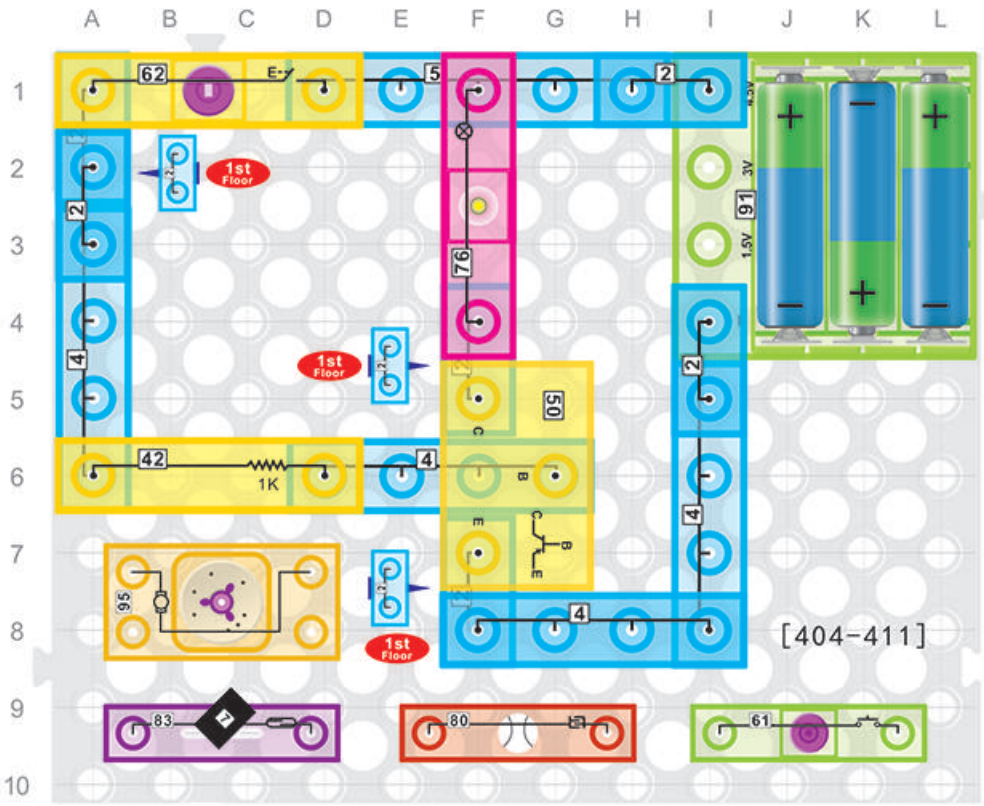
400.Wire Controls the Circle Play of the Music in the Capacitive Coupling(2)
Replace the press switch[61] with wire[4], turn on the switch[62], you can hear the Birthday Song in circle play.

401.Light Controls the Circle Play of the Music in the Capacitive Coupling(2)
Replace the press switch[61] with photoresistance[68], then turn on the switch[62], now you can also hear the Birthday Song in circle play from the speaker[93].

402.Water Controls the Circle Play of the Music in the Capacitive Coupling(2)
Replace the press switch[61] with touch piece[80], then turn on the switch[62], if you drop a drop of water on the touch piece[80], you will hear the Birthday Song in circle play from the speaker[93].



403. Amplifier Circuit of the NPN Transistor
A transistor has three electrodes, the base B, the emitter E, and the collector C. In the transistor, if there is small flow of current of the transistor that pass through the base B, the emitter E and the collector C will convey with more current. This is the amplification of the transistor. Build the circuit step by step, then turn on the switch[62], you can see the LED[69] and lamp[76] is on at the same time. In this circuit, the current through the transistor is limited by the (100 Ω) resistor[41], so the current through the LED[69] is small. With the amplification of the transistor, the current though the lamp[76] is more.



404.Switch Controls the Lamp and NPN Transistor (1)
Build the circuit, the lamp[76] is still off, right. Turn on the switch[62], you can see the lamp[76] is on now. Disconnect the switch[62], the lamp[76] will be off.

405.Press Switch Controls the Lamp and NPN Transistor (1)
Replace the switch[62] with the press switch[61], if you press the press switch[61], the lamp[76] will be on. Release the press switch[61], the lamp[76] will be off.

406.Magnet Controls the Lamp and NPN Transistor (1)
Replace the switch[62] with the reed switch[83], touch the reed switch[83] with magnet[7], you can see the lamp[76] is on. Move away the magnet[7], the lamp [76] will be off.

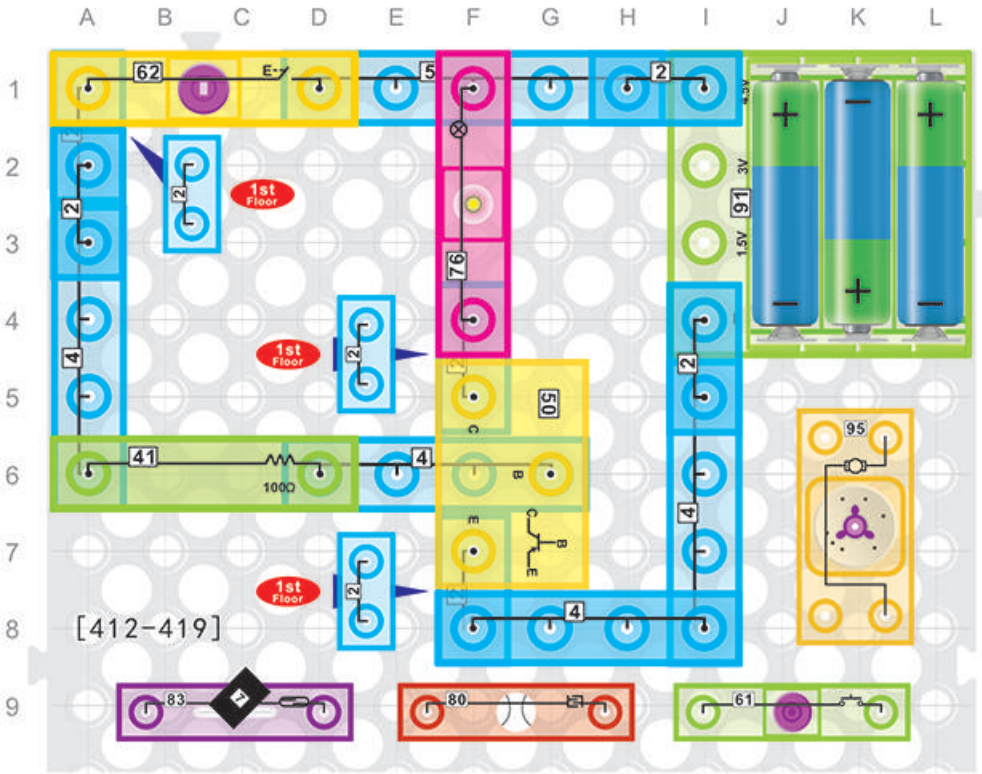
407.Touch Piece Controls the Lamp and NPN Transistor (1)
Replace the switch[62] with touch piece[80], if you touch the touch piece[80] with any sheetmetal, the lamp[76] will be on. Move away the sheetmetal, the lamp[76] will be off.

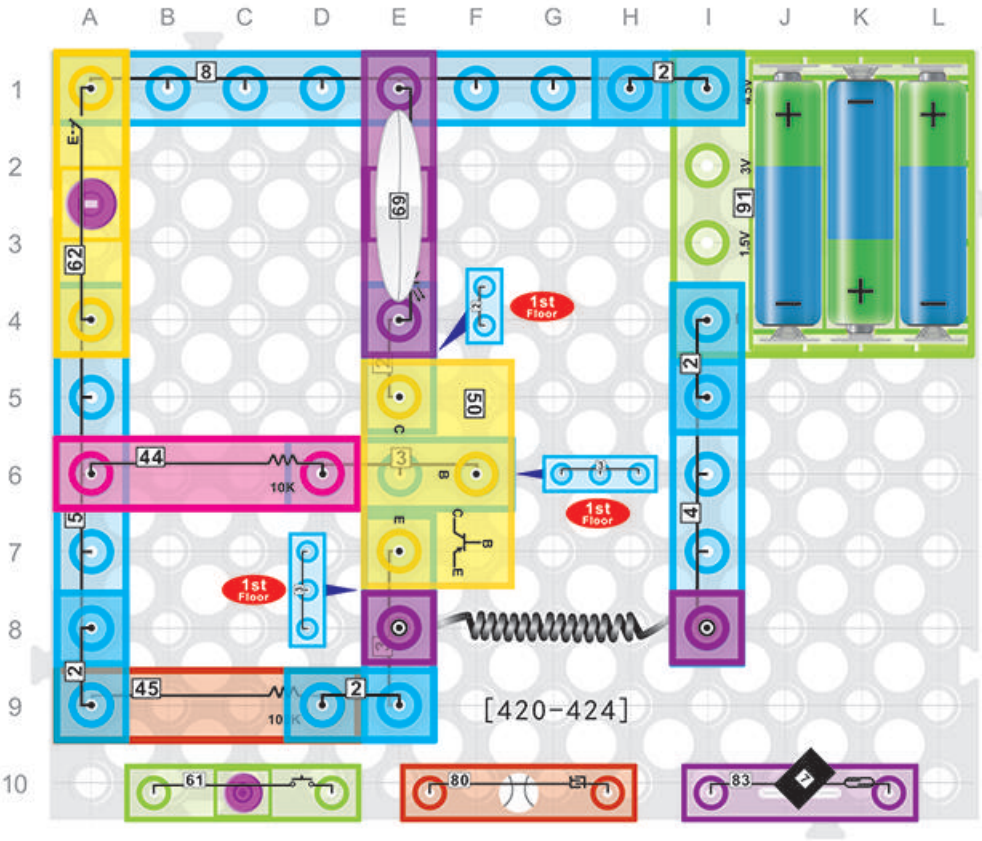
408. Switch Controls the Fan and NPN Transistor (1)

409. Press Switch Controls the Fan and NPN Transistor (1)

410.Magnet Controls the Fan and NPN Transistor (1)

411.Touch Piece Controls the Fan and NPN Transistor (1)
408-411, you just need to replace the lamp[76] with the motor[95] in the circuit of 404-407, then install the fan blade in the motor[95].





412. Switch Controls the Lamp and NPN Transistor (2)
Build the circuit, the lamp[76] is still off, right. Turn on the switch[62], you can see the lamp[76] is on now. Disconnect the switch[62], the lamp[76] will be off.

413.Press Switch Controls the Lamp and NPN Transistor (2)
Replace the switch[62] with the press switch[61], if you press the press switch[61], the lamp[76] will be on. Release the press switch[61], the lamp[76] will be off.

414.Magnet Controls the Lamp and NPN Transistor (2)
Replace the switch[62] with the reed switch[83], touch the reed switch[83] with magnet[7], you can see the lamp[76] is on. Move away the magnet[7], the lamp [76] will be off.

415.Touch Piece Controls the Lamp and NPN Transistor (2)
Replace the switch[62] with touch piece[80], if you touch the touch piece[80] with any sheetmetal, the lamp[76] will be on. Move away the sheetmetal, the lamp[76] will be off.

416. Switch Controls the Fan and NPN Transistor (2)

417.Press Switch Controls the Fan and NPN Transistor (2)

418.Magnet Controls the Fan and NPN Transistor (2)

419.Touch Piece Controls the Fan and NPN Transistor (2)
416-419, just replace the lamp[76] with the motor[95] in the circuit of 412-415, then install the fan blade[60] in the motor[95].

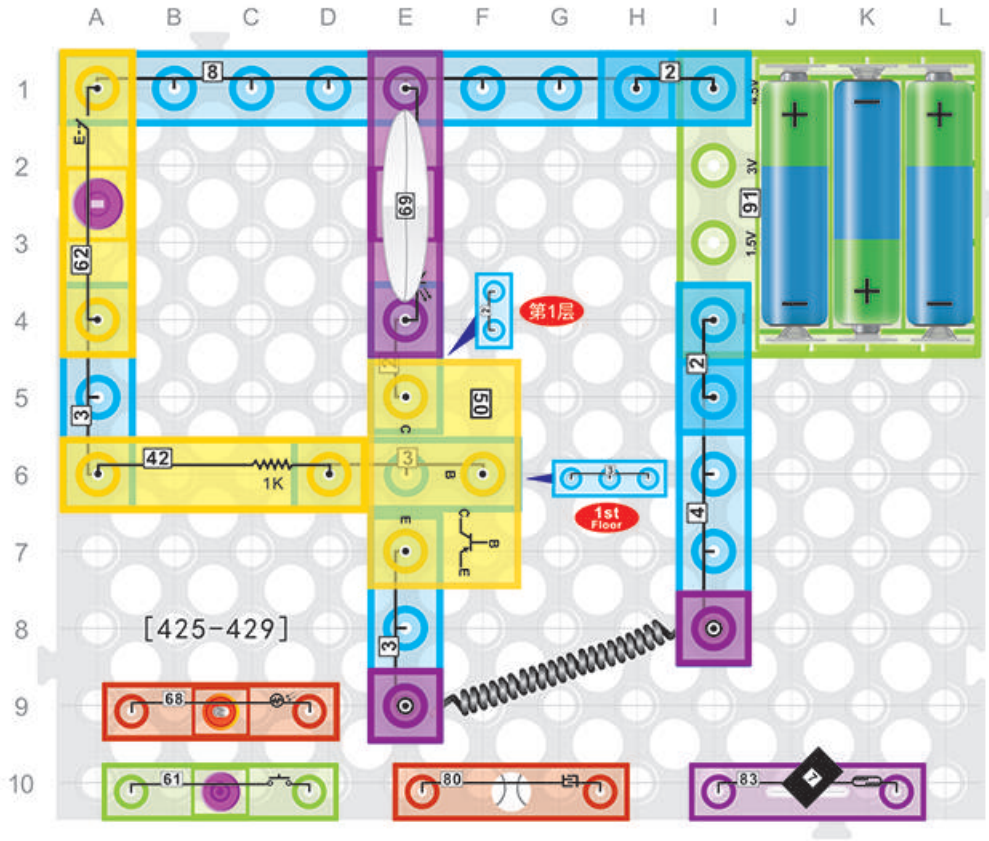
420. Switch Controls the LED and NPN Transistor (1)
Build the circuit, then turn on the switch[62], you can see LED[69] is on. Disconnect the switch[62], LED[69] will be off.

421.Press Switch Controls the LED and NPN Transistor (1)
Replace the switch[62] with the press switch[61], then press it(press switch[61]), now LED[69] is on.

422.Magnet Controls the LED and NPN Transistor (1)
Replace the switch[62] with the reed switch[83], touch the reed switch[83] with magnet[7], you can see the LED[69] is shining.

423.Touch Piece Controls the LED and NPN Transistor (1)
Replace the switch[62] with the touch piece[80], if you touch the touch piece[80] with any sheetmetal, you can see LED[69] is lighten up.

424.Light Controls the LED and NPN Transistor (1)
Replace the switch[62] with the photoresistance[68], you will see LED[69] is on. If you cover the light of the photoresistanc[68], the LED[69] will be dimmer.



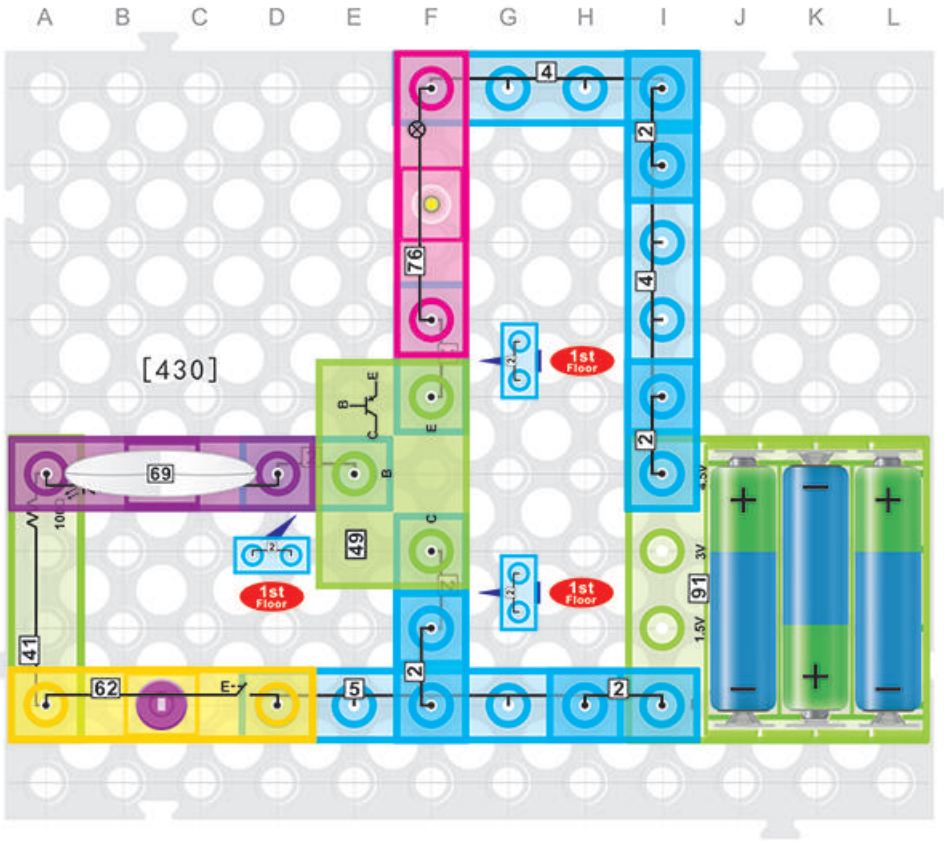
425. Switch Controls the LED and NPN Transistor (2)
Build the circuit, then turn on the switch[62], you can see LED[69] is on. Disconnect the switch[62], LED[69] will be off.

426. Press Switch Controls the LED and NPN Transistor (2)
Replace the switch[62] with the press switch[61], then press it(press switch[61]), now LED[69] is on.

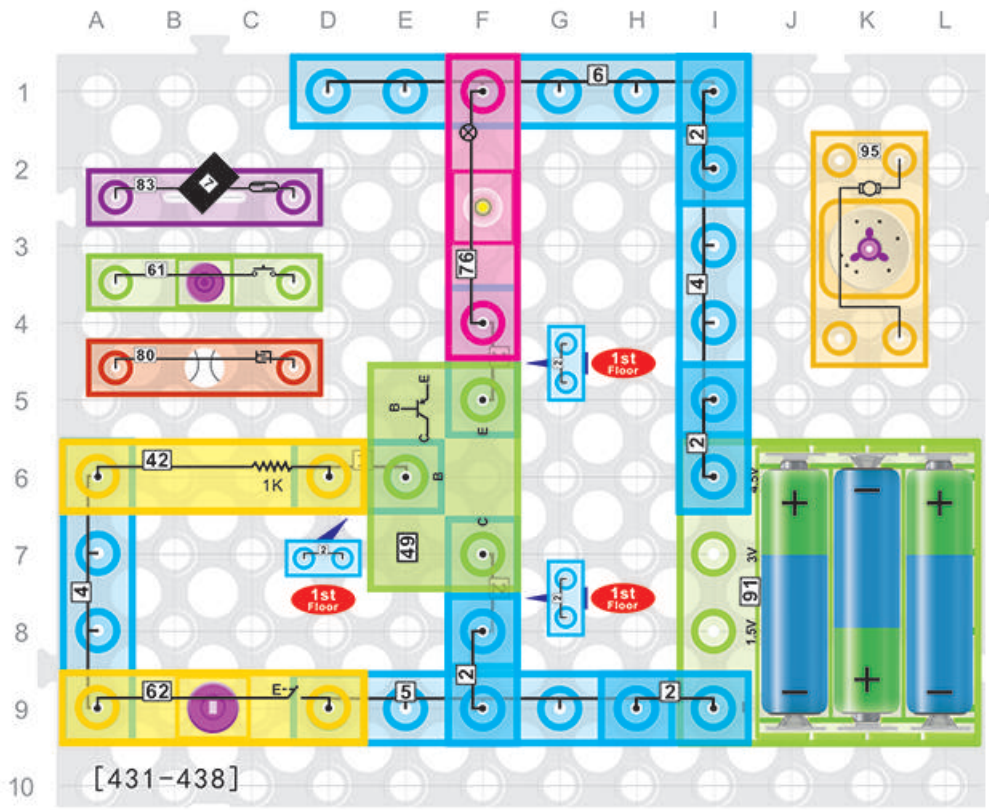
427. Magnet Controls the LED and NPN Transistor (2)
Replace the switch[62] with the reed switch[83], touch the reed switch[83] with magnet[7], you can see the LED[69] is shining.

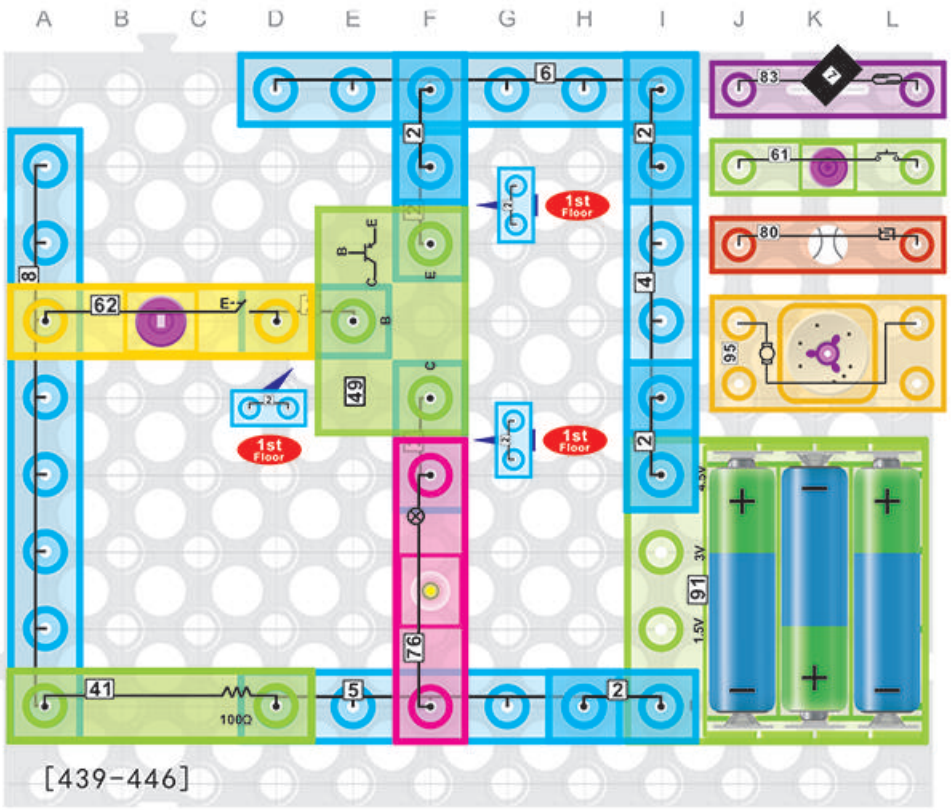
428.Touch Piece Controls the LED and NPN Transistor (2)
Replace the switch[62] with the touch piece[80], if you touch the touch piece[80] with any sheetmetal, you can see LED[69] is lighten up.

429.Light Controls the LED and NPN Transistor (2)
Replace the switch[62] with the photoresistance[68], you will see LED[69] is on. If you cover the light of the photoresistance[68], the LED[69] will be dimmer.



430. Amplifier Circuit of the PNP Transistor
A transistor can be divided into NPN transistor and PN transistor according to its PN junction. This is called amplifier circuit of the PNP Transistor. Build the circuit step by step, you will light up LED[69] and the lamp[76] at the same time. Due to the emitter E and the collector C, the lamp[76] can be light up too. Without the transistor, the current through the base B of is too small to let it (lamp[76]) work.





431. Switch Controls the Lamp and PNP Transistor (1)
Build the circuit, then turn on the switch[62], you can see the lamp[76] is on. Disconnect the switch[62], the lamp[76] will be off.

432.Press Switch Controls the Lamp and PNP Transistor (1)
Replace the switch[62] with the press switch[61], can you see the lamp[76] is on ? Not yet. If you want to turn on the lamp[76], you just need to press the press switch [61]. Release it, the lamp[76] will be off.

433. Magnet Controls the Lamp and PNP Transistor (1)
Replace the switch[62] with the reed switch[83], if you touch the reed switch[83] with magnet[7], the lamp[76] will be light up. Move away the magnet[7], the lamp [76] will be off.

434.Touch Piece Controls the Lamp and PNP Transistor (1)
Replace the switch[62] with the touch piece[80], if you touch the touch piece[80] with any sheetmetal, the lamp[76] will be on. Move away the sheetmetal, the lamp[76] will be off.

435. Switch Controls the Fan and PNP Transistor (1)

436. Switch Controls the Fan and PNP Transistor (1)

437.Magnet Controls the Fan and PNP Transistor (1)

438.Touch Piece Controls the Fan and PNP Transistor (1)
435-438, you just need to replace the lamp[76] with motor[95] in the circuit of 431-434, then install the fan blade[60] in the motor[95].

439. Switch Controls the Lamp and PNP Transistor (2)
Build the circuit, then turn on the switch[62], you can see the lamp[76] is on. Disconnect the switch[62], the lamp[76] will be off.

440.Press Switch Controls the Lamp and PNP Transistor (2)
Replace the switch[62] with the press switch[61], can you see the lamp[76] is on ? Not yet. If you want to turn on the lamp[76], you just need to press the press switch[61]. Release it, the lamp[76] will be off.

441. Magnet Controls the Lamp and PNP Transistor (2)
Replace the switch[62] with the reed switch[83], if you touch the reed switch[83] with magnet[7], the lamp[76] will be light up. Move away the magnet[7], the lamp [76] will be off.

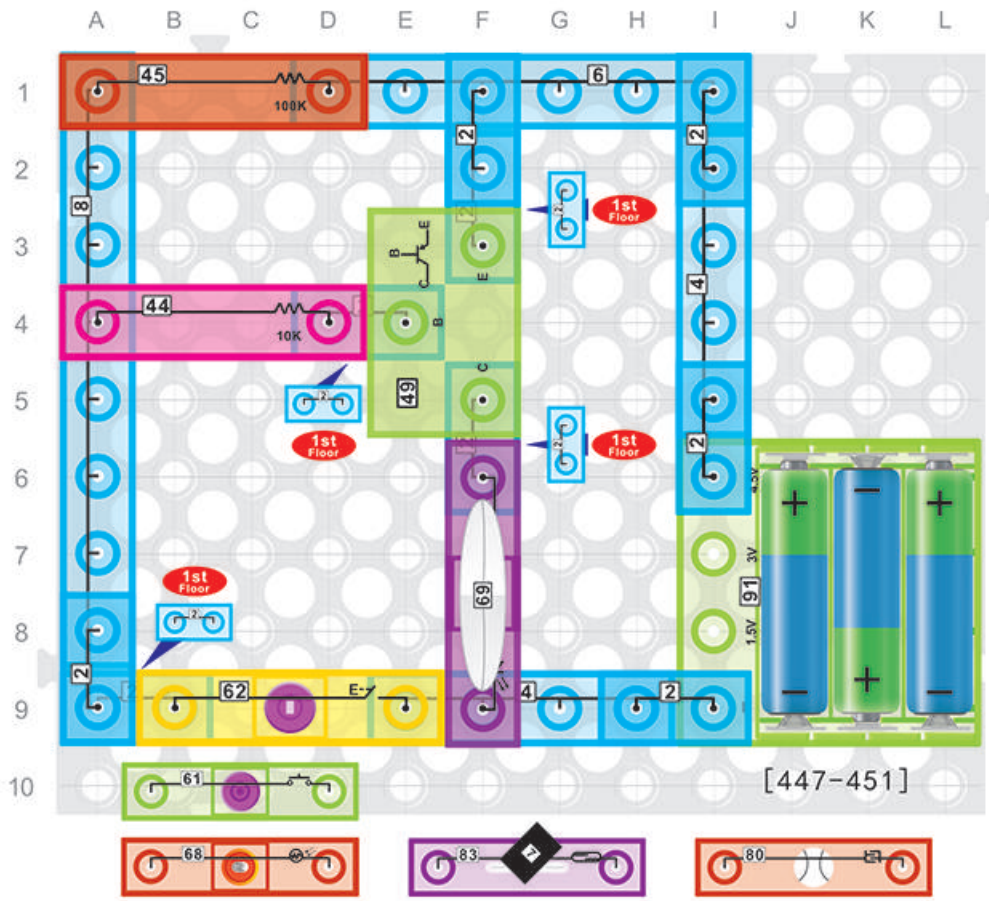
442.Touch Piece Controls the Lamp and PNP Transistor (2)
Replace the switch[62] with the touch piece[80], if you touch the touch piece[80] with any sheetmetal, the lamp[76] will be on. Move away the sheetmetal, the lamp [76] will be off.

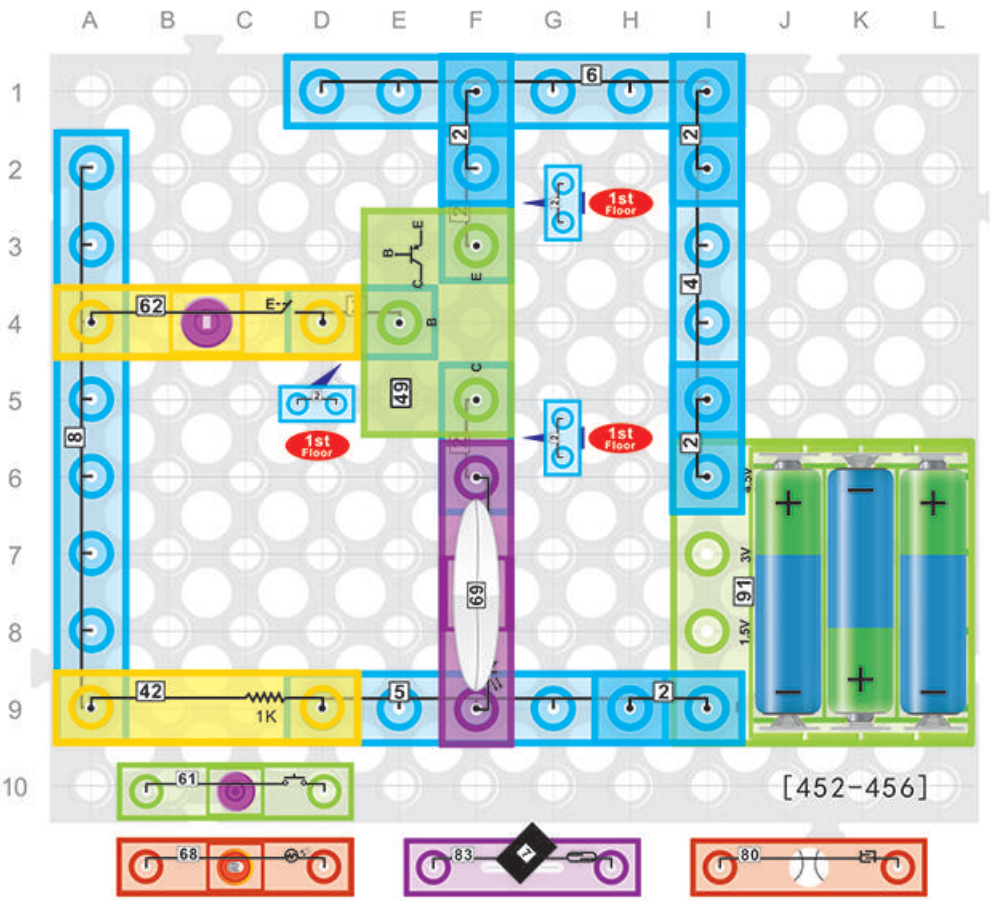
443.Switch Controls the Fan and PNP Transistor (2)

444. Switch Controls the Fan and PNP Transistor (2)

445.Magnet Controls the Fan and PNP Transistor (2)

446.Touch Piece Controls the Fan and PNP Transistor (2)
443-446, you just need to replace the lamp[76] with motor[95] in the circuit of 439-442, then install the fan blade[60] in the motor[95].





447. Switch Controls the LED and PNP Transistor (1)
Build the circuit, then turn on the switch[62], you can see LED[69] is on. Disconnect the switch[62], LED[69] will be off.

448. Press Switch Controls the LED and PNP Transistor (1)
Replace the switch[62] with the press switch[61], then press it(press switch[61]), now LED[69] is on.

449. Magnet Controls the LED and PNP Transistor (1)
Replace the switch[62] with the reed switch[83], touch the reed switch[83] with magnet[7], you can see the lamp[76] is shining.

450.Touch Piece Controls the LED and PNP Transistor (1)
Replace the switch[62] with the touch piece[80], if you touch the touch piece[80] with any sheetmetal, you can see LED[69] is lighten up.

451.Light Controls the LED and PNP Transistor (1)
Replace the switch[62] with the photoresistance[68], you will see LED[69] is on. If you cover the light of the photoresistance[68], the LED[69] will be dimmer.

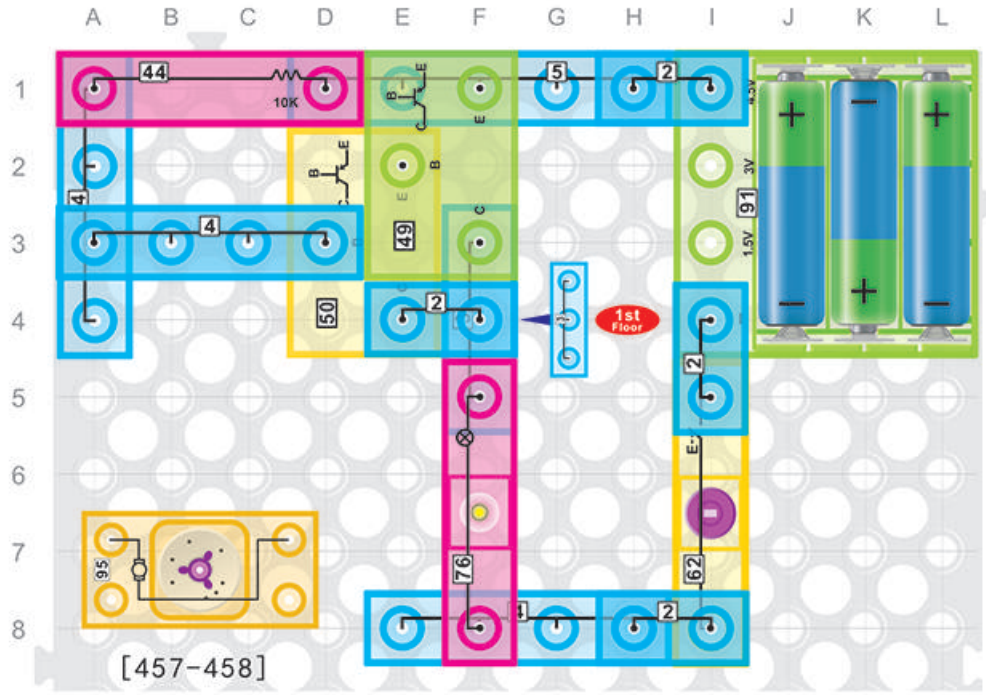
452.Switch Controls the LED and PNP Transistor (2)
Build the circuit, then turn on the switch[62], you can see LED[69] is on. Disconnect the switch[62], LED[69] will be off.

453. Press Switch Controls the LED and PNP Transistor (2)
Replace the switch[62] with the press switch[61], then press it(press switch[61]), now LED[69] is on.

454. Magnet Controls the LED and PNP Transistor (2)
Replace the switch[62] with the reed switch[83], touch the reed switch[83] with magnet[7], you can see the lamp[76] is shining.

455.Touch Piece Controls the LED and PNP Transistor (2)
Replace the switch[62] with the touch piece[80], if you touch the touch piece[80] with any sheetmetal, you can see LED[69] is lighten up.

456.Light Controls the LED and PNP Transistor (2)
Replace the switch[62] with the photoresistance[68], you will see LED[69] is on. If you cover the light of the photoresistance[68], the LED[69] will be dimmer.



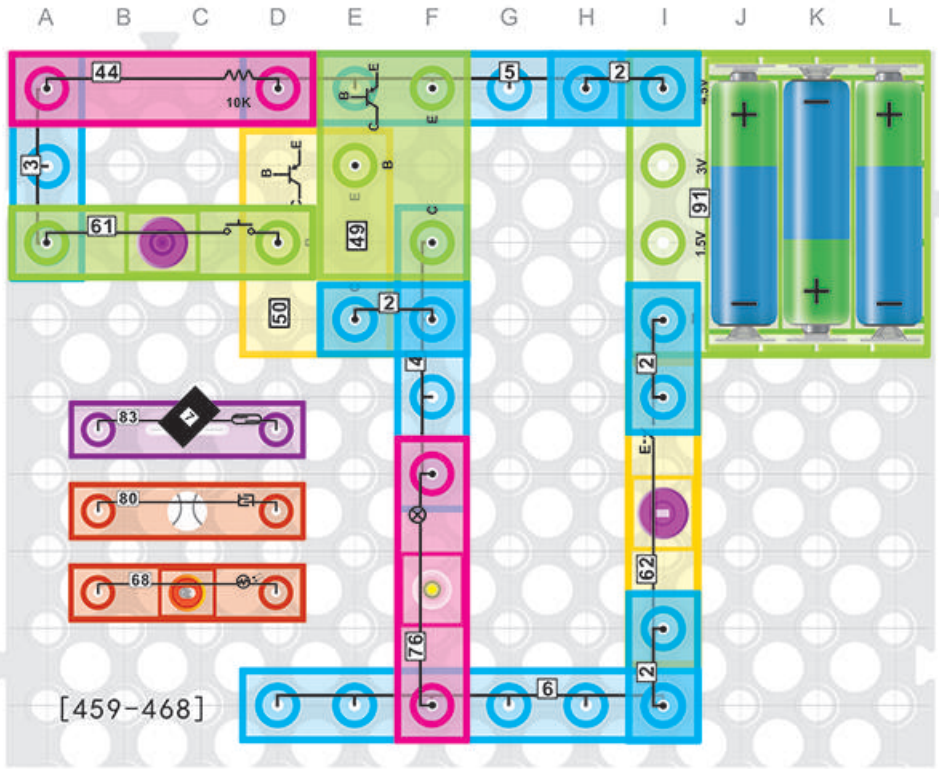
457. Switch Controls the Lamp in the Amplifier Circuit of Composite Pipe (1)
Build the circuit, then turn on the switch[62], you can see the lamp[76] is on. Disconnect the switch[62], the lamp[76] will be off.

458. Switch Controls the Motor in the Amplifier Circuit of Composite Pipe (1)
Replace the lamp[76] with the motor[95], install the fan blade[60], then turn on the switch[62], you will see the motor[95] start running. Disconnect the switch[62], the motor[95] will be stopped.

459.Press Switch Controls the Lamp in the Circuit of Composite Pipe (1)
Build the circuit, then turn on the switch[62], can you see the lamp[76] is on ? Not yet. If you want to turn on the lamp[76], you just need to press the press switch[61]. Release it, the lamp[76] will be off.

460.Magnet Controls the Lamp in the Circuit of Composite Pipe (1)
Replace the press switch[61] with the reed switch[83], if you touch the reed switch [83] with magnet[7], the lamp[76] will be light up. Move away the magnet[7], the lamp[76] will be off.

461.Touch Piece Controls the Lamp in the Circuit of Composite Pipe (1)
Replace the press switch[61] with the touch piece[80], if you touch the touch piece [80] with any sheetmetal, the lamp[76] will be on. Move away the sheetmetal, the lamp[76] will be off.



462.Light Controls the Lamp in the Circuit of Composite Pipe (1)
Replace the press switch[61] with the photoresistance[68], then turn on the switch [62], the lamp[76] will be on. If you cover the light of the photoresistance[68] with your hands, the lamp[76] will be off.

463.Water Controls the Lamp in the Circuit of Composite Pipe (1)
Replace the press switch[61] with touch piece[80], if you drop a drop of water on the touch piece[80] now, the lamp[76] will be on.

464.Press Switch Controls the Fan in the Circuit of Composite Pipe (1)

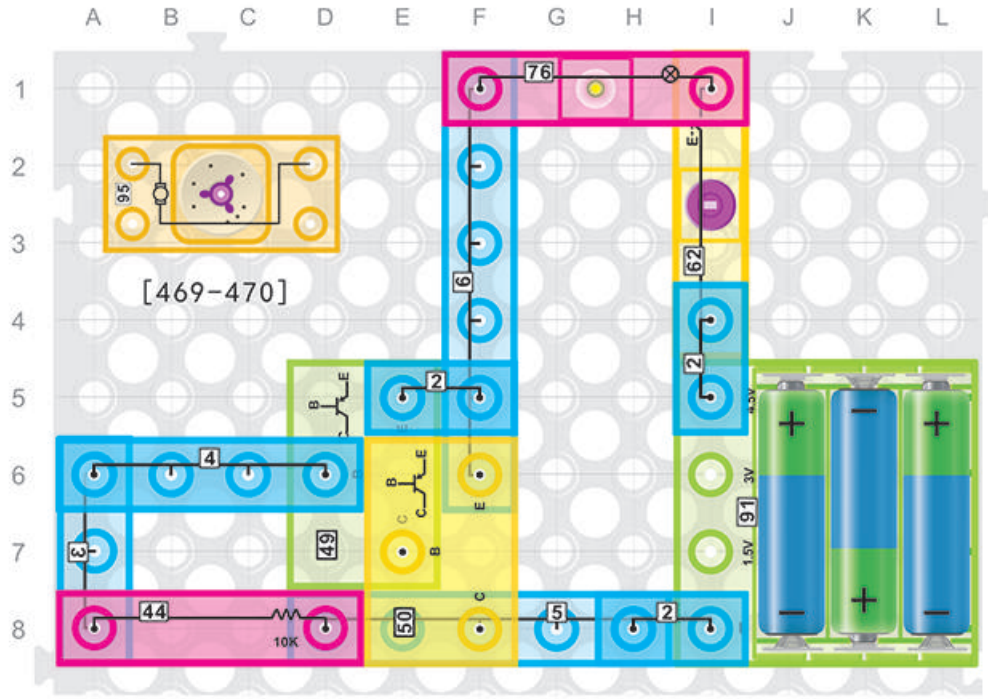
465.Magnet Controls the Fan in the Circuit of Composite Pipe (1)

466.Touch Piece Controls the Fan in the Circuit of Composite Pipe (1)

467.Light Controls the Fan in the Circuit of Composite Pipe (1)

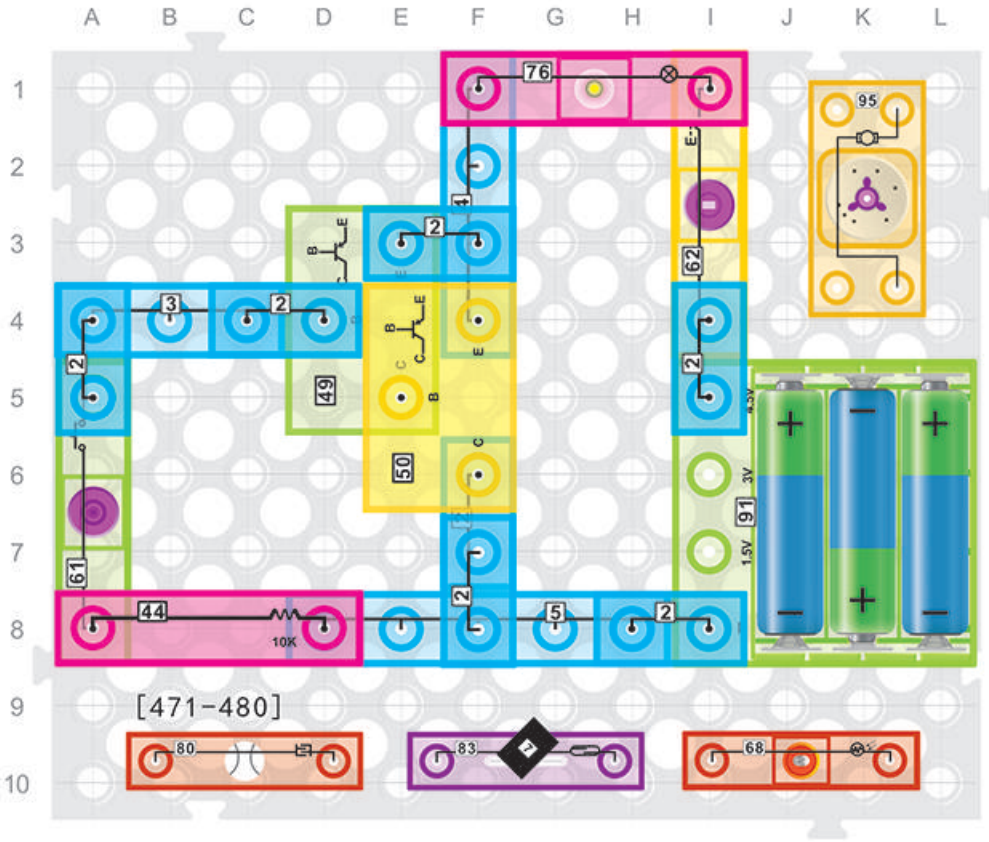
468.Water Controls the Fan in the Circuit of Composite Pipe (1)

464-468, you just need to replace the lamp[76] with the motor[95] in the circuit of 459-463, then install the fan blade[60] in the motor[95].

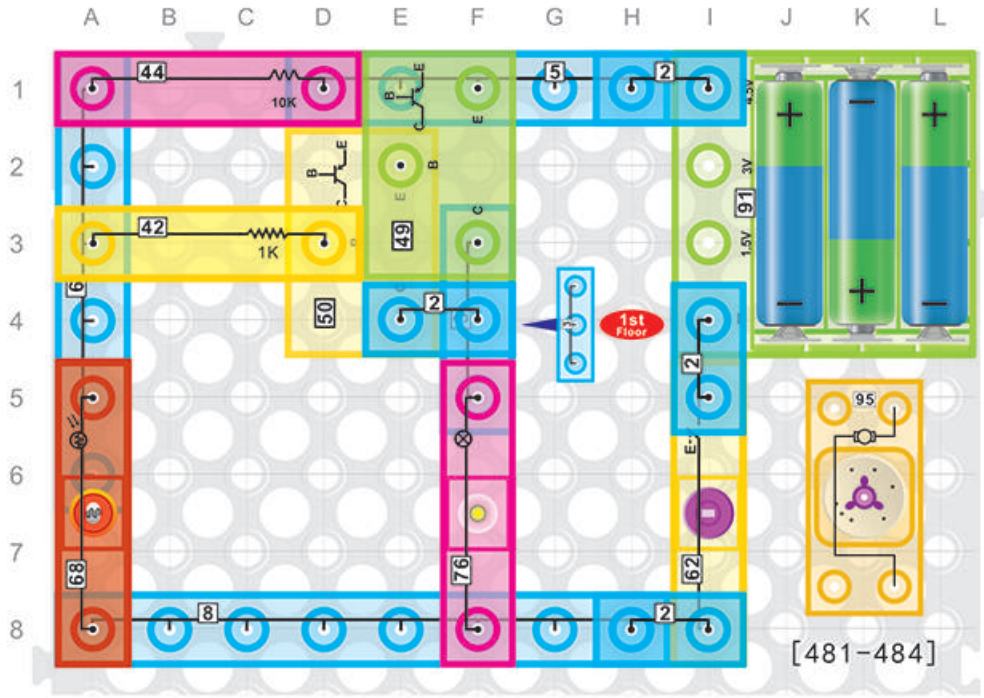


469. Switch Controls the Lamp in the Amplifier Circuit of Composite Pipe (2)
Build the circuit, then turn on the switch[62], you can see the lamp[76] is on. Disconnect the switch[62], the lamp[76] will be off.
470. Switch Controls the Motor in the Amplifier Circuit of Composite Pipe (2)
Replace the lamp[76] with the motor[95], install the fan blade[60], then turn on the switch[62], you will see the motor[95] start running. Disconnect the switch[62], the motor[95] will be stopped.

471.Press Switch Controls the Lamp in the Circuit of Composite Pipe (2)
Build the circuit, then turn on the switch[62], can you see the lamp[76] is on ? Not yet. If you want to turn on the lamp[76], you just need to press the press switch[61]. Release it, the lamp[76] will be off.
472.Magnet Controls the Lamp in the Circuit of Composite Pipe (2)
Replace the press switch[61] with the reed switch[83], if you touch the reed switch[83] with magnet[7], the lamp[76] will be light up. Move away the magnet [7], the lamp[76] will be off.
473.Touch Piece Controls the Lamp in the Circuit of Composite Pipe (2)
Replace the press switch[61] with the touch piece[80], if you touch the touch piece[80] with any sheetmetal, the lamp[76] will be on. Move away the sheetmetal, the lamp[76] will be off.



474.Light Controls the Lamp in the Circuit of Composite Pipe (2)
Replace the press switch[61] with the photoresistance[68], then turn on the switch[62], the lamp[76] will be on. If you cover the light of the photoresistance [68] with your hands, the lamp[76] will be off.
475.Water Controls the Lamp in the Circuit of Composite Pipe (2)
Replace the press switch[61] with touch piece[80], if you drop a drop of water on the touch piece[80] now, the lamp[76] will be on.
476.Press Switch Controls the Fan in the Circuit of Composite Pipe (2)
477.Magnet Controls the Fan in the Circuit of Composite Pipe (2)
478.Touch Piece Controls the Fan in the Circuit of Composite Pipe (2)
479.Light Controls the Fan in the Circuit of Composite Pipe (2)
480.Water Controls the Fan in the Circuit of Composite Pipe (2)
476-480, you just need to replace the lamp[76] with the motor[95] in the circuit of 471-475, then install the fan blade[60] in the motor[95].

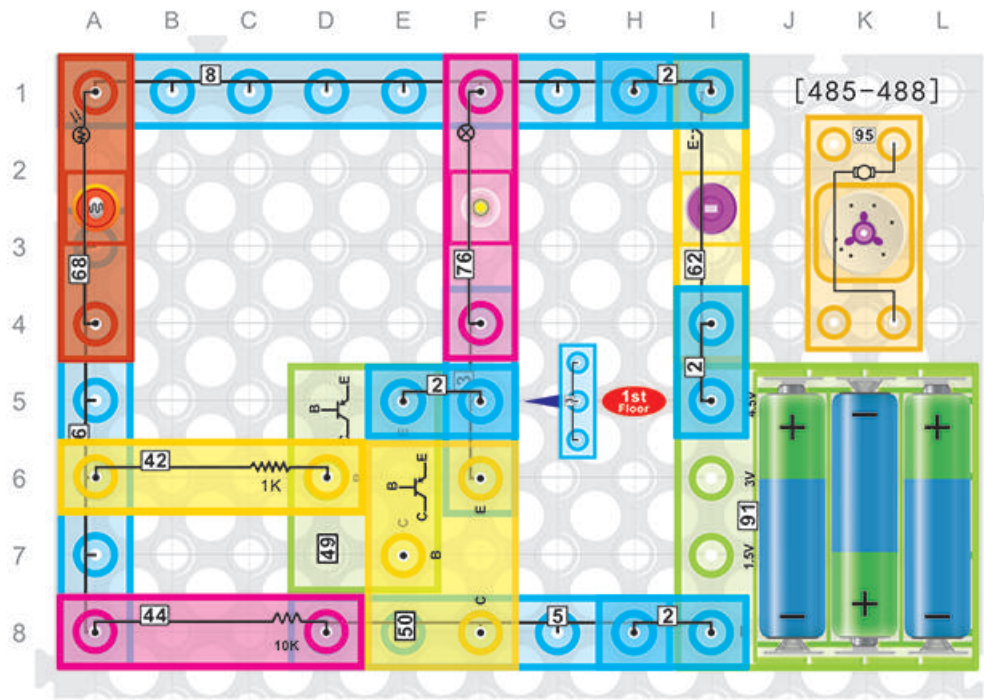


481.Simple Automatic Street Lamp (1)
Build the circuit step by step, turn on the switch[62], when the photoresistance[68] meets any light, the lamp[76] will be off. If you cover the light of the photoresistance [68], the lamp[76] will be on. This principle can be used for making the simple automatic street lamp. In the daytime, the lamp[76] is off, and it will be on at night.

482.Simple Automatic Fan (1)
Replace the lamp[76] with the motor[95], then install the fan blade[60], turn on the switch[62], the fan blade[60] will start running at night, and it will stop in the daytime.

483.Light Controls the Automatic Lamp (1)
Change the position of the photoresistance[68] with 10K resistor[44], if you cover the light of the photoresistance[68], the lamp[76] will be off. When the photoresistance meets any light, the lamp[76] will be on. This is the light controls circuit.

484.Light Controls the Automatic Fan (1)
Replace the lamp[76] with the motor[95], then install the fan blade[60], whenever the photoresistance[68] meets any light, the fan blade will start running. If you cover the light of photoresitance[68], the fan blade[60] will stop. In this circuit, the fan blade [60] is controlled by the light, is it useful in daily life? Absolutely!

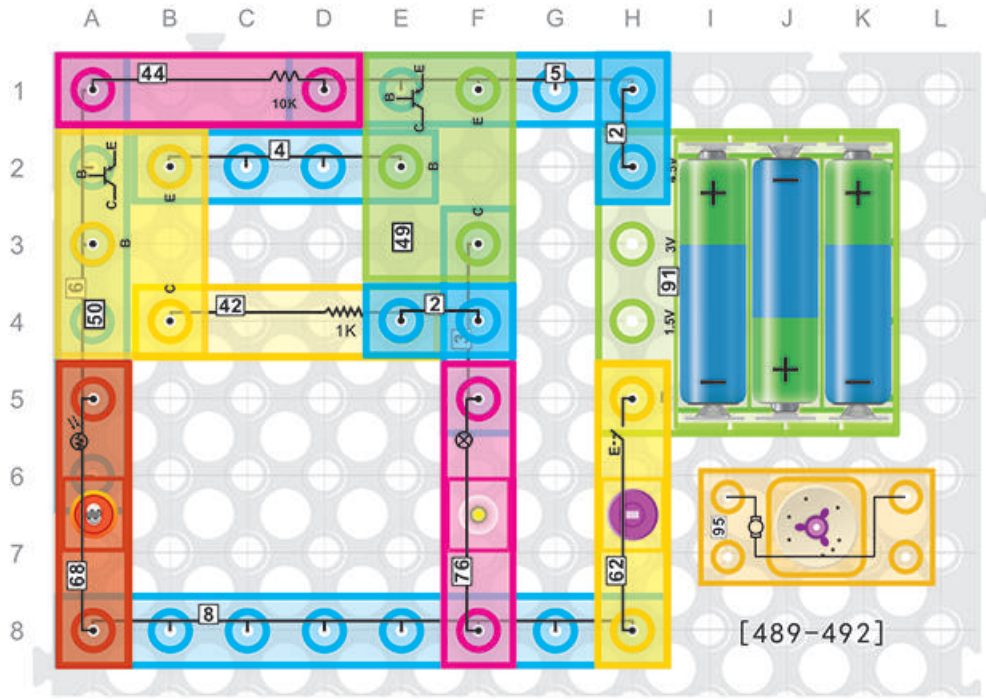


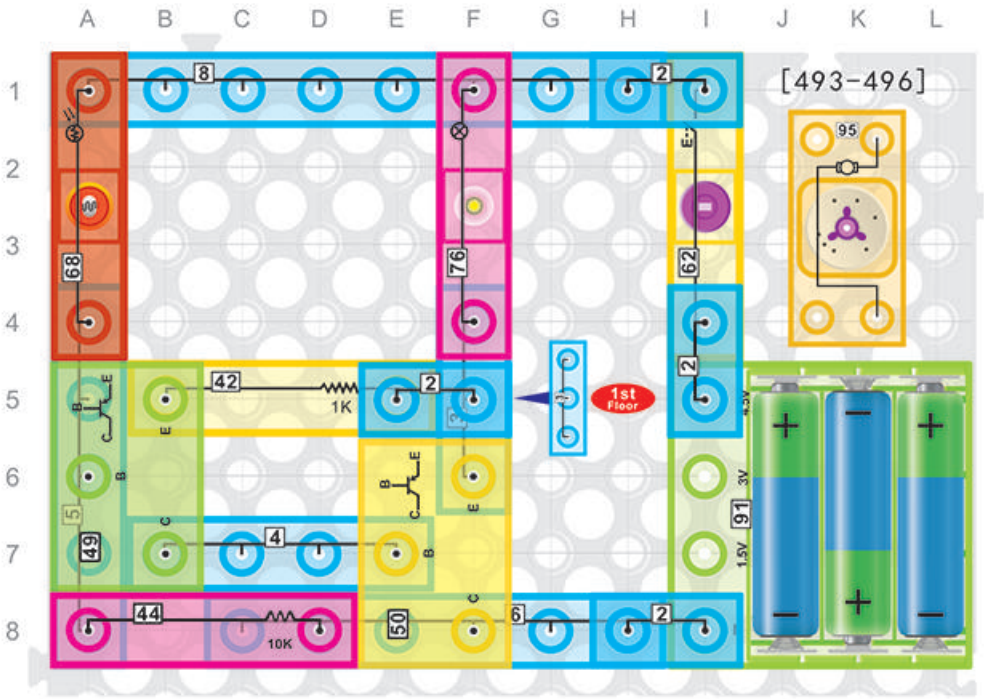
485.Simple Automatic Street Lamp (2)
Build the circuit, turn on the switch[62], the lamp[76] will be in the evening, and it will be off in the daytime.

486.Simple Automatic Fan (2)
Replace the lamp[76] with the motor[95], then install the fan blade[60], turn on the switch[62], the fan blade[60] will start running at night, and it will stop in the daytime.

487.Light Controls the Automatic Lamp (2)
Change the position of the photoresistance[68] with 10K resistor[44], if you cover the light of the photoresistance[68], the lamp[76] will be off. When the photoresistance meets any light, the lamp[76] will be on. This is the light controls circuit.

488.Light Controls the Automatic Fan (2)
Replace the lamp[76] with the motor[95], then install the fan blade[60], whenever the photoresistance[68] meets any light, the fan blade[60] will start running. If you cover the light of photoresitance[68], the fan blade[60] will stop.





489.Simple Automatic Street Lamp (3)
Build the circuit, turn on the switch[62], the lamp[76] will be in the evening, and it will be off in the daytime.

490.Simple Automatic Fan (3)
Replace the lamp[76] with the motor[95], then install the fan blade[60], turn on the switch[62], the fan blade[60] will start running at night, and it will stop in the daytime.

491.Light Controls the Automatic Lamp (3)
Change the position of the photoresistance[68] with 10K resistor[44], if you cover the light of the photoresistance[68], the lamp[76] will be off. When the photoresistance meets any light, the lamp[76] will be on. This is the light controls circuit.

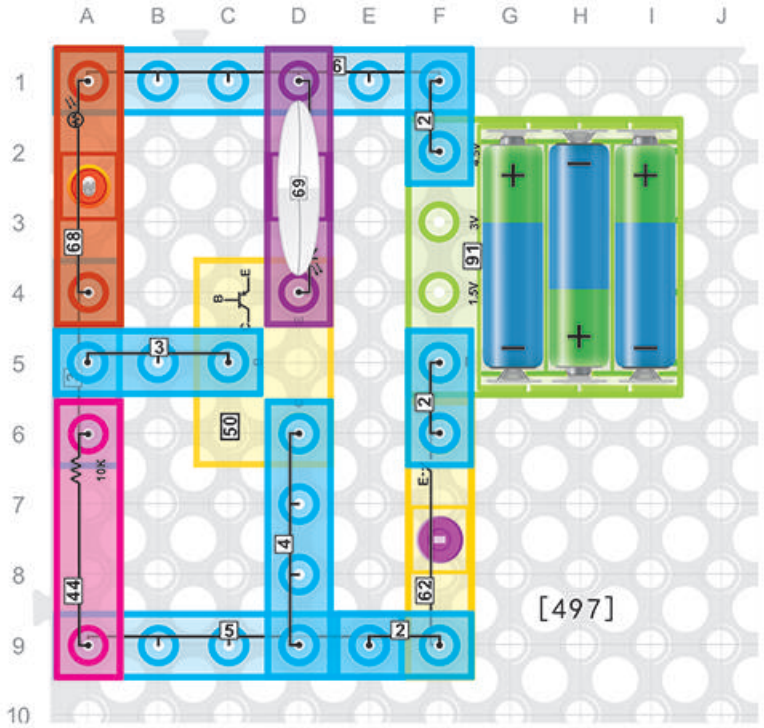
492.Light Controls the Automatic Fan (3)
Replace the lamp[76] with the motor[95], then install the fan blade[60], whenever the photoresistance[68] meets any light, the fan blade[60] will start running. If you cover the light of photoresitance[68], the fan blade[60] will stop.

493.Simple Automatic Street Lamp (4)
Build the circuit, turn on the switch[62], the lamp[76] will be in the evening, and it will be off in the daytime.

494.Simple Automatic Fan (4)
Replace the lamp[76] with the motor[95], then install the fan blade[60], turn on the switch[62], the fan blade[60] will start running at night, and it will stop in the daytime.

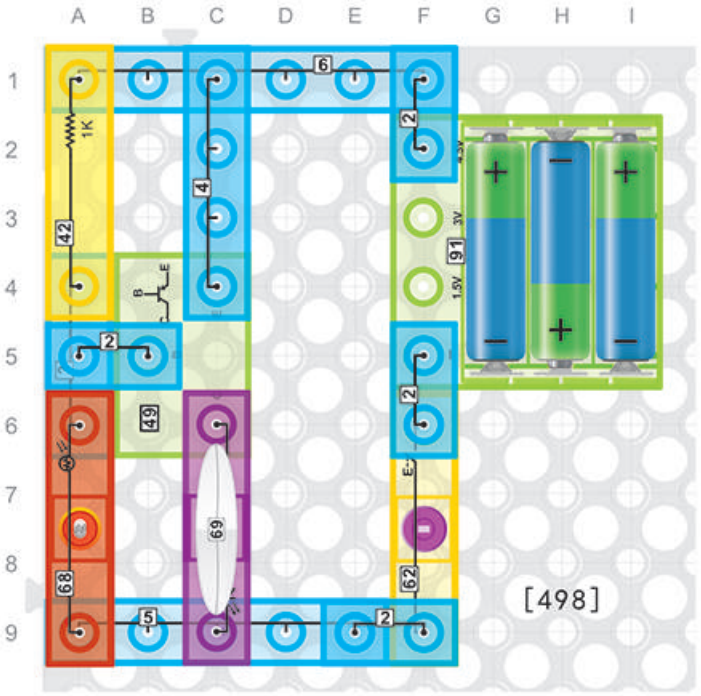
495.Light Controls the Automatic Lamp (4)
Change the position of the photoresistance[68] with 10K resistor[44], if you cover the light of the photoresistance[68], the lamp[76] will be off. When the photoresistance meets any light, the lamp[76] will be on. This is the light controls circuit.

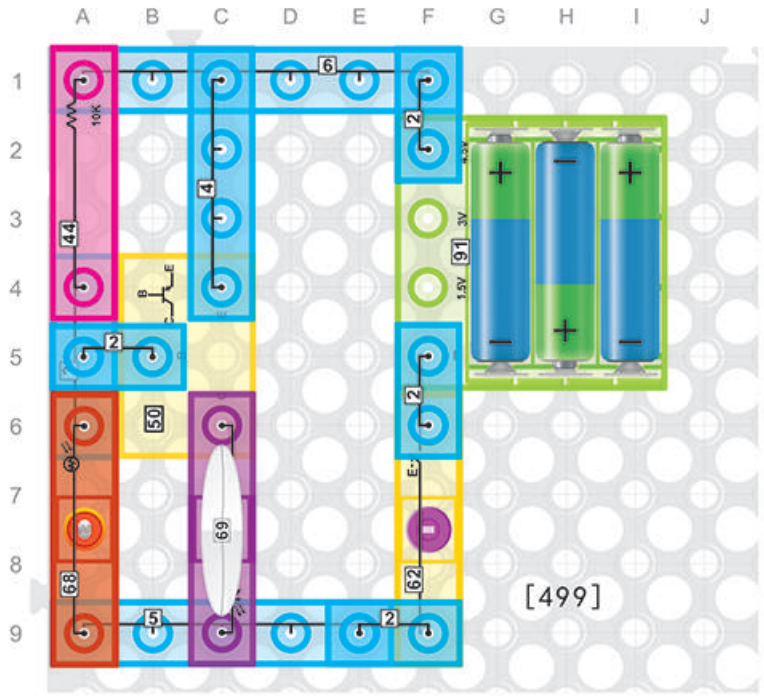
496.Light Controls the Automatic Fan (4)
Replace the lamp[76] with the motor[95], then install the fan blade[60], whenever the photoresistance[68] meets any light, the fan blade[60] will start running. If you cover the light of photoresitance[68], the fan blade[60] will stop.



497.Light Controls the Automatic LED (1)
Build the circuit, then turn on the switch[62], it will be amazing to see that the LED[69] will be on if the photoresistance[68] meets any light. If you cover the light of the photoresistace[68], the LED[69] will be off.

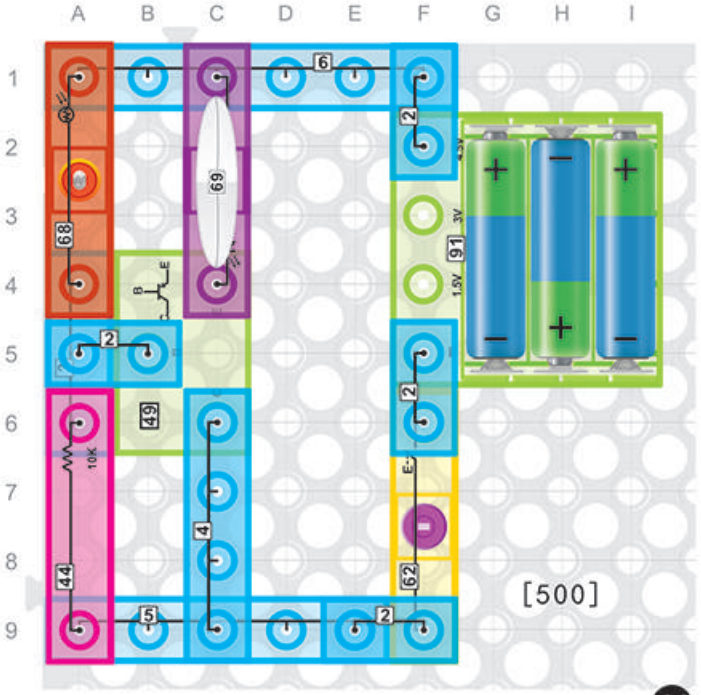
498.Light Controls the Automatic LED (2)
Build the circuit, then turn on the switch[62], it will be amazing to see that the LED[69] will be on if the photoresistance[68] meets any light. If you cover the light of the photoresistace[68], the LED[69] will be off.

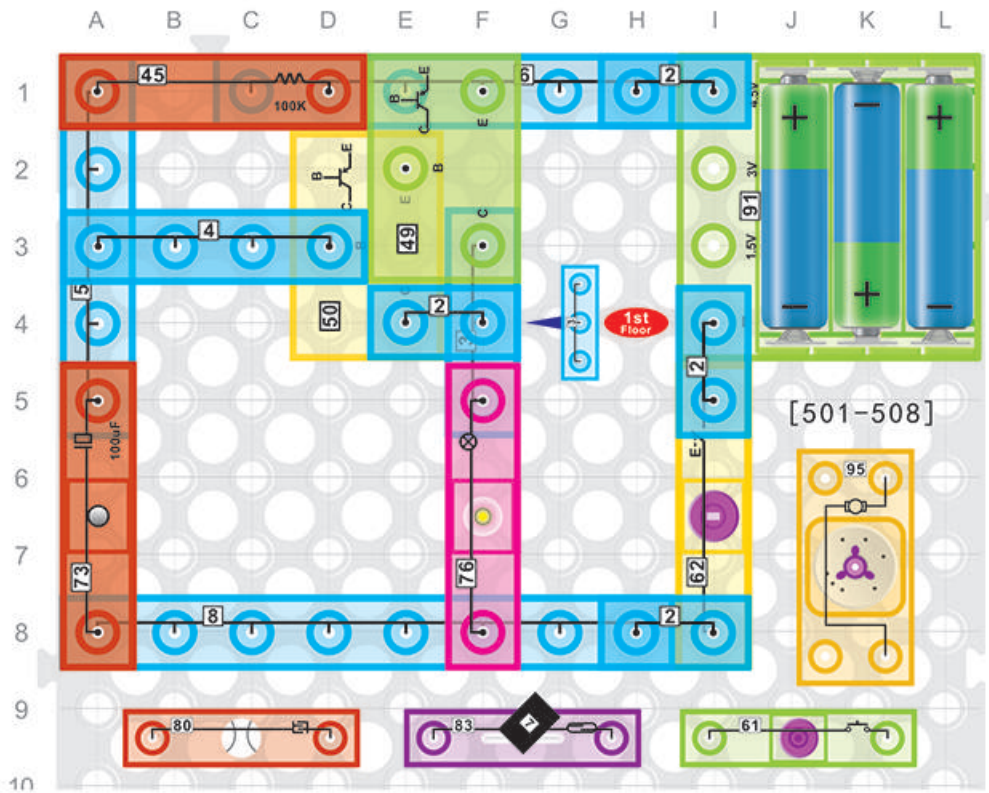


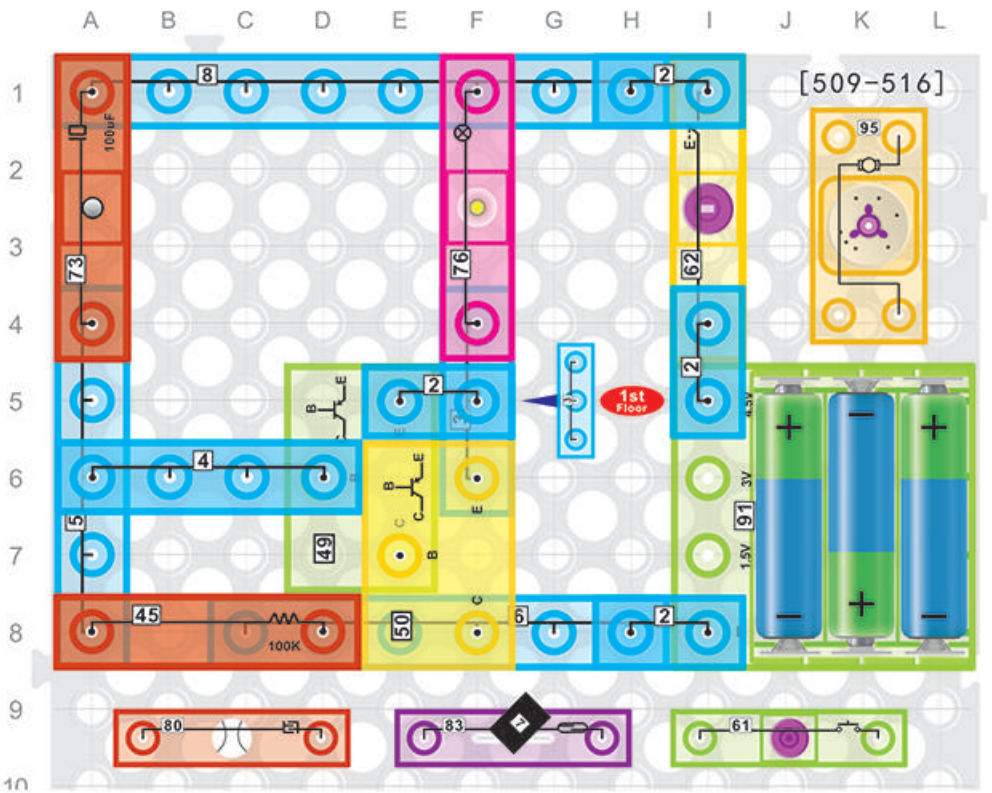


499.Cover the Light to Control the LED (1)
Build the circuit, turn on the switch[62], can you see the LED[69] will be on? Not yet, right? Now try to cover the light of the photoresistance[68], the LED[69] will be on.

500.Cover the Light to Control the LED (2)
Build the circuit, turn on the switch[62], can you see the LED[69] will be on? Not yet, right? Now try to cover the light of the photoresistance[68], the LED[69] will be on.

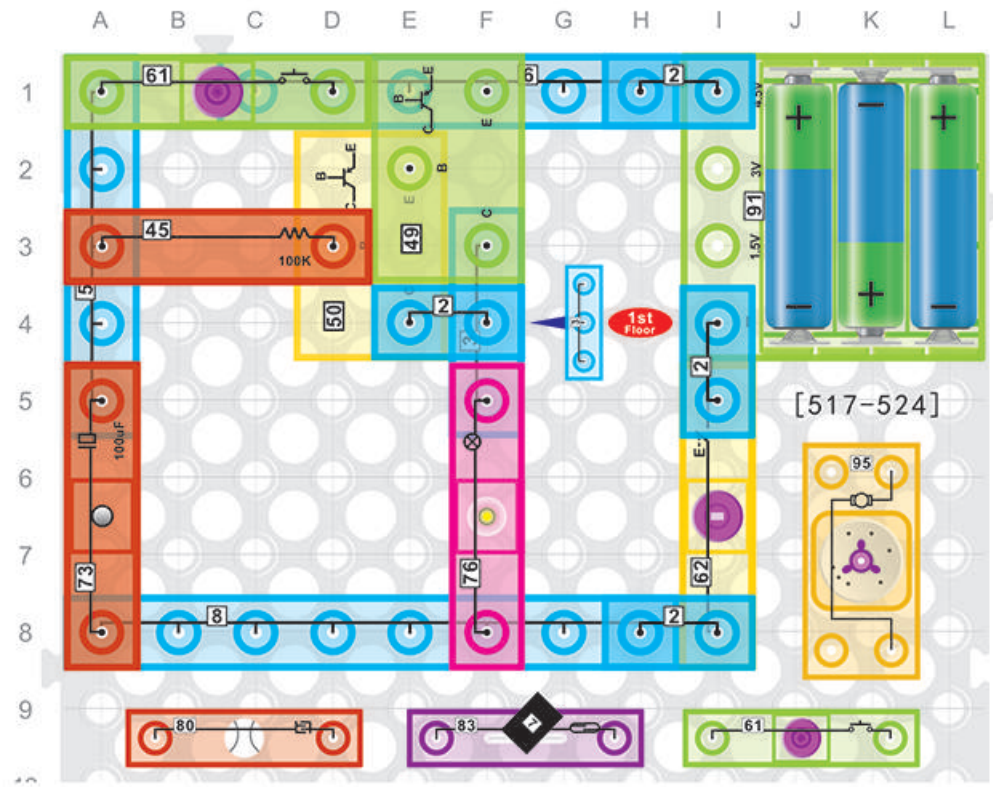


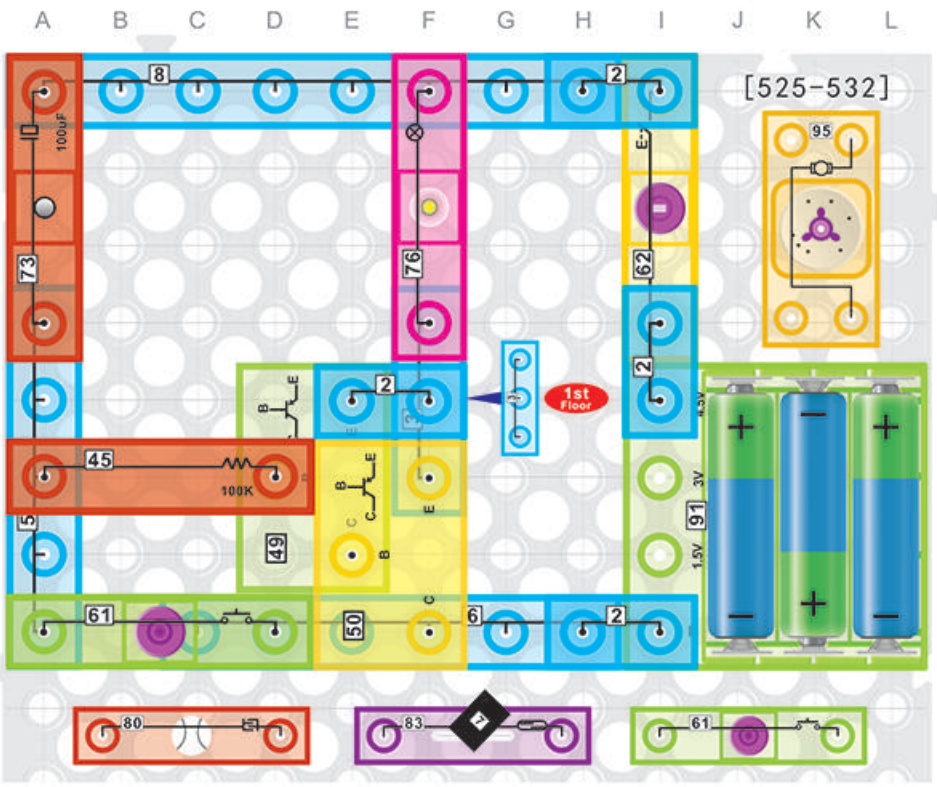




501.Switch Controls the Deferred Lamp (1)
Build the circuit, turn on the switch[62], wait for a little while, the lamp[76] will be on later.
502.Press Switch Controls the Deferred Lamp (1)
Replace the switch[62] with the press switch[61], then press the press switch[61], wait for a little while, the lamp[76] will be on later.
503.Magnet Controls the Deferred Lamp (1)
Replace the switch[62] with the reed switch[83], then move the reed switch[83] with magnet[7], wait for a little while, and the lamp[76] will be on later.
504.Touch Piece Controls the Deferred Lamp (1)
Replace the switch[62] with touch piece[80], if you touch the touch piece[80] with any sheetmetal, wait for a little while, the lamp[76] will be on later.
505.Switch Controls the Deferred Motor (1)
506.Press Switch Controls the Deferred Motor (1)
507.Magnet Controls the Deferred Motor (1)
508.Touch Piece Controls the Deferred Motor (1)
505-508, you just need to replace the lamp[76] with the motor[95] in the circuit of 501-504.

509.Switch Controls the Deferred Lamp (2)
Build the circuit, turn on the switch[62], wait for a little while, the lamp[76] will be on later.
510.Press Switch Controls the Deferred Lamp (2)
Replace the switch[62] with the press switch[61], then press the press switch [61],wait for a little while, the lamp[76] will be on later.
511.Magnet Controls the Deferred Lamp (2)
Replace the switch[62] with the reed switch[83], then move the reed switch[83] with magnet[7], wait for a little while, and the lamp[76] will be on later.
512.Touch Piece Controls the Deferred Lamp (2)
Replace the switch[62] with touch piece[80], if you touch the touch piece[80] with any sheetmetal, wait for a little while, the lamp[76] will be on later.
513.Switch Controls the Deferred Motor (2)
514.Press Switch Controls the Deferred Motor (2)
515.Magnet Controls the Deferred Motor (2)
516.Touch Piece Controls the Deferred Motor (2)
513-516, you just need to replace the lamp[76] with the motor[95] in the circuit of 509-512.





517. Switch Controls the Timed Lamp (1)
Build the circuit, then put a book near your bed, turn on the switch[62], then press the press switch[61], the lamp[76] will be on for a while. Chang a larger capacitor, now you can set the time that the lamp[76] can be turned off automatically.

518.Press Switch Controls the Timed Lamp (1)
Replace the switch[62] with the press switch[61], if you press the press switch[61] now, the lamp[76] will be on for a while.

519.Magnet Controls the Timed Lamp (1)
Replace the switch[62] with the reed switch[83], touch the reed switch[83] with magnet[7], then you can see the lamp[76] is on, and it will be stopped for a while.

520.Touch Piece Controls the Timed Lamp (1)
Replace the switch[62] with touch piece[80], if you touch the touch piece[80] with any sheetmetal, the lamp[76] will be lit on, also it will be stopped for a while.

521.Simple Timed Fan (1)

522.Press Switch Controls the Timed Fan (1)

523.Magnet Controls the Timed Fan (1)

524.Touch Piece Controls the Timed Fan (1)
521-524, you just need to replace the lamp[76] with the motor[95] in the circuit of 517-520, then install the fan blade[60].

525. Switch Controls the Timed Lamp (2)
Build the circuit, then put a book near your bed, turn on the switch[62], then press the press switch[61], the lamp[76] will be on for a while. Chang a larger capacitor, now you can set the time that the lamp[76] can be turned off automatically.

526.Press Switch Controls the Timed Lamp (2)
Replace the switch[62] with the press switch[61], if you press the press switch [61] now, the lamp[76] will be on for a while.

527.Magnet Controls the Timed Lamp (2)
Replace the switch[62] with the reed switch[83], touch the reed switch[83] with magnet[7], then you can see the lamp[76] is on, and it will be stopped for a while.

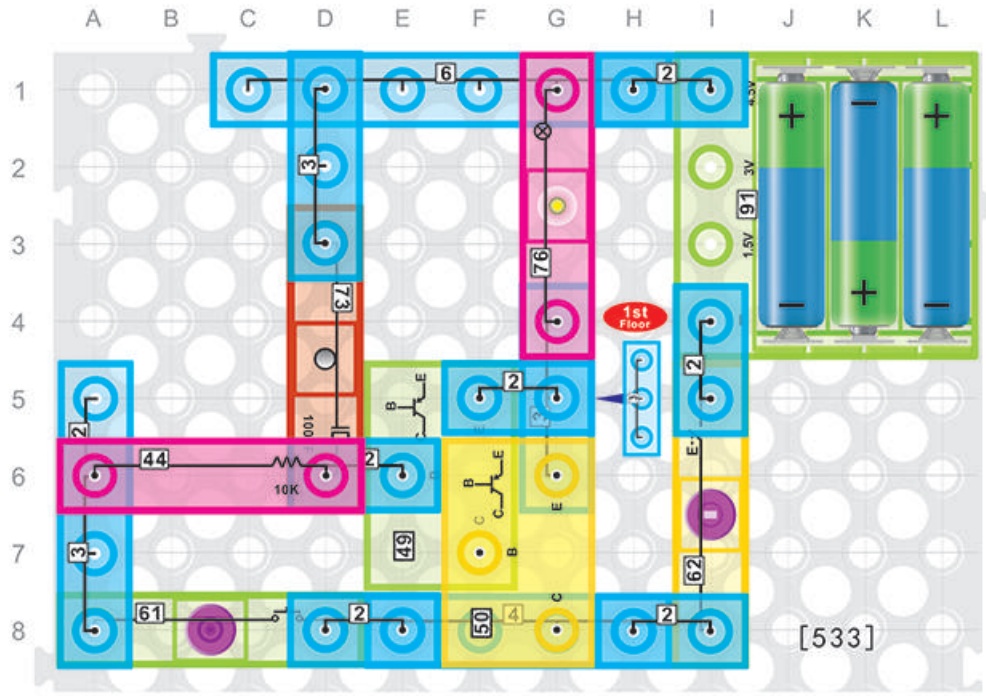
528.Touch Piece Controls the Timed Lamp (2)
Replace the switch[62] with touch piece[80], if you touch the touch piece[80] with any sheetmetal, the lamp will be lit on, also it will be stopped for a while.

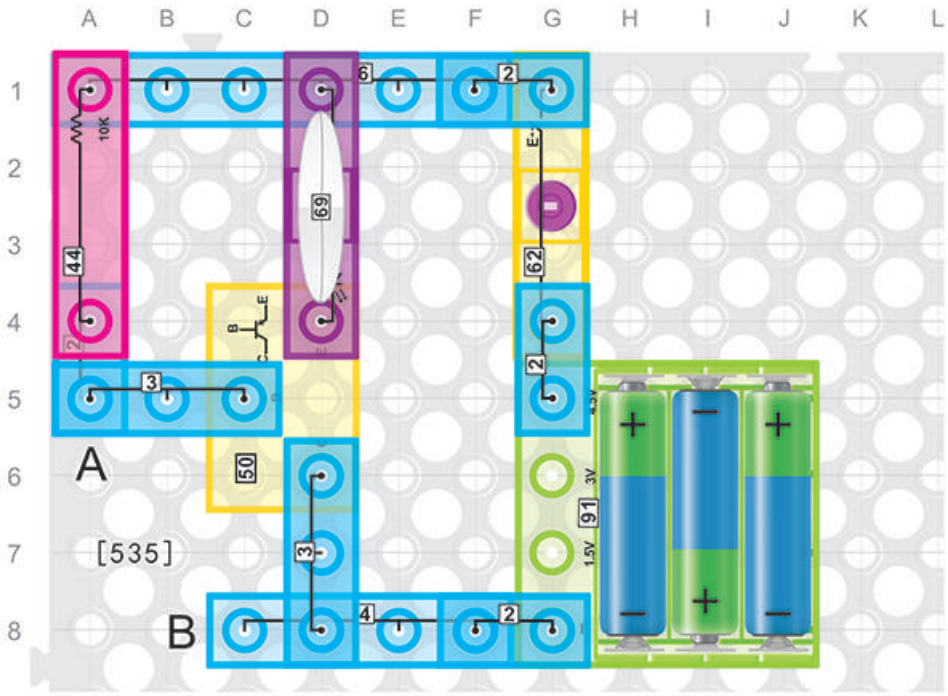
529.Simple Timed Fan (2)

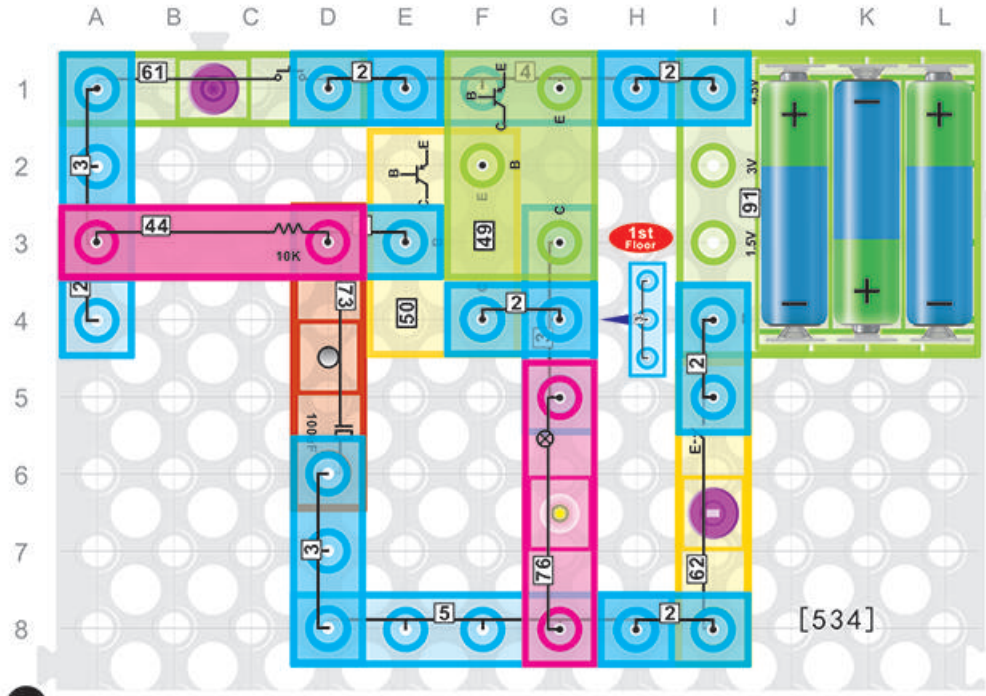
530.Press Switch Controls the Timed Fan (2)

531.Magnet Controls the Timed Fan (2)

532.Touch Piece Controls the Timed Fan (2)
529-532, you just need to replace the lamp[76] with the motor[95] in the circuit of 525-528, then install the fan blade[60].



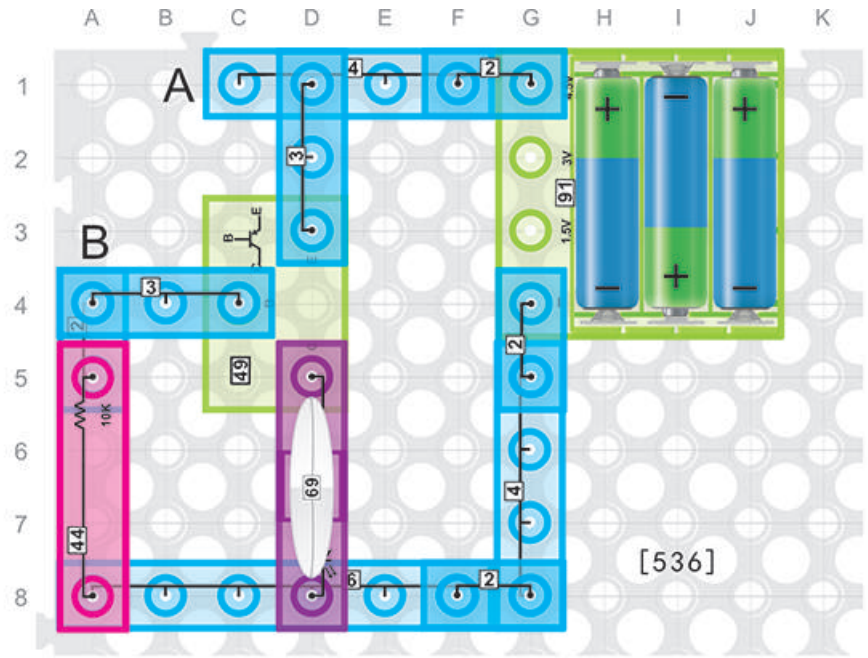


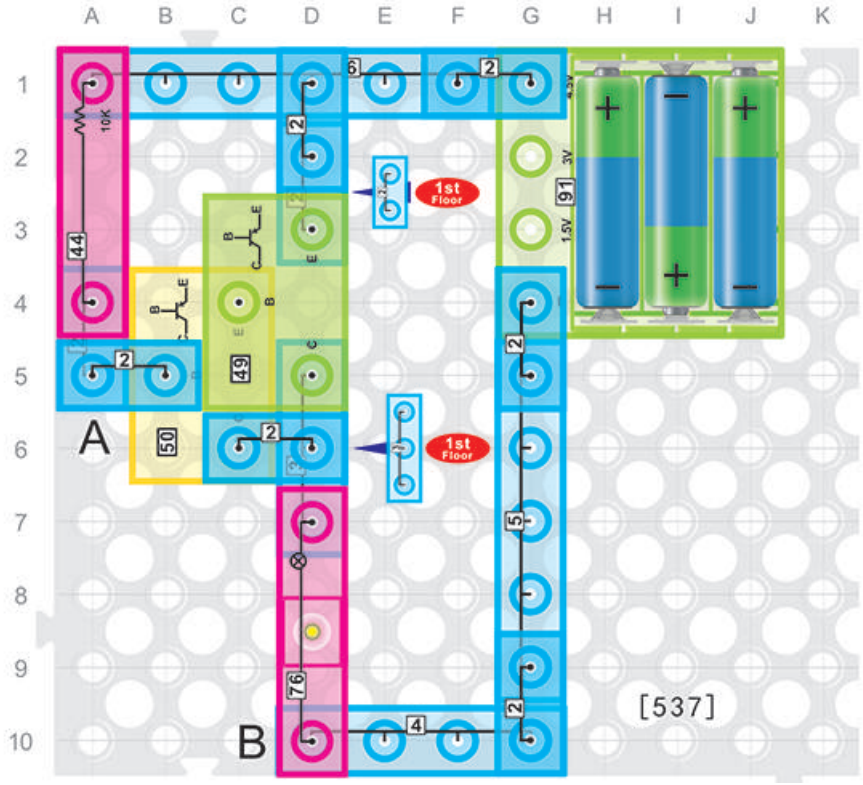


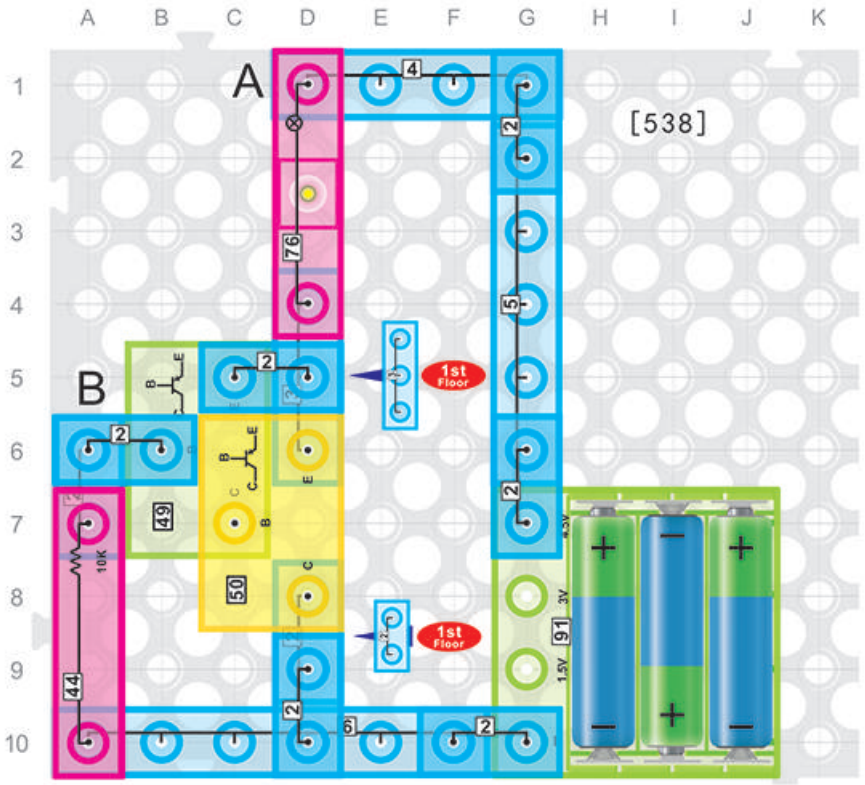
533. Insensitive Lamp (1)
Build the circuit, turn on the switch[62], then press the press switch[61], the lamp[76] will be on for a while. Release the press switch[61], the lamp[76] will be turned off later.

534. Insensitive Lamp (2)
Build the circuit, turn on the switch[62], then press the press switch[61],wait for a minute, the lamp[76] will be turned on. And it will be off later.

535. Wire Controls the LED Alarm (1)
Build the circuit, turn on the switch[62], you can see the LED[69] will be on. If you connect the point A and B with small wire, then the LED[69] will be off. Connect your belongings with the small wire, whenever the small wire is cut, you can get the alarm from the LED[69].



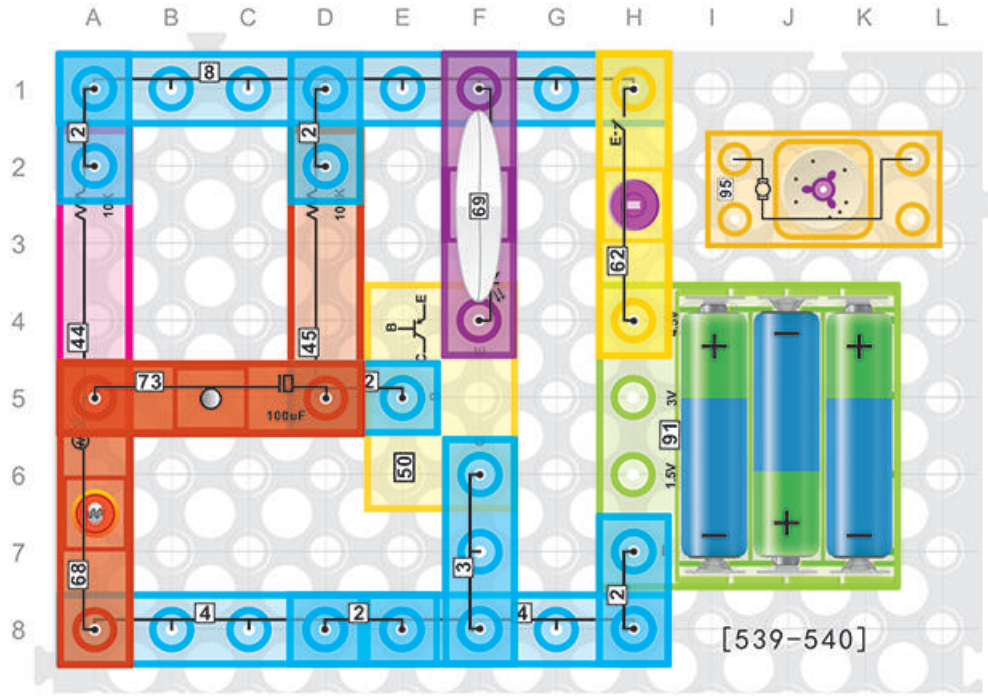


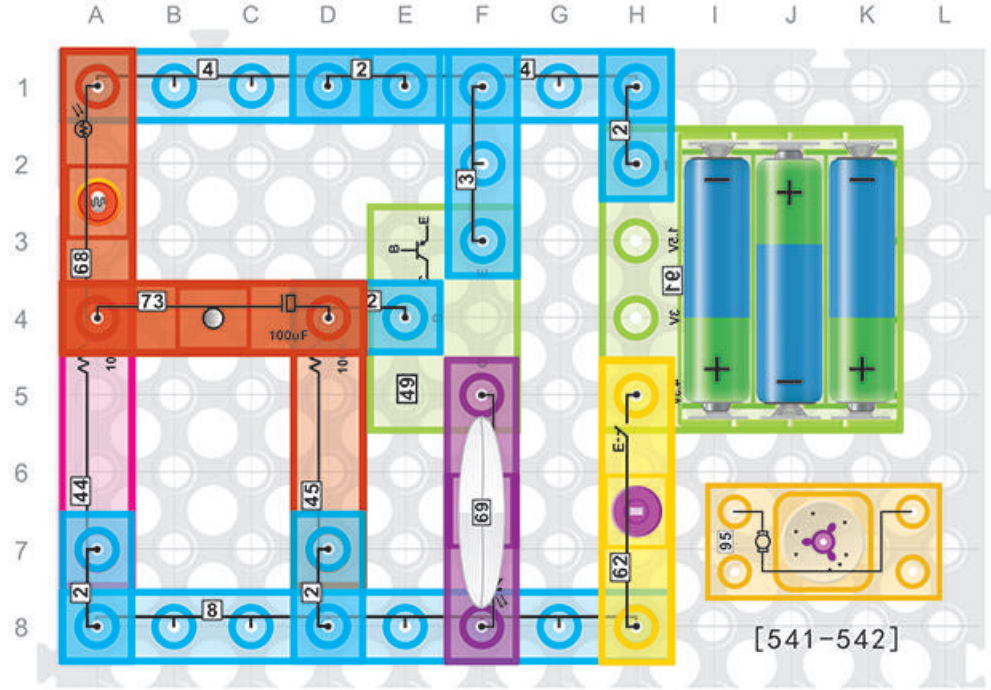


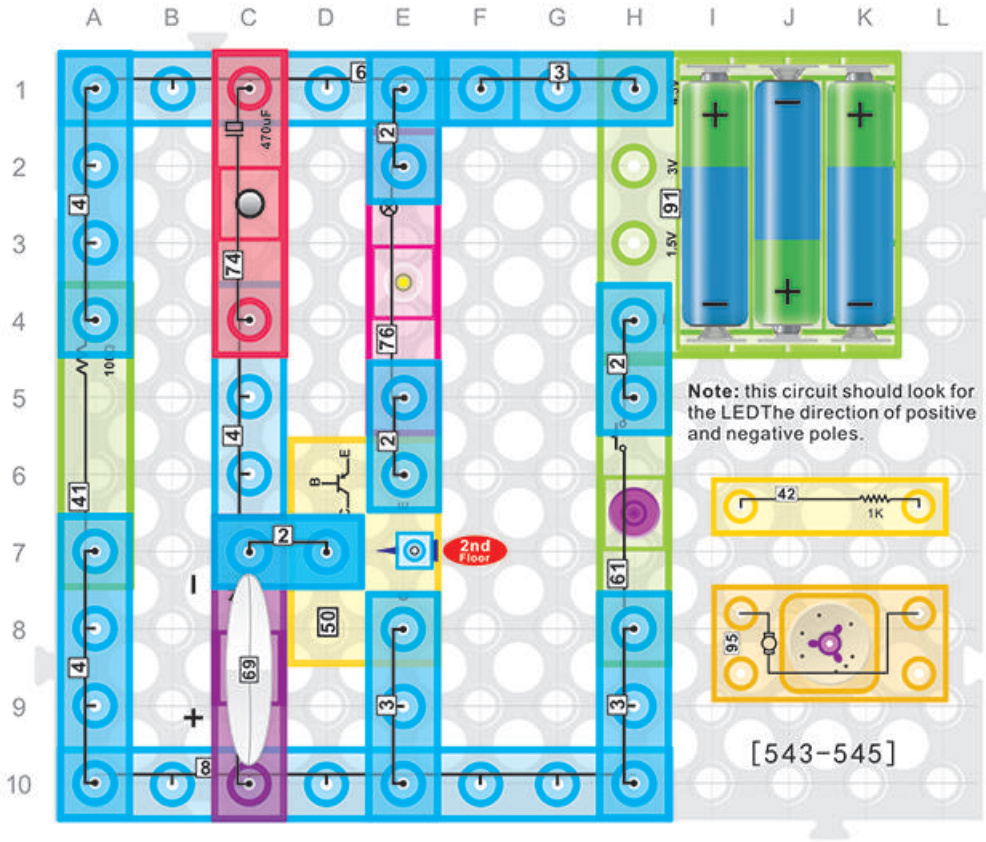
536. Wire Controls the LED Alarm (2)
Use a small and long wire to connect through your bike, motor or anything else, then connect the wire with point A and B. Whenever the small wire is cut, you can get the alarm from the LED[69].

537. Wire Controls the LED Alarm in the Circuit of Composite Pipe (1)
Use a small and long wire to connect through your bike, motor or anything else, then connect the wire with point A and B. Whenever the small wire is cut, you can get the alarm from the LED[69].

538. Wire Controls the LED Alarm in the Circuit of Composite Pipe (2)
537-538, it's similar to the circuit of 535-536. Whenever the small wire is cut, you can get the alarm from the Lamp[76].







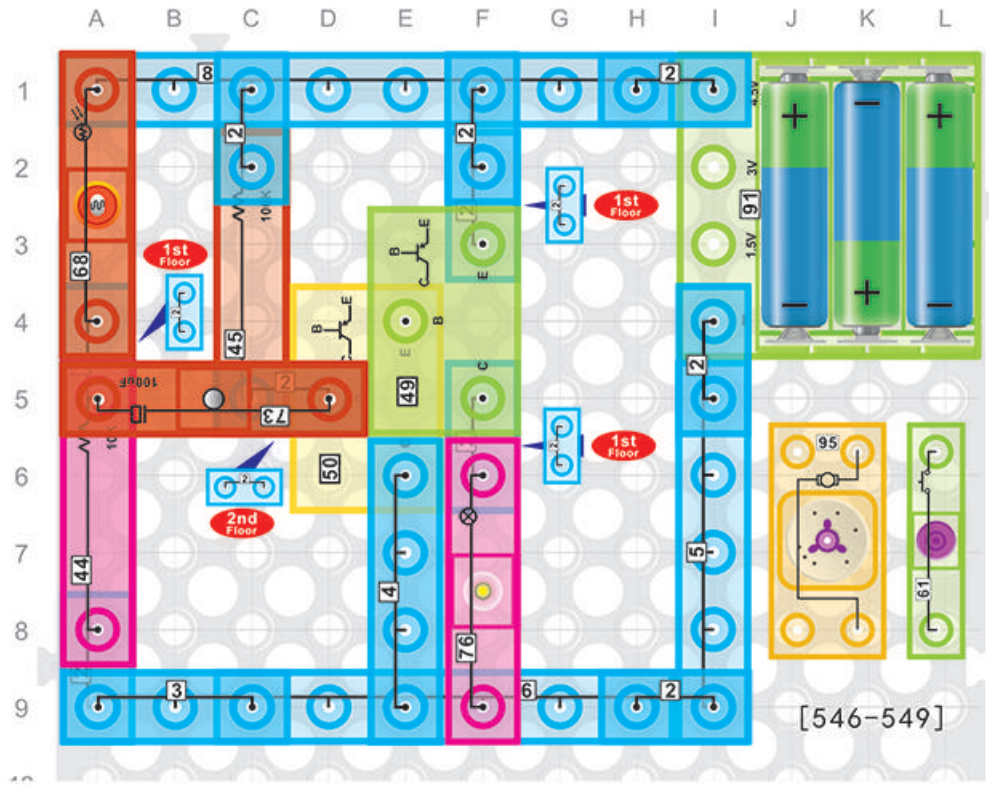
539.Light Controls the Flashing LED (1)
Build the circuit, turn on the switch[62], then the LED[69] will be turned on. If you swing your hands on the photoresistance[68], you can see the LED[69] is flashing.
540.Switch Controls the the Flashing LED (1)
Replace the photoresistance[68] with the motor[95], then turn on the switch[62], if you turn the rotation shaft of the motor[95], you can also see the LED[69] is flashing.

541. Light Controls the Flashing LED (2)
Build the circuit, turn on the switch[62], then the LED[69] will be turned on. If you swing your hands on the photoresistance[68], you can see the LED[69] is flashing.
542.Switch Controls the the Flashing LED (2)
Replace the photoresistance[68] with the motor[95], then turn on the switch[62], if you turn the rotation shaft of the motor[95], you can also see the LED[69] is flashing.

543.Make the Lightening Gun
Build the circuit, press the press switch[61], the lamp[76] will flash up and gone instantly. Release the press switch[61], the LED[69] will also flash up and gone instantly. Now press the press switch[61], the lamp[76] will flash again. This circuit can be used in making the lightening gun.

544.Instant Flash Lamp
Build the circuit, disconnect the Resistor(100 Ω)[41], then press the switch [62], you can see the lamp[76] will flash up and gone instantly.

545. Sluggish Fan Blade
Build the circuit step by step, replace the lamp[76] with the motor[95], then install the fan blade[60]. Now press the press switch[61], you can see the fan blade start running for seveal circles and then stop. Press it (press switch[61]) again, it's the same.

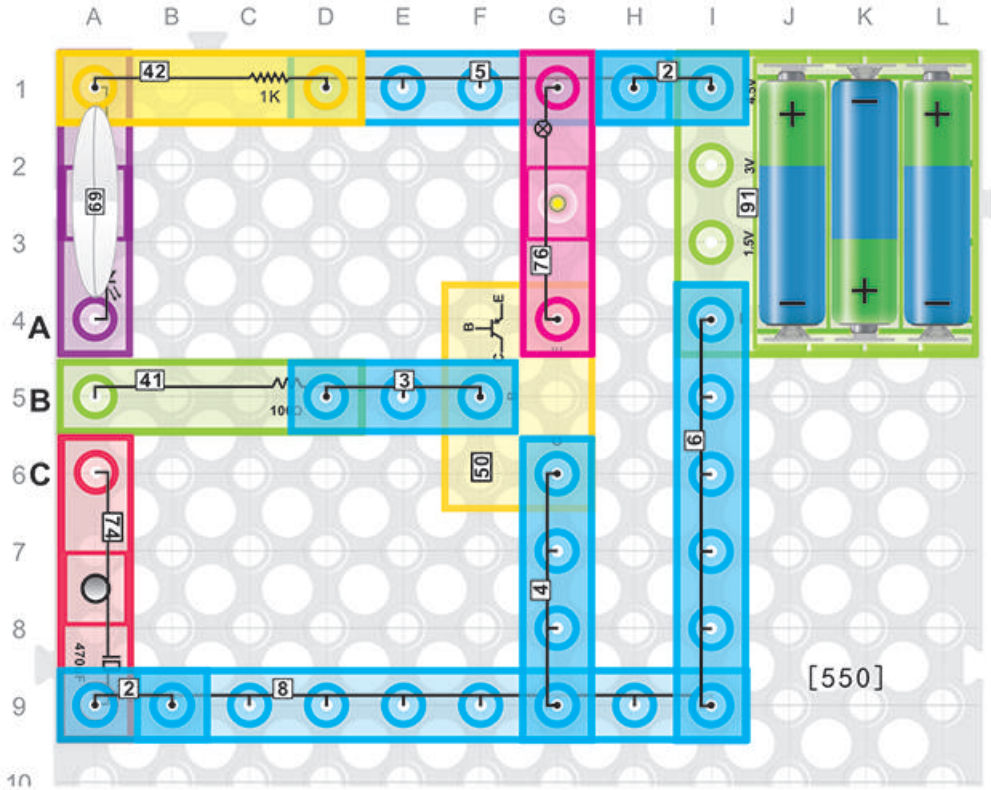


546.Light Controls the Lamp for Intervals
Buile the circuit, the lamp[76] will be on. If you cover the light on the photoresistance[68], the lamp[76] will be off for a short time intervals.

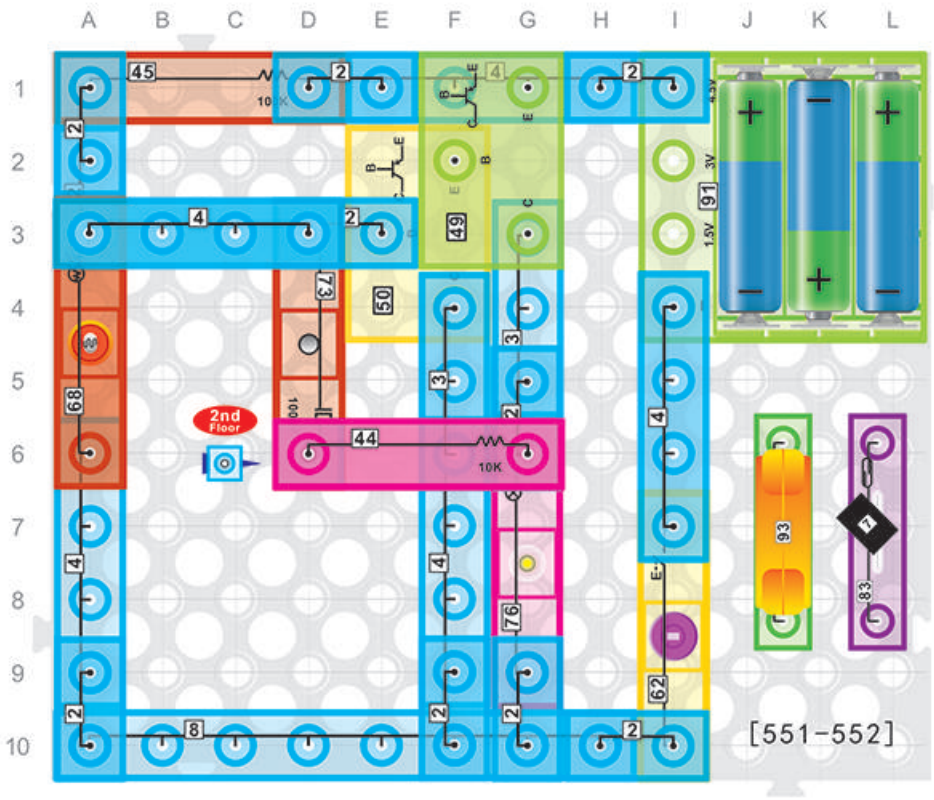
547.Press Switch Controls the Lamp for Intervals
Replace the photoresistance[68] with the press switch[61], press or release the press switch[61], the lamp[76] will be off and on in a short time.

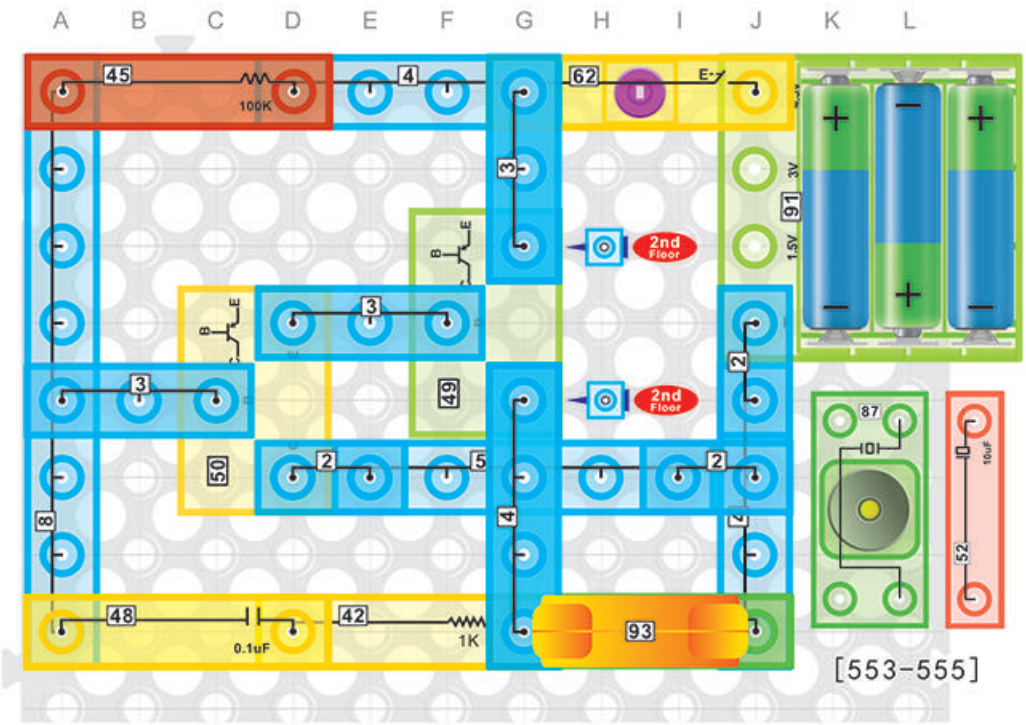
548. Light Controls the Fan for Intervals (1)

549. Light Controls the Fan for Intervals (2)
548-549, replace the lamp[76] with the motor[95] in the circuit of 547-548, then install the fan blade[60].



550. Charge and Discharge of the Capacitor
Build the circuit, then conncet point A and B with a small wire, now you can see the LED[69] flash up instantly. Because it's charging for the capacitor now. Take down the wire between point A and B, then connect with point B and C, then you can see the lamp[76] is flashing, because the capacitor is discharging to the transistor though the resistor(100 Ω)[41] .





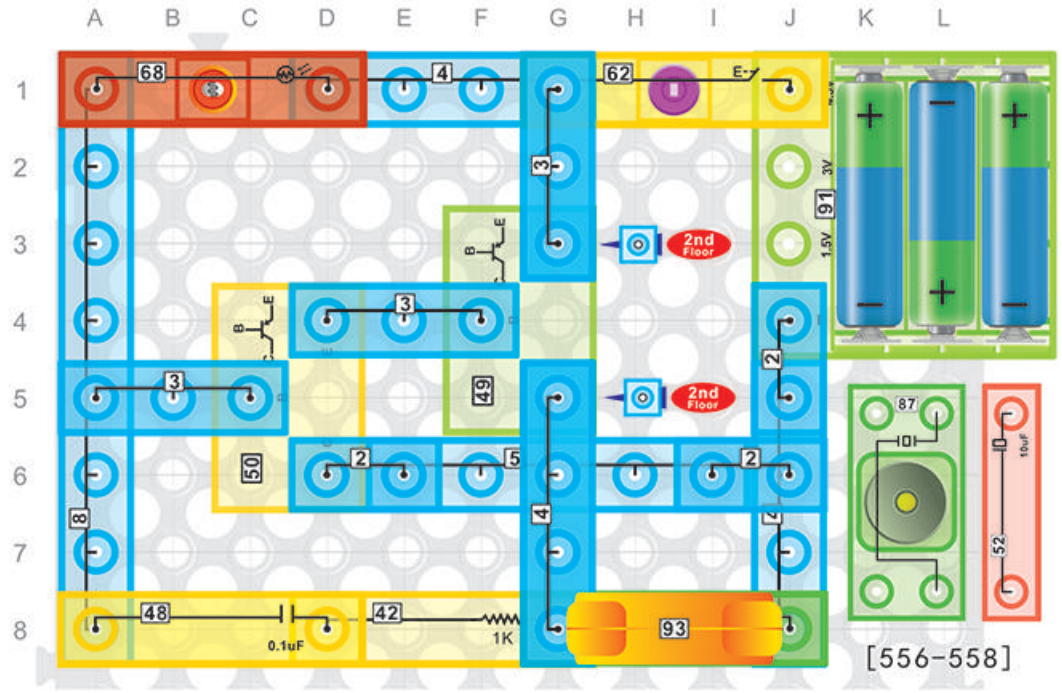
551.Make the Automatic Pharos
Build the circuit, turn on the switch[62], the lamp[76] will flash in the evening, and it will be shining at night, because there's no light on the photoresistance [68] at night. Therefore, in the daytime, the lamp[76] will be off when the photoresistance[68] meets any light. This circuit is widely used in making the automatic pharos.

552.Magnet Controls the Rhythmical Sounds
Replace the lamp[76] with the speaker[93], and also replace the photoresistance[68] with the reed switch[83] from the upper circuit. Then turn on the switch[62], if you touch the reed switch[83] with magnet[7] now, you can hear some rhythmical sounds.

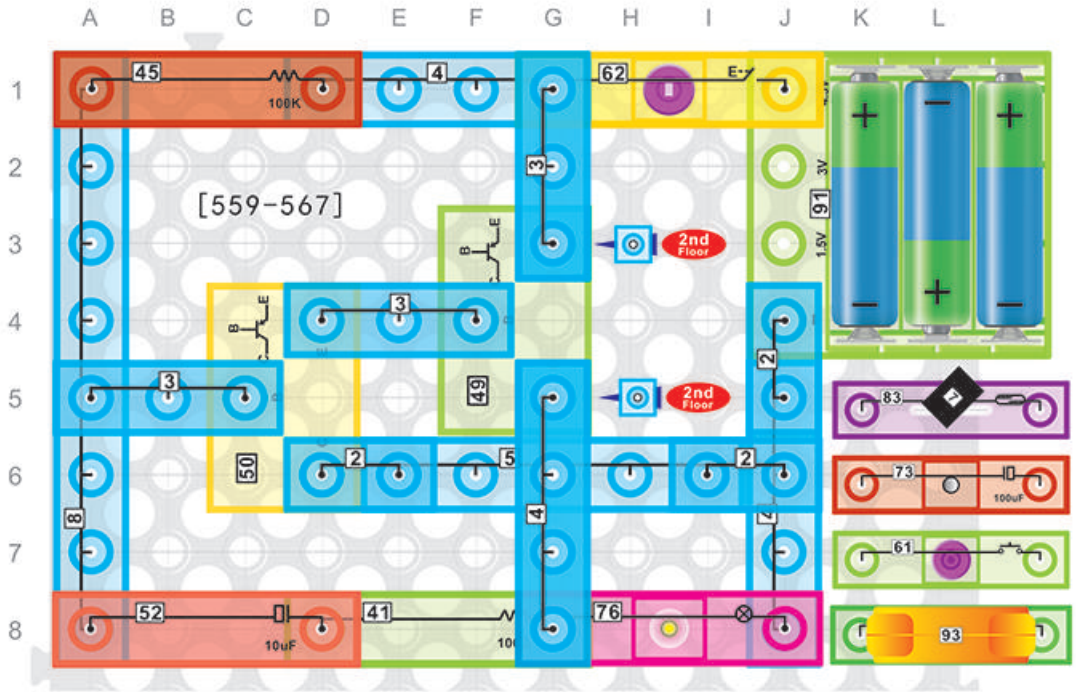
553.Mediant Voice-frequency Eletric Circuit
Build the circuit, connect the switch[62], then you can hear some mediant sounds from the speaker[93]. Thi is the rsult of vibration that caused from noise gain when the current of transistors pass the capacitor (0.1 uF)[48]. It's the alternating voice-frequency electric waves that make this sounds from the speaker[93].

554.High Pitch of Voice-frequency Eletric Circuit
Replace the capacitor (0.1 uF) [48]with the buzzer[87], turen on the switch[62], you will hear some jarring sounds from the speaker[93].

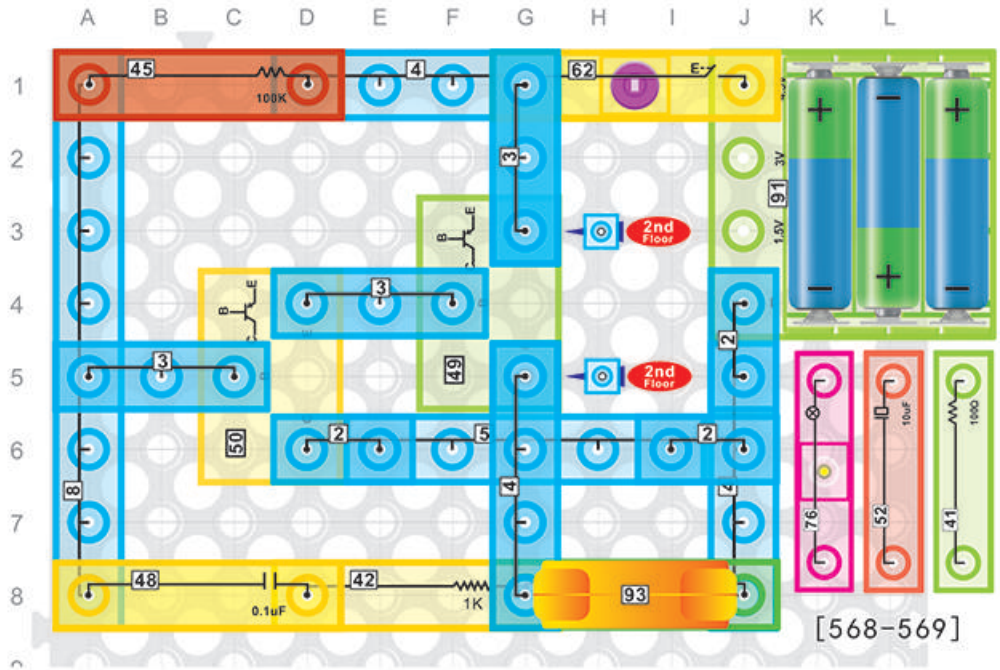
555.Low Pitch of Voice-frequency Eletric Circuit
Replace the capacitor[48] (0.1 uF) with the capacitor(10 uF)[52], then turn on the switch[62], you will hear the sounds like “Da, Da...”.



556. Pitch-Shift of Mediant Sounds
Build the circuit, then turn on the switch[62], no sounds can be heard from the speaker[93]. Now, if you cover the light of the photoresistance[68] with your hands, you can hear the mediant sounds from the speaker[93].
557. Pitch-Shift of High Pitch
Replace the capacitor (0.1 uF)[48] with the buzzer[87], turn on the switch[62], no sounds can be heard from the speaker[93]. Now if you cover the light of the photoresistance[68] with your hands, you can hear some jarring sounds from the speaker[93].
558. Pitch-Shift of Low Pitch
Replace the capacitor(0.1 uF)[48] with the capacitor(10 uF)[52], then turn on the switch[62], no sounds can be heard from the speaker[93]. Now if you cover the light of the photoresistance[68] with your hands, you can hear some rhythmical sounds from the speaker[93].



559.Quick Flash of Lamp
Build the circuit, then turn on the switch[62], the lamp[76] will keep flashing.
560. Slow Flash of Lamp
Replace the capacitor (10 uF)[52] with the capacitor(100 uF)[73], then turn on the switch[62], then lamp[76] will flash more slowly
561.Sounds of Cicada
Replace the lamp[76] with the speaker[93], then turn on the switch[62], you can hear the sounds of cicada from the speaker[93].
562.Press Switch Controls the Quick Flash of Lamp
563. Press Switch Controls the Slow Flash of Lamp
564.Press Switch Controls the Sounds of Cicada
562-564, replace the switch[62] with the press switch[61] in the circuit of 559-561, then press the press switch[61].
565.Magnet Controls the Quick Flash of Lamp
566.Magnet Controls the Slow Flash of Lamp
567.Magnet Controls the Sounds of Cicada
565-567, replace the switch[62] with the reed switch[83] in the circuit of 559-561, then touch the reed switch[83] with magnet[7].

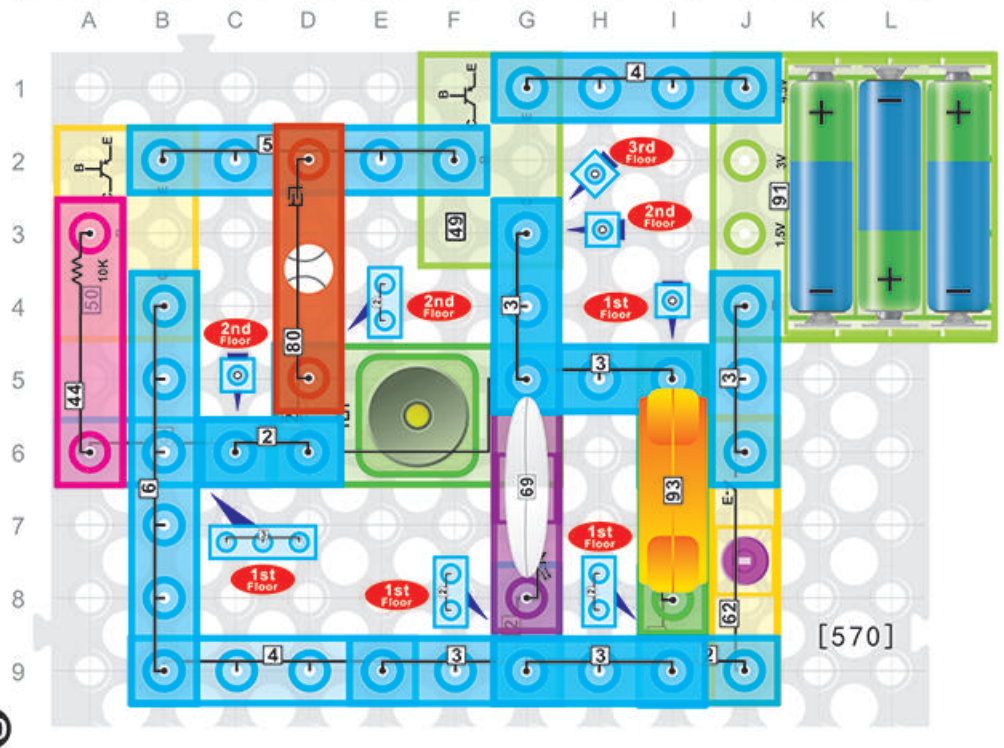


568.Buzz of Mosquito in the Circuit

Build the circuit, then turn on the switch[62], you will hear the buzz of mosquito from the speaker[93].

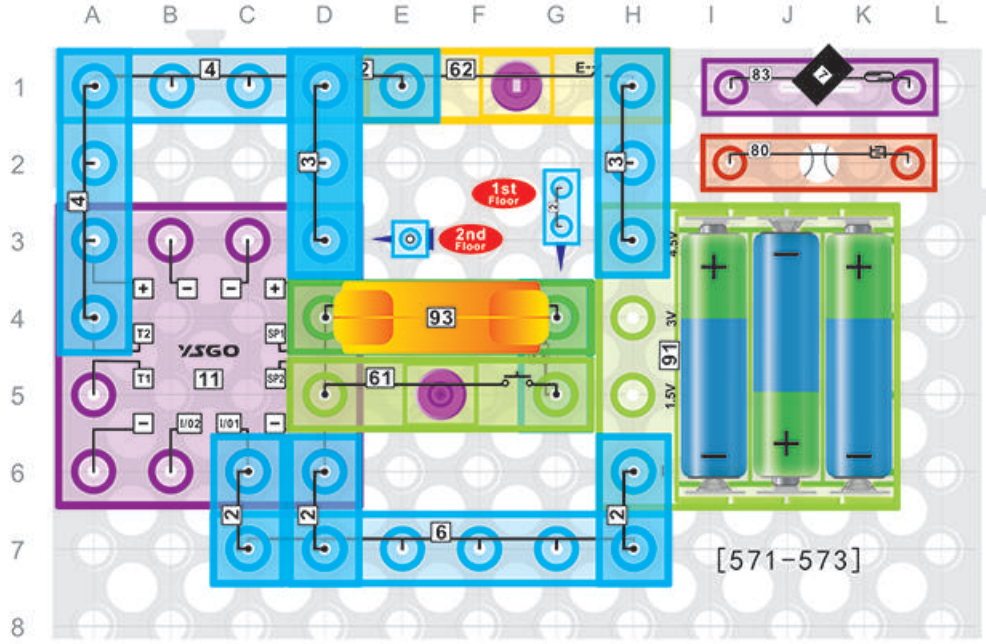
569.Traffic Lights

Replace the speaker[93] with the lamp[76], then also repalce the capacitor (0.1 uF)[48] with the capacitor(10 uF)[52], take down the resistor(100 Ω)[41], then install the 1K resistor[42], now if you turn on the switch[62], the lamp[76] will keep flashing.



570.Lie Detector

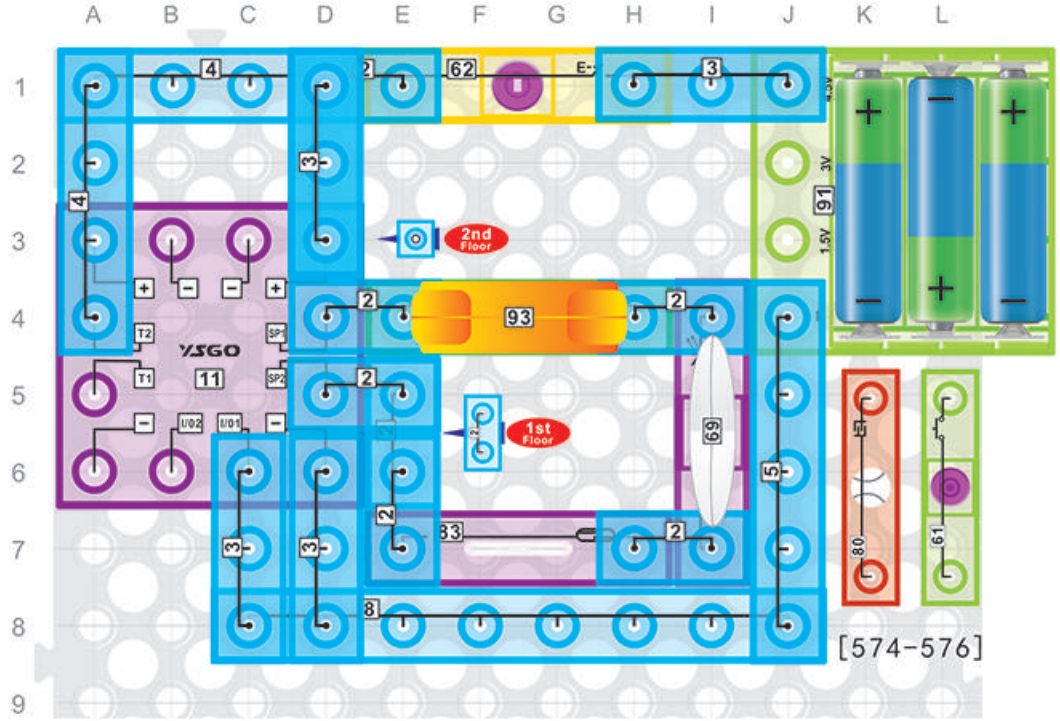
Build the circuit, turn on the switch[62], if you touch the touch piece[80] with your fingers, there's something happens in the speaker[93] and LED[69]. Because people will be nervous and sweaty when they are lying. And the sweaty hands can lessen the current that pass through the skin. So we can use this principle to test whether they are lying or not.



571.Press Switch Controls the Intermittent Musical Door Bell
Build the circuit, turn on the switch[62], then press the press switch[61] rhythmically, you can hear some intermittent music. If the press switch [61] is installed outdoors with small wire, the music can be heard indoors when the visitor press it (press switch[61]).

572.Magnet Controls the Intermittent Musical Door Bell
Replace the press switch[61] with the reed switch[83], then turn on the switch[62], now if you touch the reed switch[83] with magnet[7], you can also hear the intermittent music from the speaker[93].

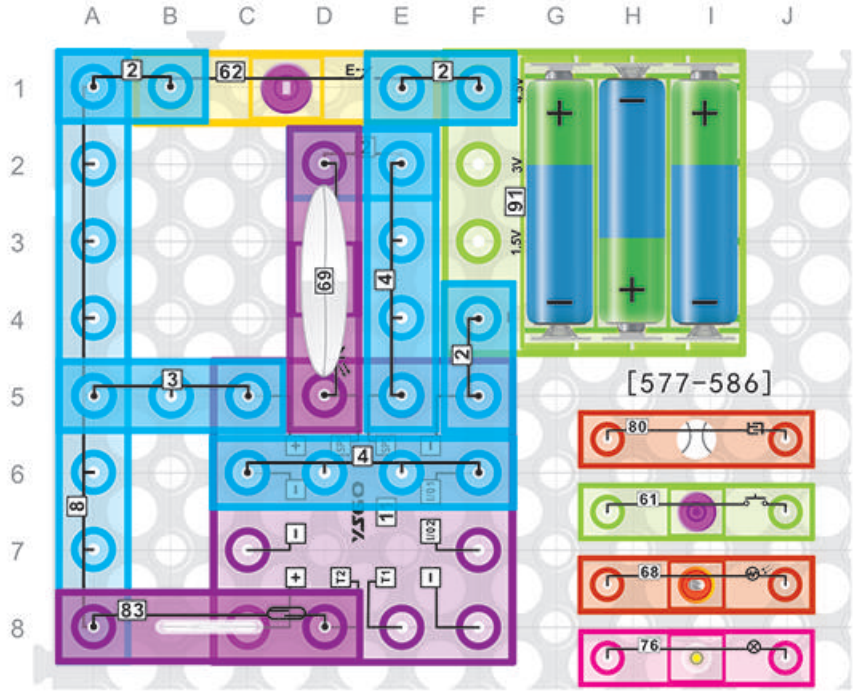
573.Touch Piece Controls the Intermittent Musical Door Bell
Replace the press switch[61] with touch piece[80], then turn on the switch [62], if you touch the touch piece[80] with any sheetmetal now, you can hear the intermittent music from the speaker[93].



574. Magnet Controls the Intermittent Musical Door Bell and LED
Build the circuit, can you see anything happens? Not yet, right?
Now keep touching the reed switch[83] with magnet[7], you can hear the intermittent music from the speaker[93], and also you can see the LED [69] is flashing. Fantastic!

575.Press Switch Controls the Intermittent Musical Door Bell and LED
Replace the reed switch[83] with the press siwtch[61], then press or release the press switch rhymically.

576.Touch Piece Controls the Intermittent Musical Door Bell and LED
Replace the reed switch[83] with touch piece[80], then touch the touch piece [80] with any sheetmetal.



577.Magnet Controls the Flashing LED
Build the circuit, then turn on the switch[62], the LED[69] will be flashing. Wait until the LED[69] is off, try to touch the reed switch[83] with magnet[7],wow, now you can see the LED[69] is flashing again with red light.

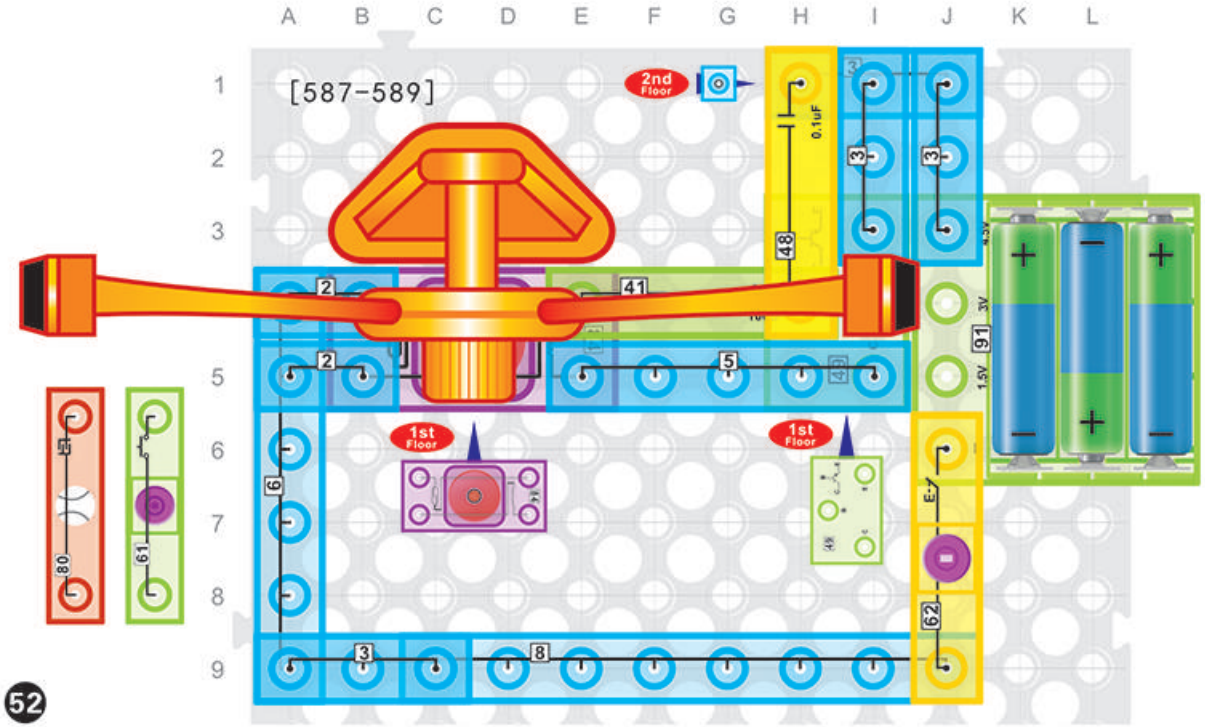
578.Touch Piece Controls the Flashing LED
Replace the reed switch[83] with touch piece[80], then turn on the switch[62], the LED[69] will be off later. If you want to turn on the LED[69] again, you just need to touch the touch piece[80] with sheetmetal.

579.Press Switch Controls the Flashing LED
Replace the reed switch[83] with the press switch[61], then turn on the switch[62], wait until you see the LED[69] is off. Now press the press switch[61], you can see the LED[69] is flash again.

580.Light Controls the Flashing LED
Replace the reed switch[83] with photoresistance[68], then turn on the switch[62]. Wait until you see the LED[69] is off, then cover the photoresistance[68] with your hands, the LED[69] will be flashing again.

581.Water Controls the Flashing LED
Replace the reed switch[83] with touch piece[80], then turn on the switch[62], Wait until you see the LED[69] is of. If you drop a drop of water on the touch piece[80], you can see the LED[69] is flashing again.

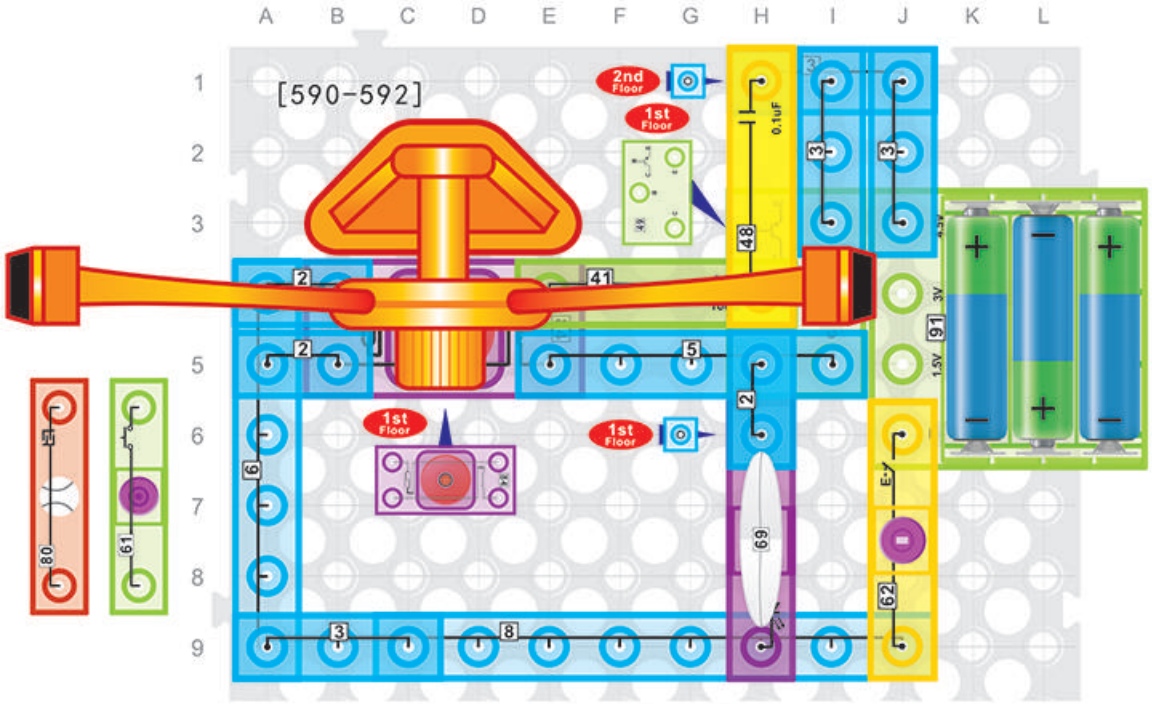
582.Magnet Controls the Flashing Lamp
583.Touch Piece Controls the Flashing Lamp
584.Press Switch Controls the Flashing Lamp
585.Light Controls the Flashing Lamp
586.Water Controls the Flashing Lamp
582-586, replace the LED[69] with the lamp[76] in the circuit of 577-581.



587.Magnet Controls the Windmill
Build the circuit, turn on the switch[62], then rotate the blade of the windmill[90] with your fingers, you can see the windmill start running.

588.Press Switch Controls the Windmill
Replace the switch[62] with the press switch[61], press the press switch[61], then rotate the blade of the windmill[90] with your fingers, you can see the windmill start running.

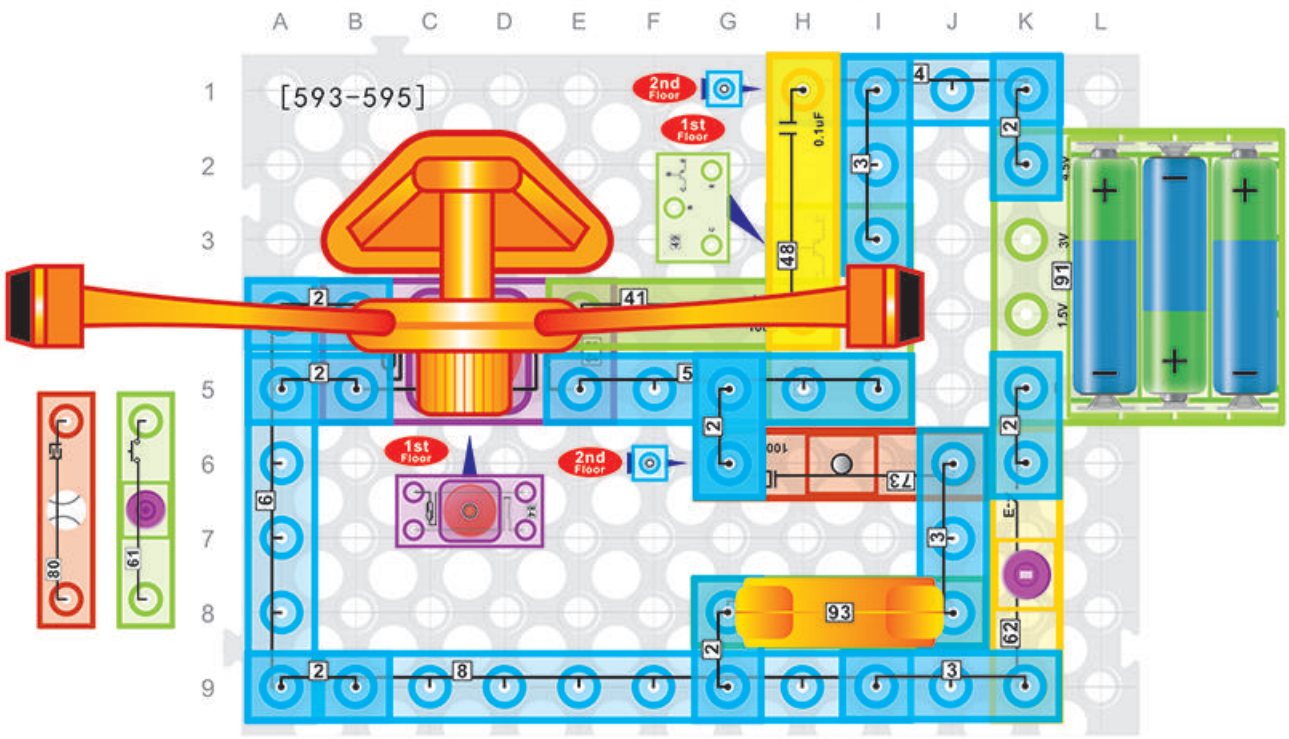
589.Touch Piece Controls the Windmill
Replace the switch[62] with touch piece[80], if you touch the touch piece[80] with sheetmetal, then rotate the blade of the windmill[90] with your fingers, you can see the windmill start running.



590.Magnetic Windmill and LED
Build the circuit, turn on the switch[62], rotate the blade of the windmill [90] with your fingers, you can see the magnetic windmill start running, and the LED[69] will keep flashing.

591.Press Switch Controls the Magnetic Windmill and LED
Replace the switch[62] with the press switch[61], if you press it (press switch[61]), you can see the magnetic windmill start running, and the LED[69] will keep flashing.

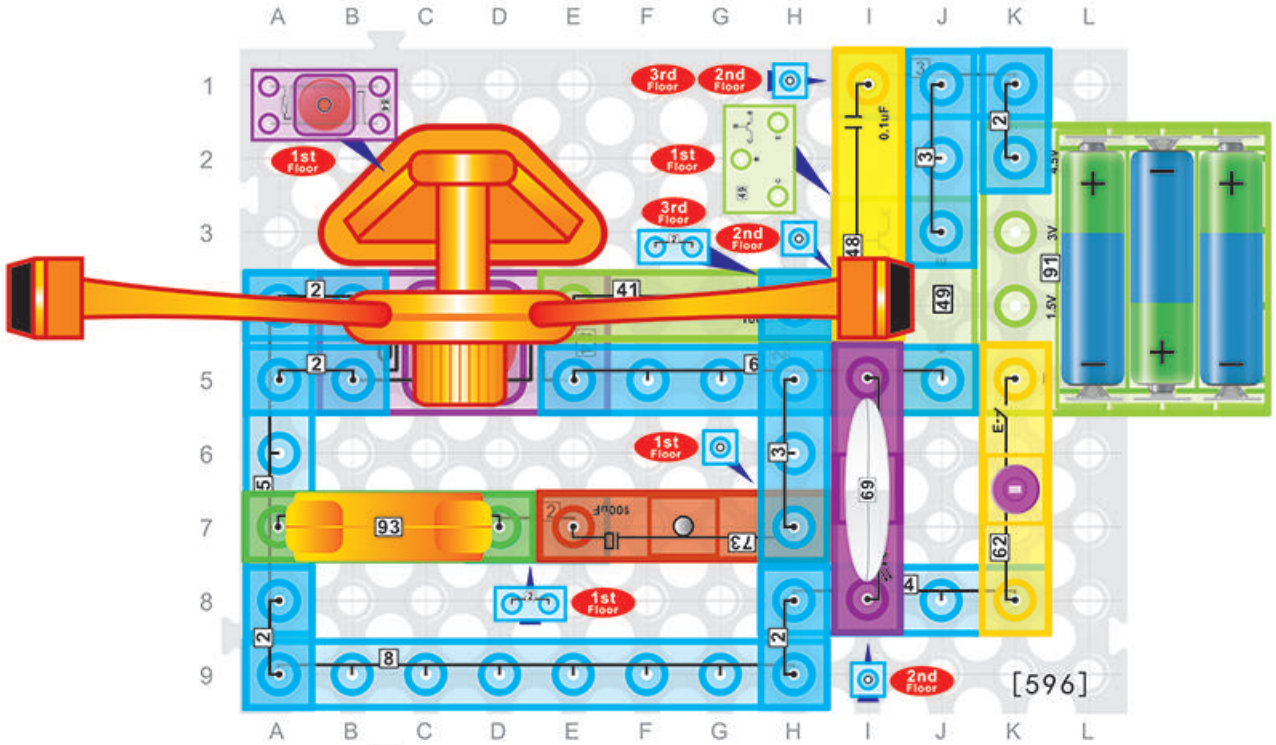
592.Touch Piece Controls the Magnetic Windmill and LED
Replace the switch[62] with touch piece[80], if you touch the touch piece[80] with sheetmetal, then rotate the blade of the windmill[90] with your fingers, you can see the magnetic windmill start running, and the LED[69] will keep flashing.



593.Switch Controls the Sounds and the Magnetic Windmill
Build the circuit, turn on the switch[62], if you rotate the blade of the windmill[90] with your fingers, you can see the magnetic windmill keep running, also you can hear the sounds like “Da Da…” from the speaker[93].

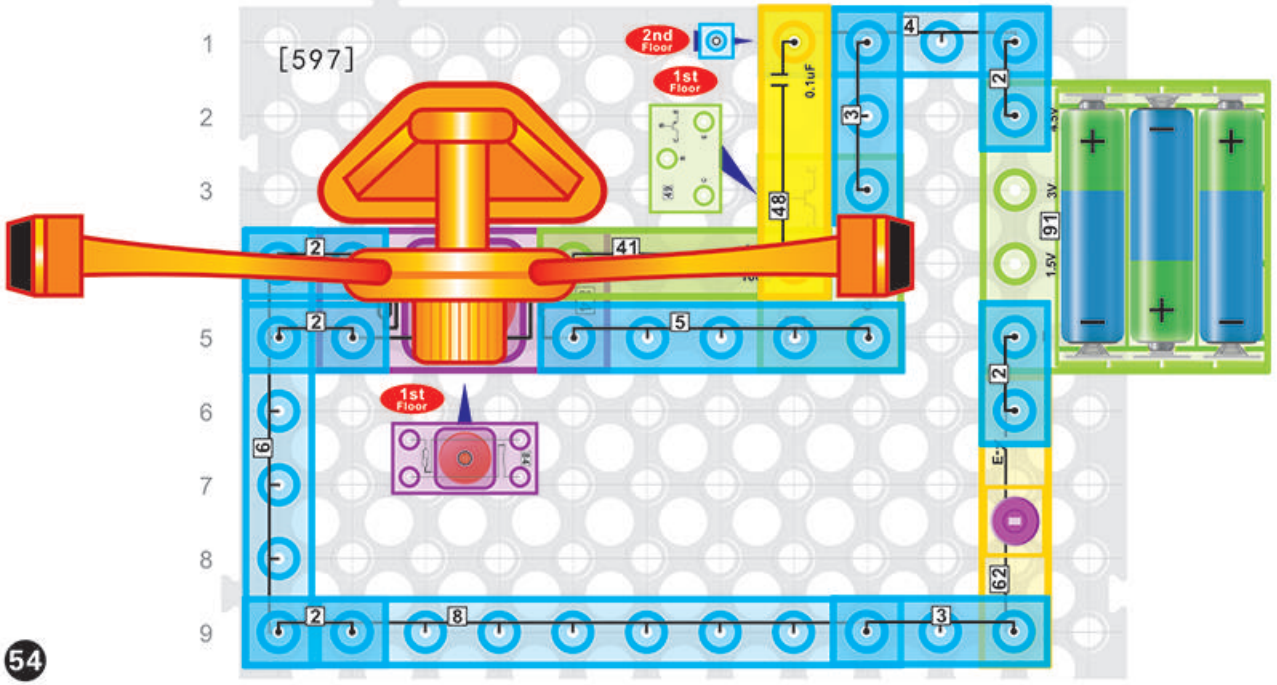
594.Press Switch Controls the Sounds and the Magnetic Windmill
Replace the switch[62] with the press switch[61], then press the press switch[61],if you rotate the blade of the windmill[90] with your fingers, you can see the magnetic windmill keep running, also you can hear the sounds like “Da Da…” from the speaker[93].

595.Touch Piece Controls the Sounds and the Magnetic Windmill
Replace the switch[62] with the touch piece[80], then touch the touch piece[80] with sheetmetal, if you rotate the blade of the windmill[90] with your fingers, you can see the magnetic windmill keep running, also you can hear the sounds like “Da Da…” from the speaker[93].



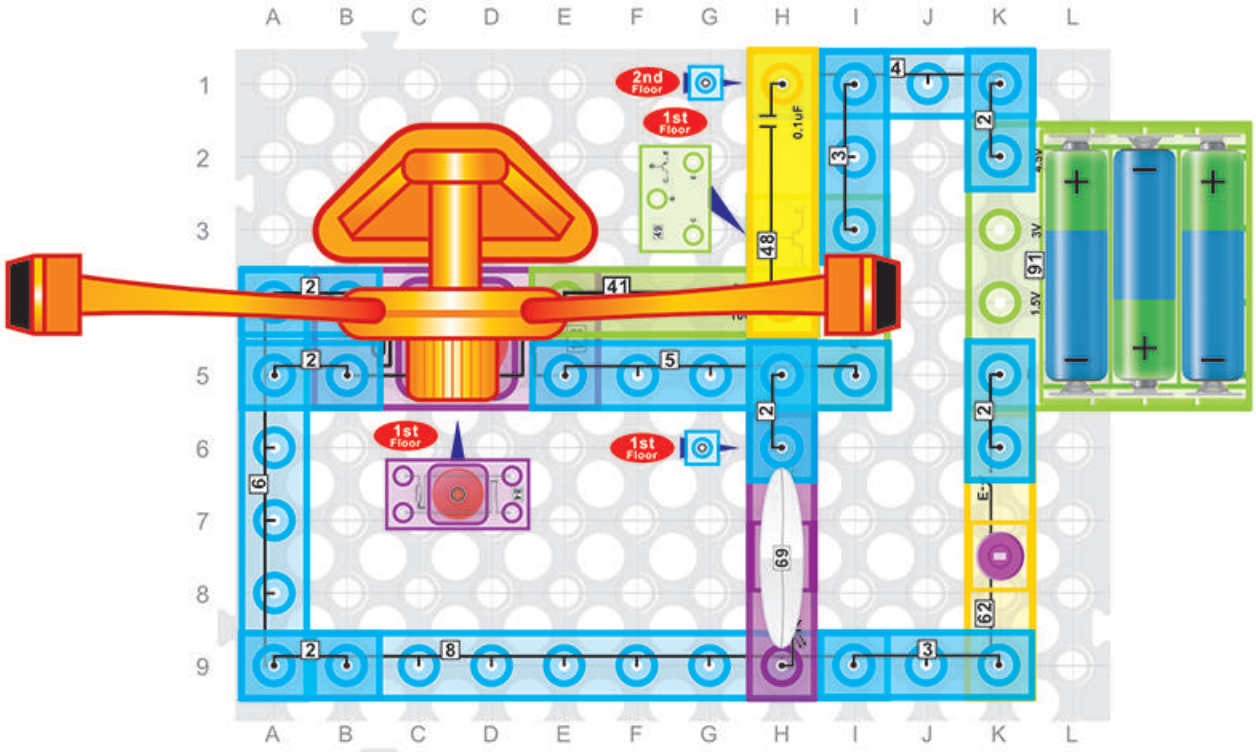
596.Switch Controls the Sounds, the Magnetic Windmill, and LED

Build the circuit, then turn on the switch[62], rotate the blade of the windmill[90] with your fingers, you can see the magnetic windmill keep running and the LED[69] is flashing, also you can hear the sounds like “Da Da…” from the speaker[93].

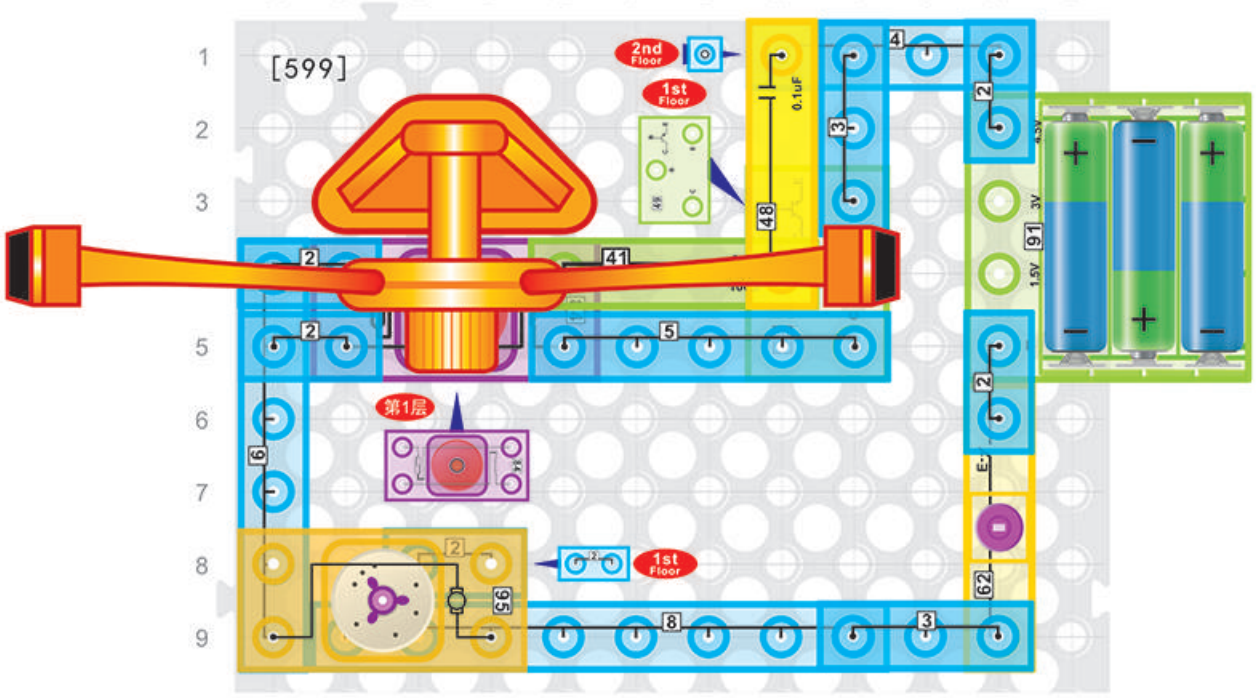


597.Fast Running of Magnetic Windmill

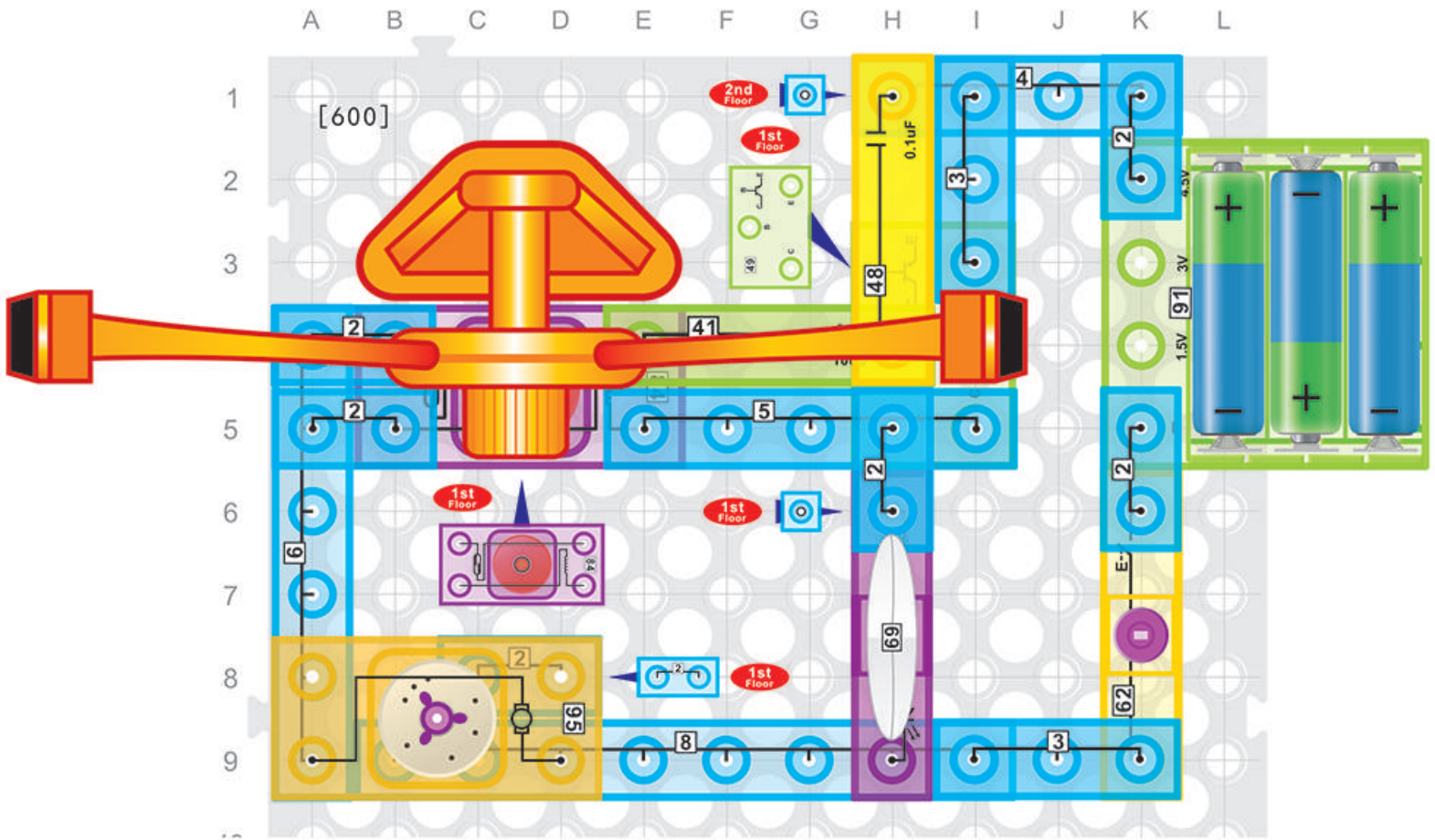
Build the circuit, turn on the switch[62], then rotate the blade of the windmill[90] with your fingers, you can see the magnetic windmill keep running fast.



598. Fast Running of Magnetic Windmill and LED
Build the circuit, turn on the switch[62], then rotate the blade of the windmill[90] with your fingers, you can see the magnetic windmill keep running fast, also the LED [69] will keep flashing with the windmill.



599.Control the Running of Magnetic Windmill and Motor
Build the circuit, turn on the switch[62], then rotate the blade of the windmill[90] with your fingers, you can see the magnetic windmill keep running fast, also the motor[95] will start working with the windmill.

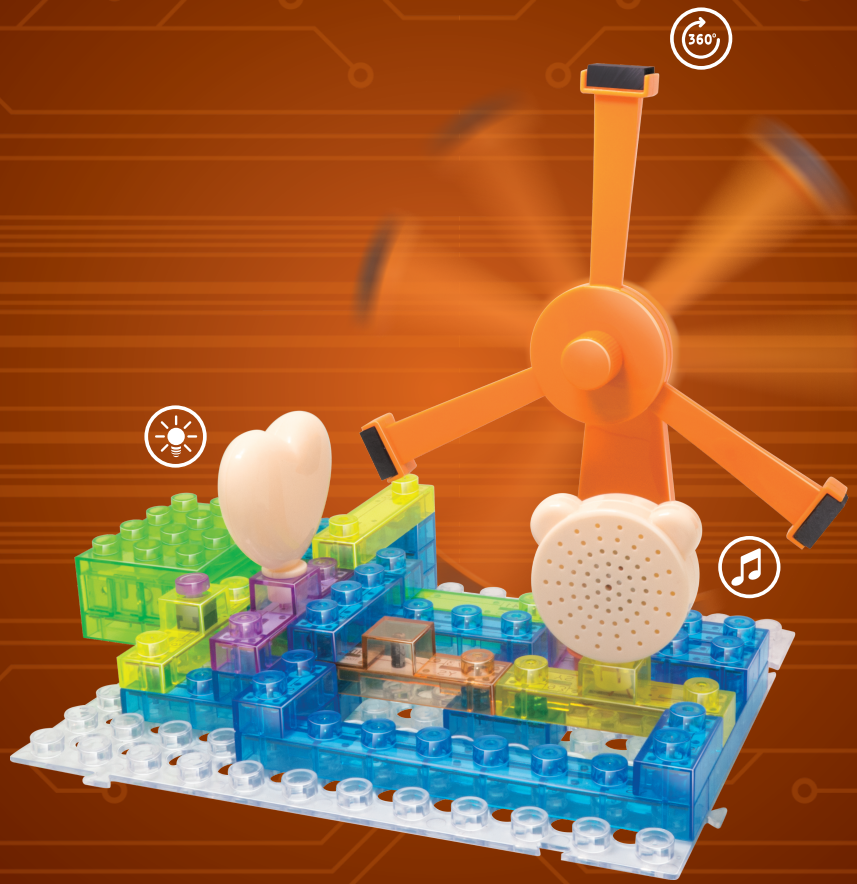


600.Control the Running of Magnetic Windmill, Motor and LED

Build the circuit, turn on the switch[62], then rotate the blade of the windmill[90] with your fingers, you can see the magnetic windmill keep running, while the motor [95] is working in Intermittent, and the LED[69] is flashing with the windmill.

DC13996

Lectrixs



For our full product line, visit us at

www.dimple.nyc

Follow us:

DimpleToy

DimpleToy

DimpleToy

@DimpleToy

DimpleToy