

Build Your Own 54 Super Scientific Set Instruction Manual

› engineer 54 science and play based activities

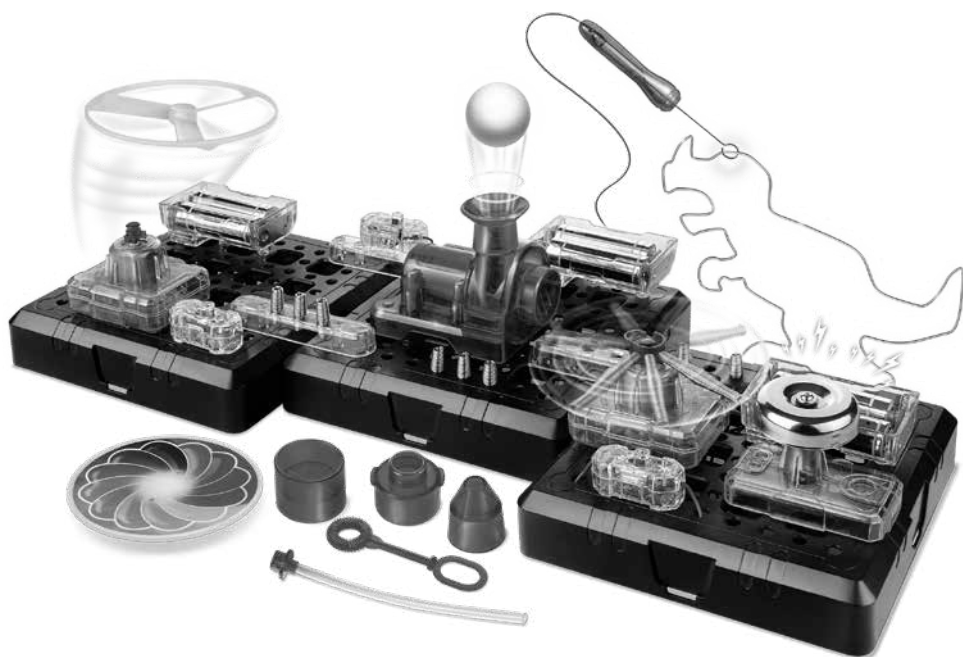
› engineer a challenging game with your friends



SCIENCE
TECHNOLOGY
ENGINEERING
MATHS



BATTERY
POWERED



 **WARNING:** CHOKING HAZARD
SMALL PARTS AND SMALL BALLS. NOT FOR
CHILDREN UNDER 3 YEARS.

WARNING: FOR SAFETY REASONS, REMOVE
ALL TAGS, LABELS AND PLASTIC FASTENERS
BEFORE GIVING THIS TOY TO YOUR CHILD.

WARNING: DO NOT AIM AT EYES OR FACE. DO
NOT USE PROJECTILES OTHER THAN THOSE
SUPPLIED BY MANUFACTURER.

WARNING: BATTERIES ARE TO BE INSERTED WITH THE CORRECT
POLARITY (+ AND -). DO NOT MIX DIFFERENT TYPES OF BATTERIES OR
NEW AND USED BATTERIES. NON-RECHARGEABLE BATTERIES ARE
NOT TO BE CHARGED. RECHARGEABLE BATTERIES ARE ONLY TO BE
CHARGED BY AN ADULT. THE SUPPLY TERMINALS ARE NOT TO BE
SHORT-CIRCUITED. REMOVE BATTERY FROM THE TOY WHEN NOT IN
USE FOR AN EXTENDED TIME OR WHEN BATTERIES BECOME
EXHAUSTED. BATTERY INSTALLATION BY AN ADULT IS REQUIRED.
DISPOSE OF BATTERIES RESPONSIBLY. DO NOT DISPOSE OF IN FIRE.

WARNING: CONTAINS FUNCTIONAL
SHARP POINT ON LEADS.

WARNING: HAIR ENTANGLEMENT MAY
OCCUR IF THE CHILD'S HEAD IS TOO
CLOSE TO THE MOTORISED UNIT OF
THIS TOY. ADULT SUPERVISION AND
ASSISTANCE REQUIRED.

PRODUCT MAY VARY SLIGHTLY FROM IMAGE SHOWN.
PLEASE KEEP THE PACKAGING FOR FUTURE REFERENCE.



REQUIRES 6 X 1.5V AA BATTERIES (NOT INCLUDED).

WARNING

Adult supervision and assistance is required.

This unit is only for use by children aged 8 years and older.

Not suitable for children under the age of 3 years due to small part(s) and component(s) - CHOKING HAZARD.

Read and follow all instructions in the manual before use.

This toy contains small parts and functional sharp points on components. Keep away from children under the age of 3 years.

6 x AA size batteries are required (not included)

Please retain the information and this manual for future reference.

Instructions for parents are included and have to be observed

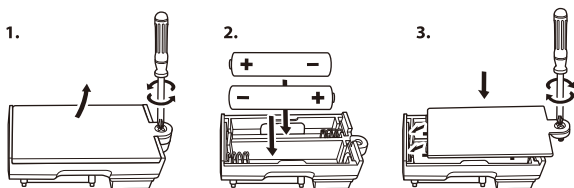
This product contains small ball which may break off and cause a choking hazard. Not suitable for children under 36 months.

Do not aim at eyes and face. Do not use improvised projectiles.

Warning. Do not use close to the ear! Misuse may cause damage to hearing.

BATTERY INFORMATION

To insert batteries please unscrew battery cover with a screw driver. Insert the required batteries in accordance with battery polarity with + and - ends in the right position and then fix screw on the battery cover to close the battery compartment case.



Insert batteries only after assembling and wires are connected.

Use 6 x AA size batteries (not included).

Remove batteries when not in use.

Batteries must be inserted with the correct polarity.

Non-rechargeable batteries are not to be recharged.

Re-chargeable batteries are only to be charged under adult supervision.

Re-chargeable batteries are to be removed from the toy before being charged.

Different types of batteries or new and used batteries are not to be mixed.

Exhausted batteries are to be removed from the toy.

The supply terminals are not to be short-circuited.

Only batteries of the same or equivalent types are to be used.

Do not dispose of the batteries in fire.

Do not mix old and new batteries.

Do not mix alkaline, carbon zinc and re-chargeable batteries.

Warning ! Do not short-circuit the battery terminals and spring connectors as this may cause overheating. Do not lock the motor or other moving parts as this may cause overheating.

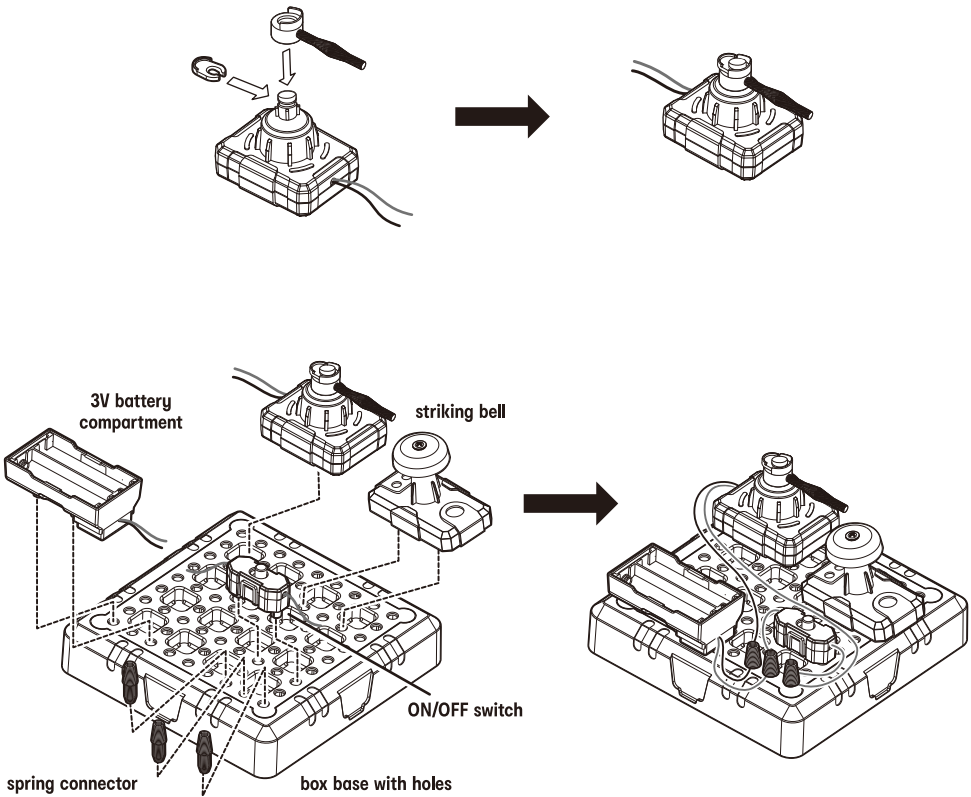
READ & SAVE

ASSEMBLY & OPERATION INSTRUCTIONS

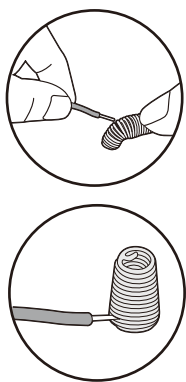
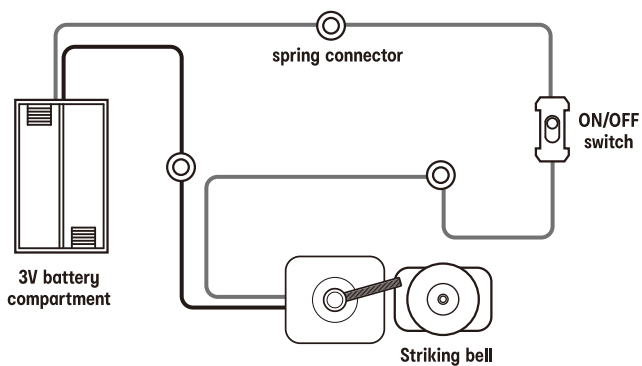
There are three basic individual units in this kit, namely MAZE CHALLENGE, TURBO AIR and FLYING DISC. By changing different circuit connections and combinations, it can establish play sets of diverse functions. To ensure the success of the ASSEMBLY, be sure to read these instructions and review the diagrams thoroughly before starting.

A practice of basic circuit connection

Below is a demonstration of connecting a simple circuit. You can start with this simple circuit as a practice before moving to other advanced circuits. First of all, take out the components shown in below diagram from your amazing connection kit. They may be packed in different bags. Then install them like the pictures shown.



BASIC CONNECTION PRINCIPLE

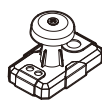


This is now complete! Insert 2 x AA size batteries to the 3V battery compartment. Turn the switch on. The circuit is connected and current can flow in the circuit. Now the bell will ring!

Maze Challenge

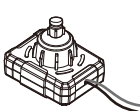
CONTENTS:

a



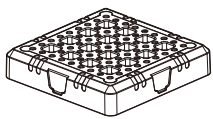
1 x bell module

b



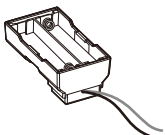
1 x motor module

c



1 x box base with holes

d



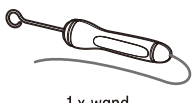
1 x 3V battery compartment

e



1 x ON/OFF switch

f



1 x wand

g



6 x spring connector

h



1 x metal wire

i



1 x spring pole

j



1 x C-shape plastic lock

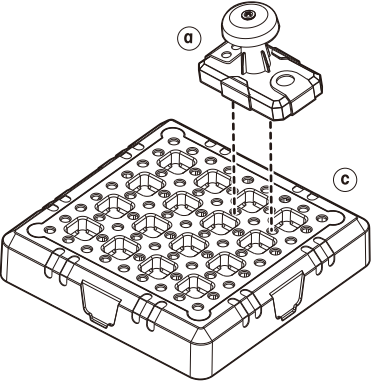
k



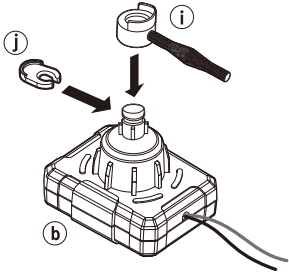
1 x colour filter

BASIC ASSEMBLY:

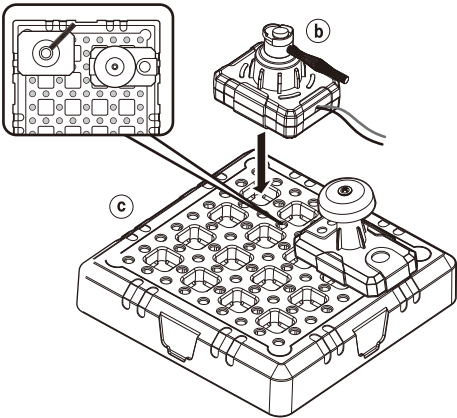
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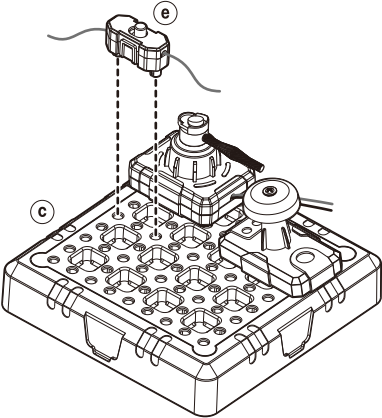
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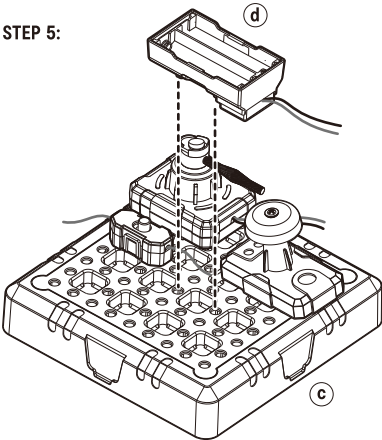
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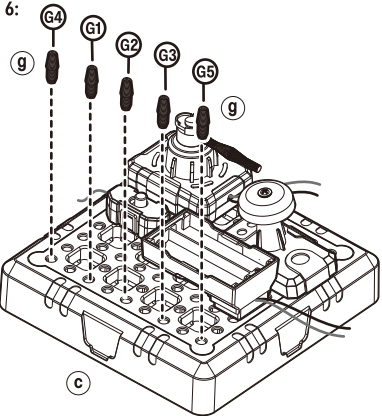
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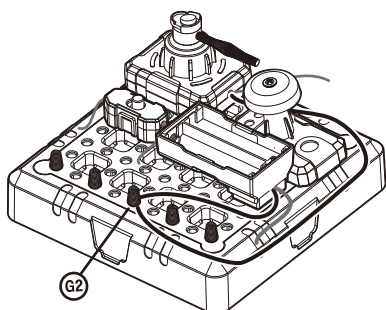
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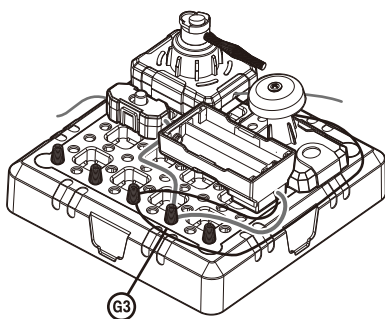
STEP 6:



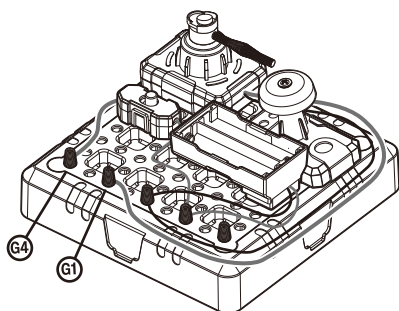
STEP 7:



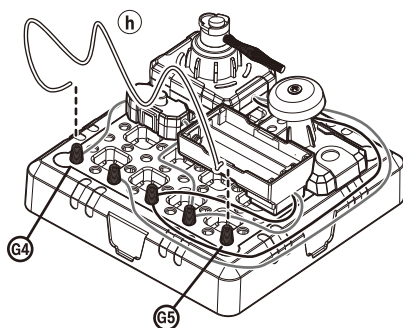
STEP 8:



STEP 9:

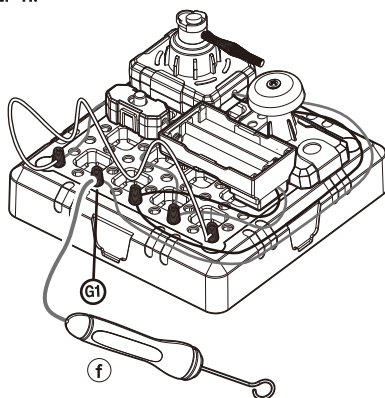


STEP 10:



10. Fix the metal wire (08) on the spring connectors (7d) and (7e).

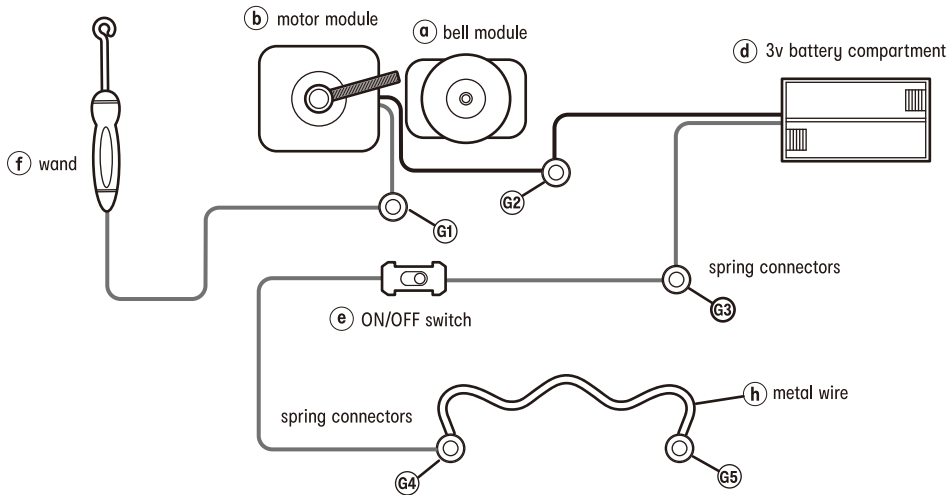
STEP 11:



11. Connect the wand (06) to the spring connector (7a).

BASIC CONNECTION PRINCIPLE

Wire connections	Spring (G1)	Spring (G2)	Spring (G3)	Spring (G4)	Spring (G5)
3V battery compartment (d)		black	red		
ON/OFF switch (e)			red	red	
motor module (b)	red	black			
metal wire (h)				silver	silver
wand (f)	red				



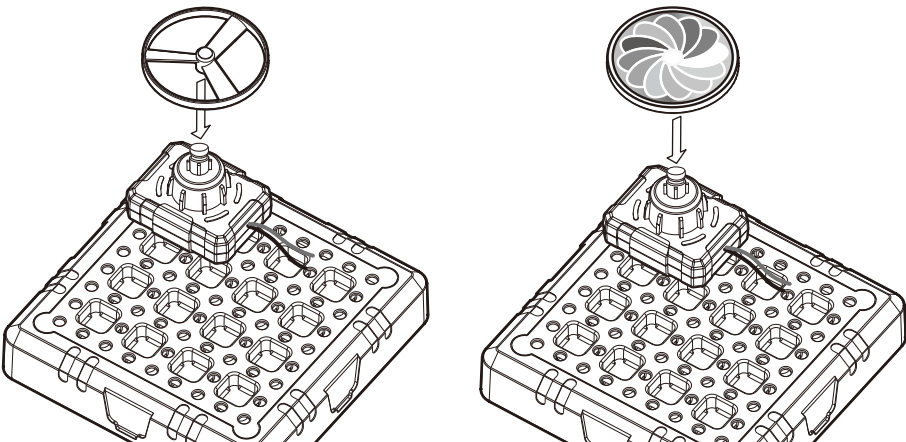
How to play

This is now complete! Insert 2 x AA size batteries to the 3V battery compartment. Turn the switch on and put the ring of the wand around the metal wire via the open area of the ring. Keep your hand steady and carefully move the ring of the wand through the metal wire. If the ring touches the metal wire, the bell will ring and you lose!

Complete the maze to achieve the fastest time against your friends. Bend the metal wire to create different levels of difficulty.

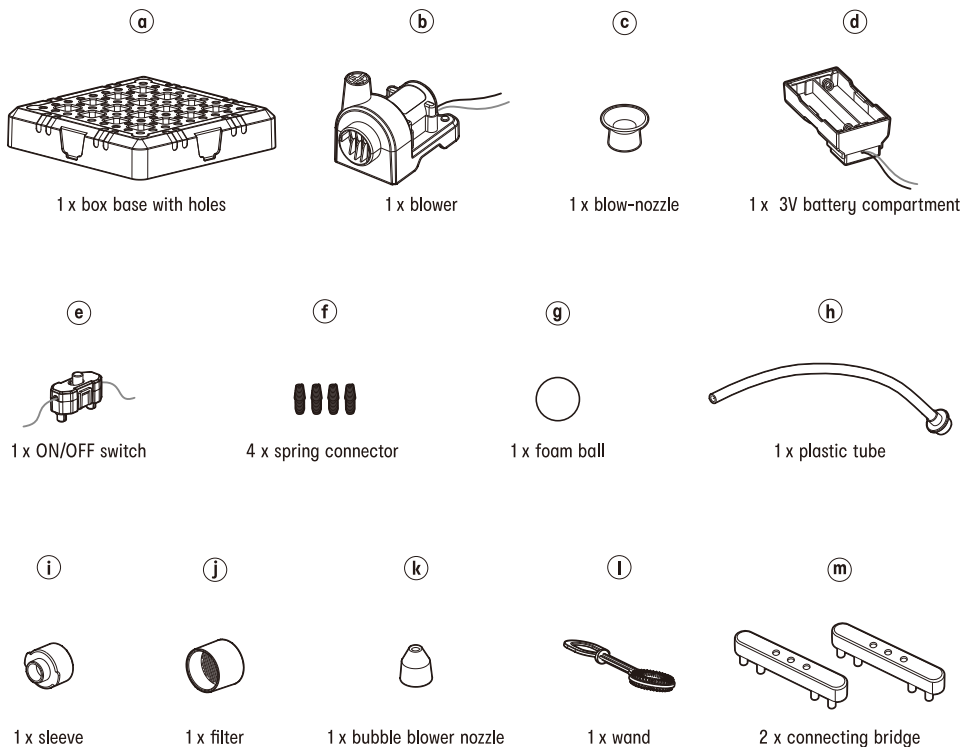
Please ensure the switch is off and batteries are removed from the battery compartment before bending the metal wire.

You can switch to use other functions by replacing the spring pole with the flying disc or colour filter.



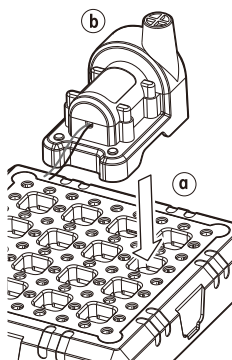
Turbo Air

CONTENTS:

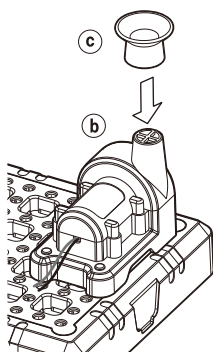


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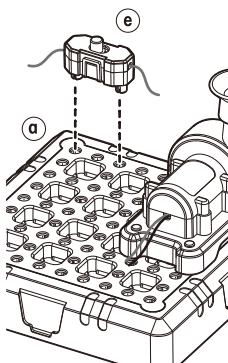
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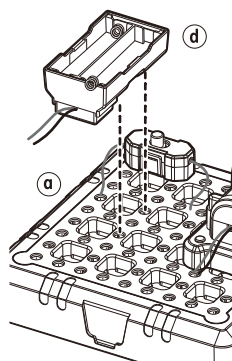
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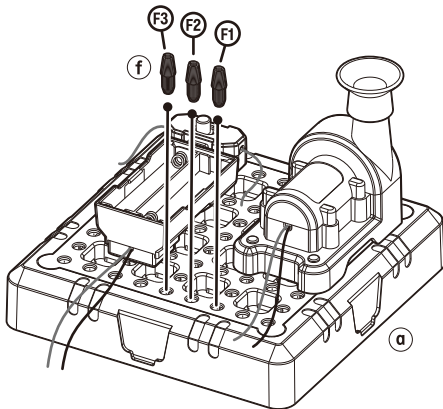
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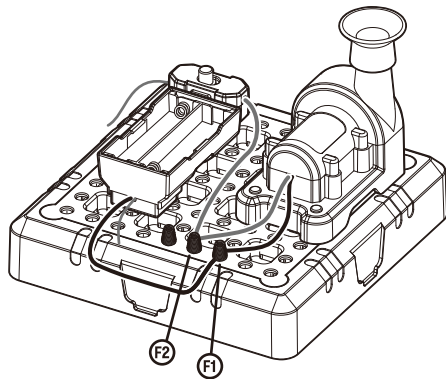
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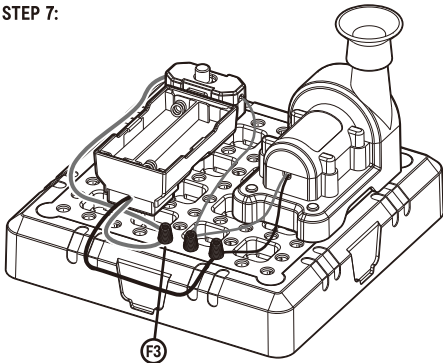
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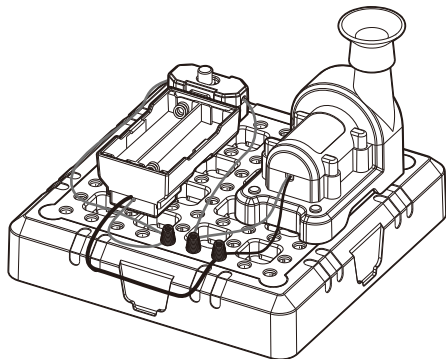
STEP 6:



STEP 7:

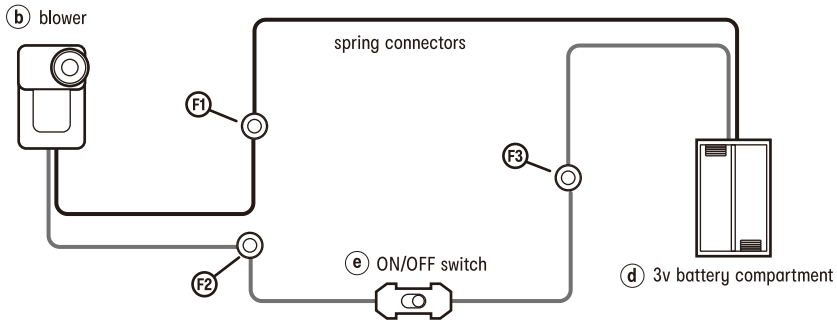


STEP 8:



BASIC CONNECTION PRINCIPLE

Wire connections	Spring (F1)	Spring (F2)	Spring (F3)
3V battery compartment (d)	black		red
ON/OFF switch (e)		red	red
blower (b)	black	red	



How to play

Insert 2pcs AA (LR6) size batteries to the 3V battery compartment. Turn the switch on and put the foam ball (g) above the blow-nozzle. You can see the ball floating in the air!

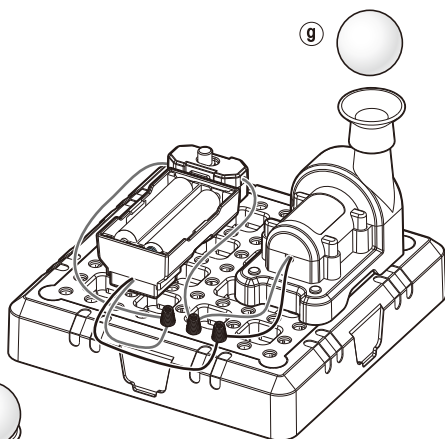
You can switch to using the other functions of this turbo air.

› To switch to bubble blower, simply remove foam ball (g) and blow-nozzle (c) from the blower (b). Then install the bubble blower nozzle (k) onto the blower (b). Now the setup is done! Dip the wand (l) into soap solution. Then put the wand (l) above the bubble blower nozzle (k). The air flow from the bubble blower nozzle (k) will blow the film into a bubble.

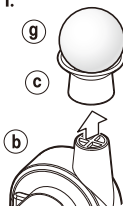
[The soap solution is not supplied with this toy. The distance between the wand (l) and bubble blower nozzle (k) will affect the size of the bubble and even the effect!]

› To switch to vacuum cleaner, remove foam ball (g) and blow-nozzle (c) from the blower (b). Then install the filter (j) to the blower (b), and the sleeve (i) onto the filter (j), and plastic tube (h) onto the sleeve (i). Now the vacuum cleaner toy is made! Switch on the unit and the plastic tube (h) will suck dirt into the filter (j)!

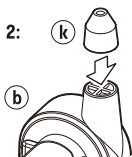
[Remember to take out the filter (j) and clean the dirt on it after using. This is the same as the maintenance of a real vacuum cleaner!]



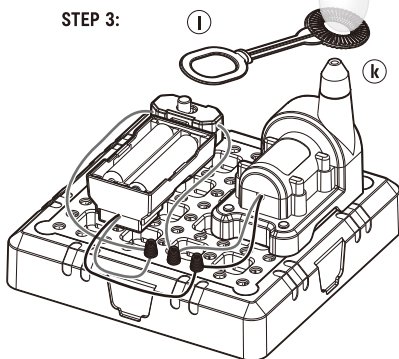
STEP 1:



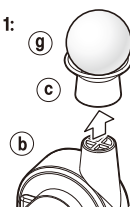
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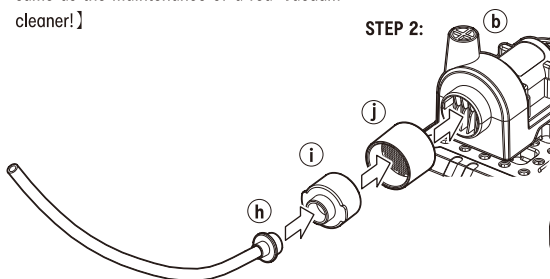
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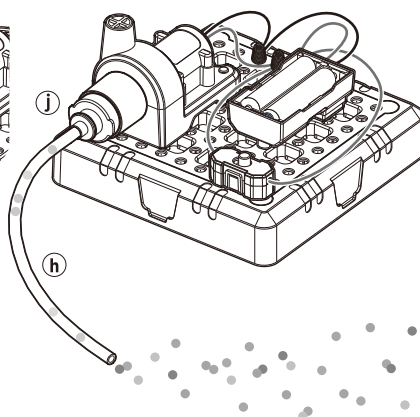
STEP 1:



STEP 2:

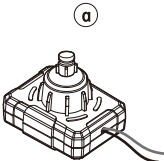


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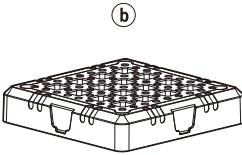


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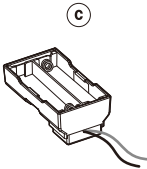
Flying Disc



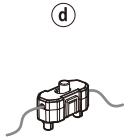
1 x motor module



1 x box base with holes



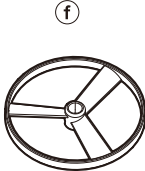
1 x 3v battery compartment



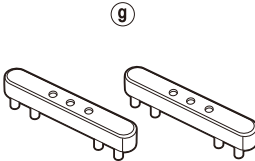
1 x ON/OFF switch



4 x spring connectors



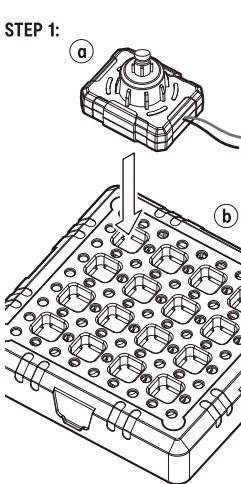
1 x flying disc



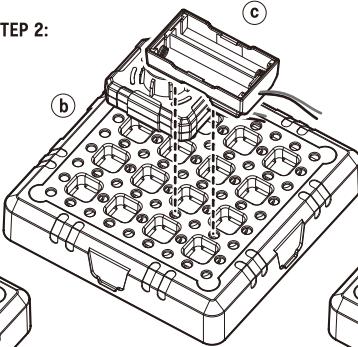
2 x connecting bridges

BASIC ASSEMBLY:

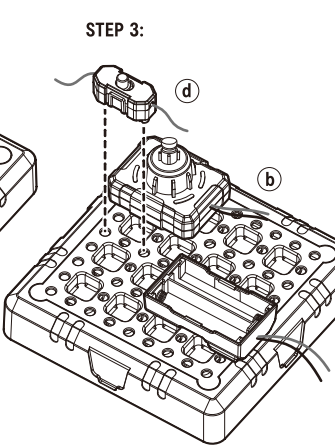
STEP 1:



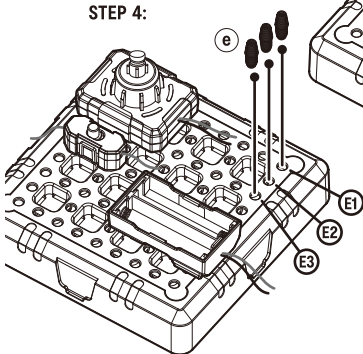
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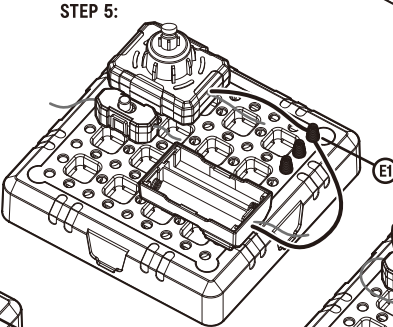
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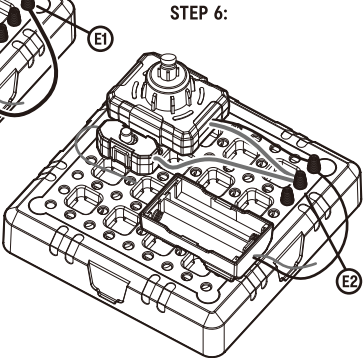
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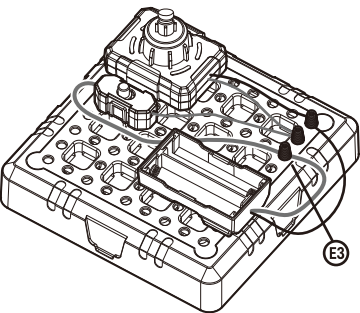
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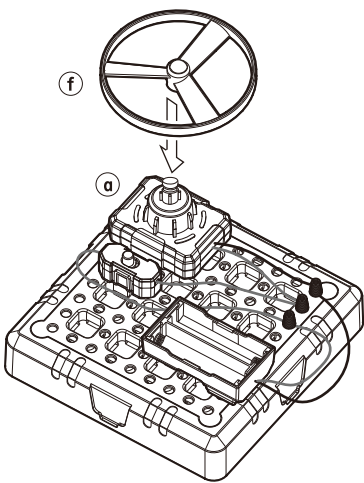
STEP 6:



STEP 7:



STEP 8:

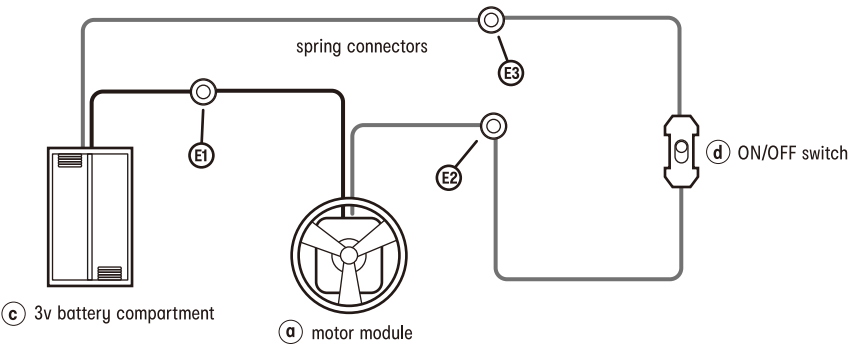


BASIC CONNECTION PRINCIPLE

Wire connections	Spring (E1)	Spring (E2)	Spring (E3)
3V battery compartment (c)	black		red
ON/OFF switch (d)		red	red
motor module (a)	black	red	

How to play

Insert 2pcs AA size batteries to the battery compartment. Turn on the switch and wait for a few seconds then turn off the switch. You can now see the disc fly up in the air.

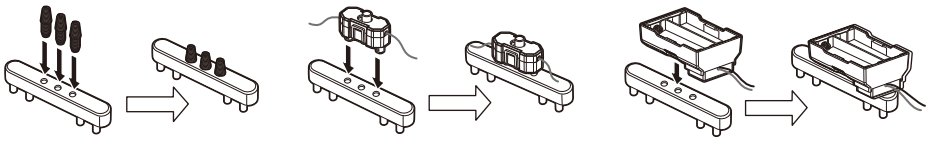


FOR MORE CONNECTING FUN!

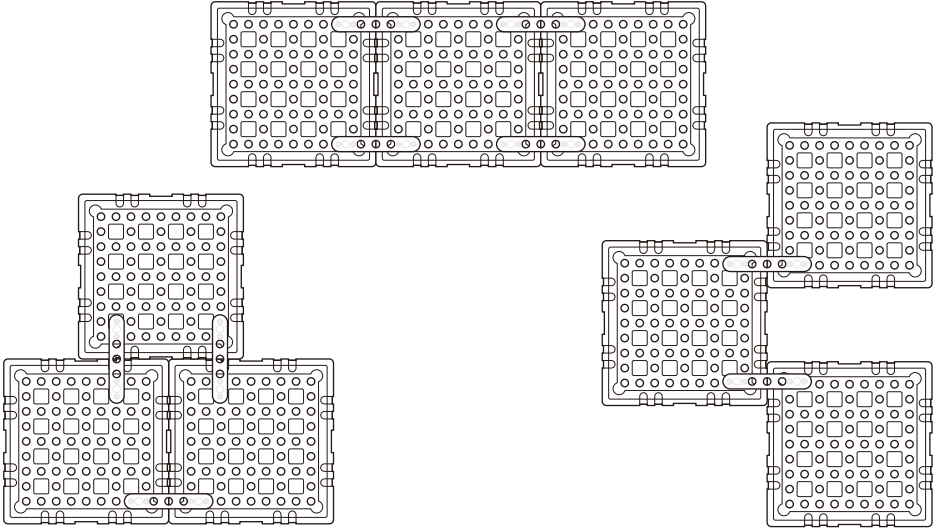
After you have successfully assembled the basic individual units, you can create more exciting interactions with the **AMAZING MAZE CHALLENGE**, **AMAZING TURBO AIR** and **AMAZING FLYING DISC** together! Here are some basic things to note when using connecting bridges to connect these units together:

If needed, you can adjust the position of the assembled parts on the box base with holes to suit the **2in1** or **3in1** connections. There's no need to keep their position exactly as the basic assembly. You can adjust their positions so long as the circuit connection is correct as per the instructions.

There are 3 holes on each connecting bridge. Therefore the switch or spring or other things can be installed onto the connecting bridges. This is useful when you find the box base with holes is crowded and hard to find room on it. These diagrams are examples:



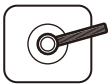
For **3in1** connections, you can have different connecting arrangements. Below figures are examples. You can decide or modify the arrangement to make your own style! Just make sure that the circuit connection is correct as per the instruction.



How to Connect

Put the 2 or 3 box bases together. Use connecting bridges to connect them firmly. Then follow below connecting diagrams to connect!

Connection symbols



motor module with spring pole



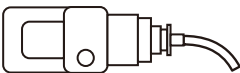
bell module



motor module with flying disc



motor module with colour filter



turbo air(mini vacuum)



turbo air(floating ball)



turbo air(blowing bubbles)



spring



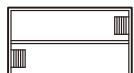
metal wire



wand

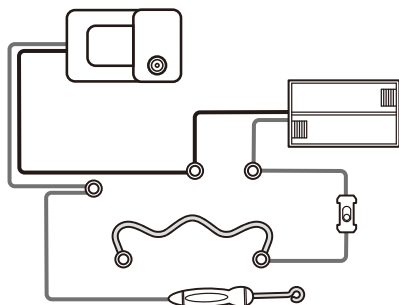
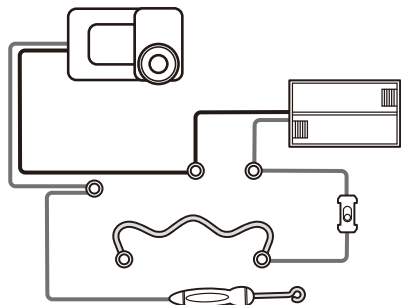
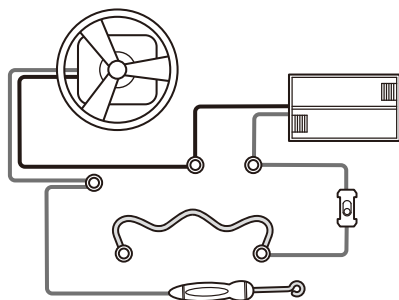
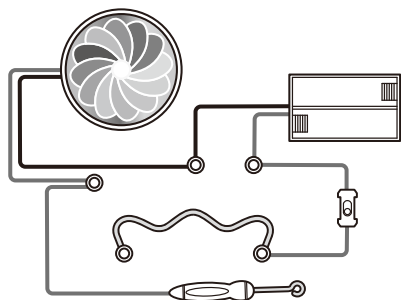
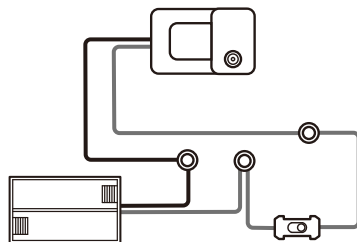
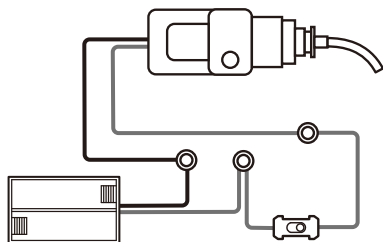
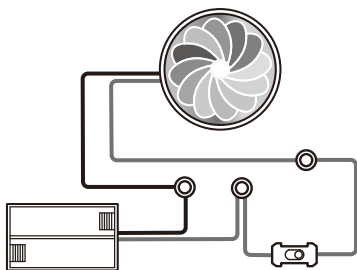
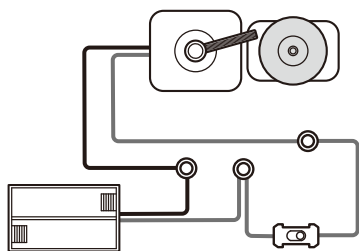


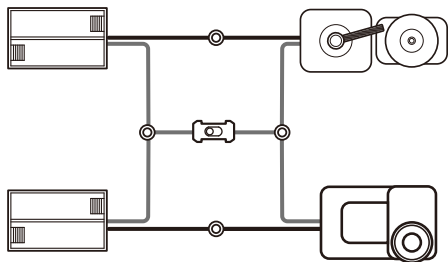
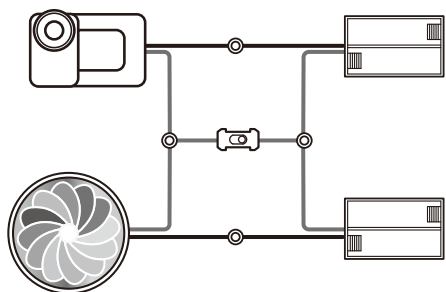
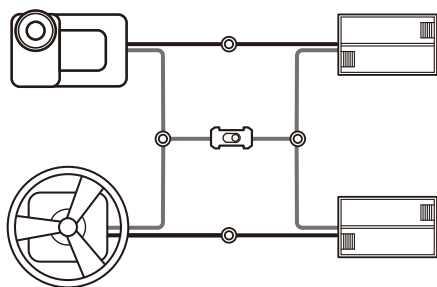
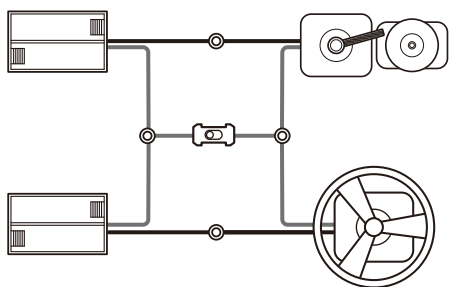
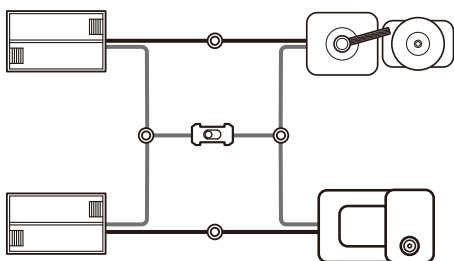
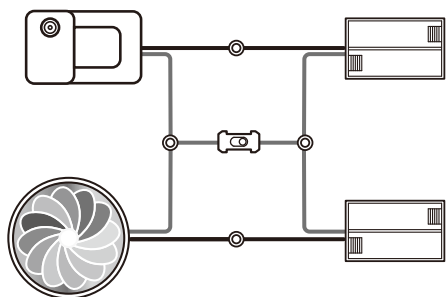
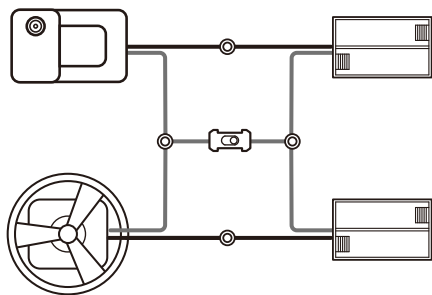
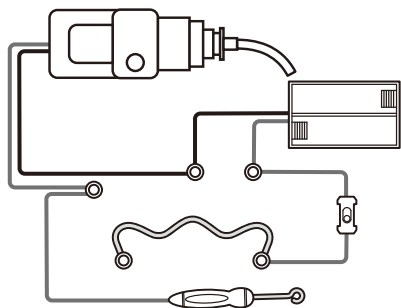
ON/OFF switch

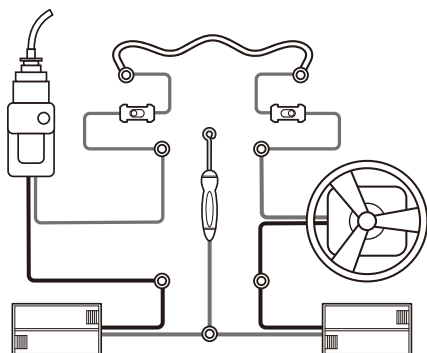
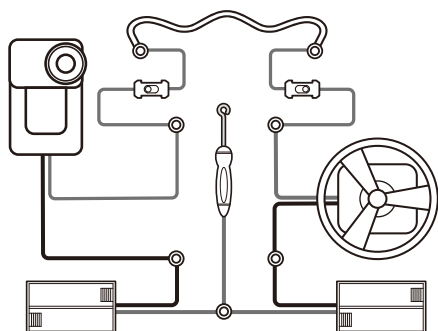
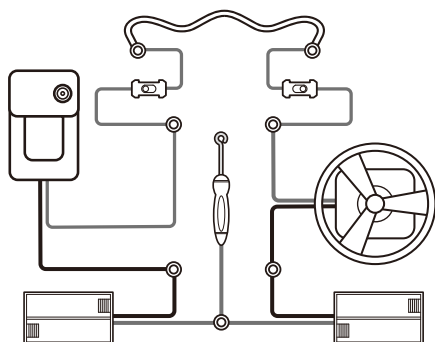
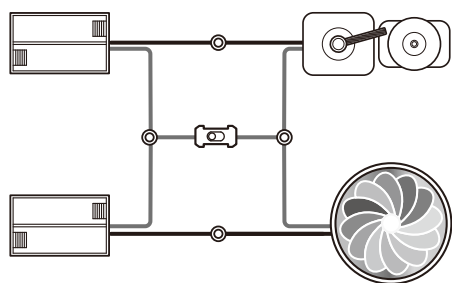
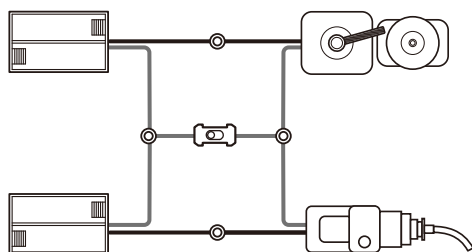
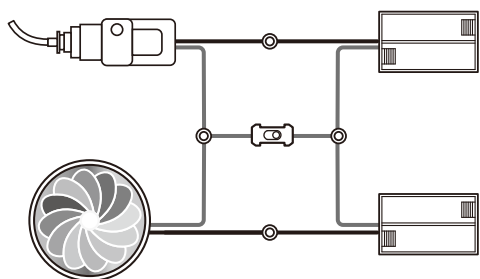
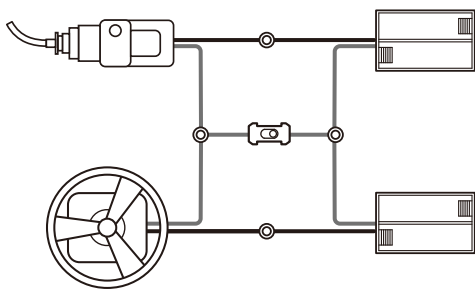
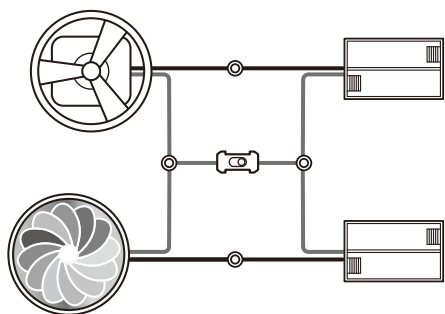


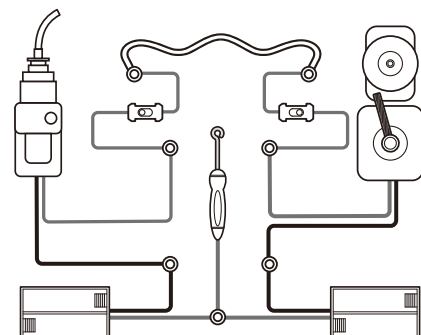
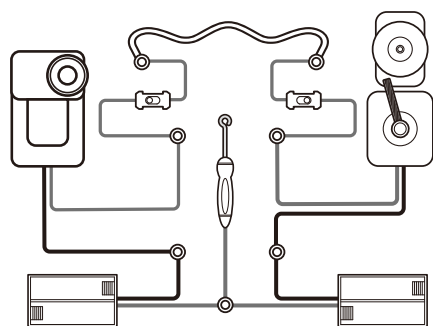
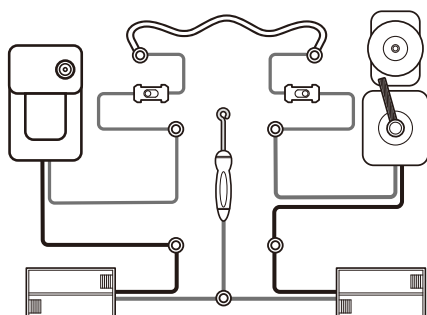
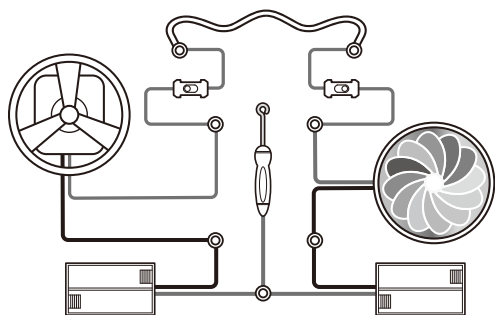
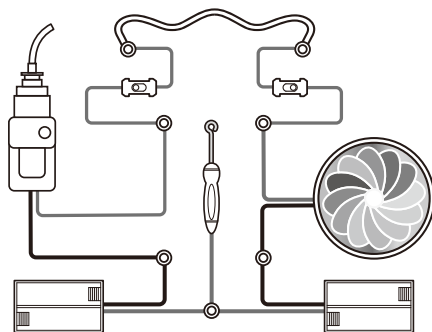
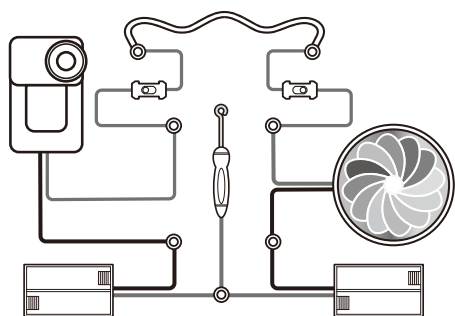
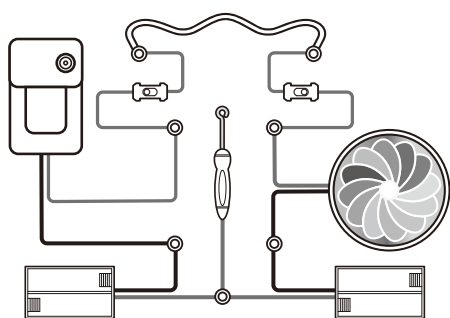
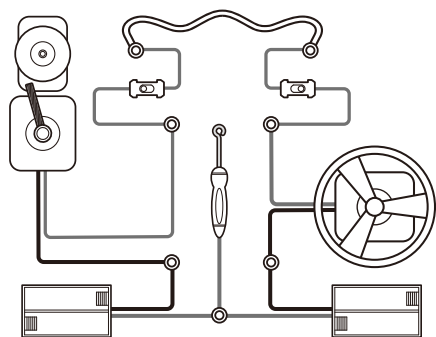
3V battery compartment

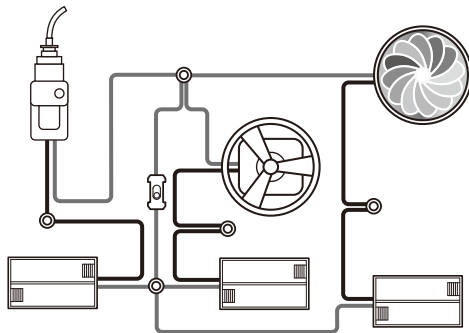
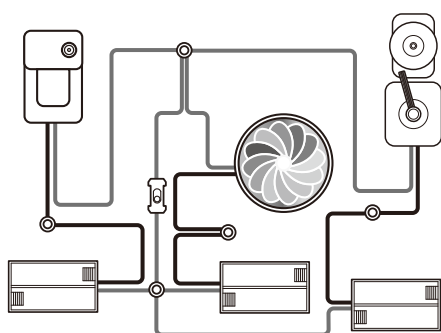
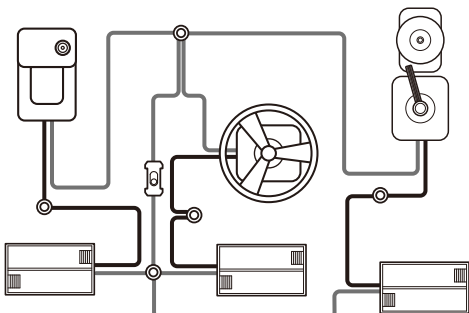
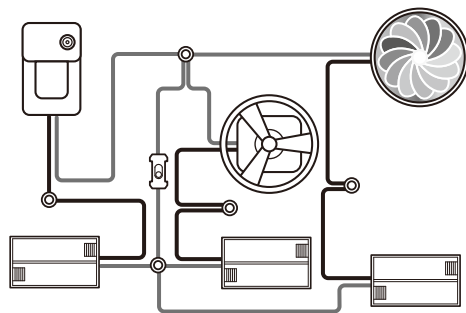
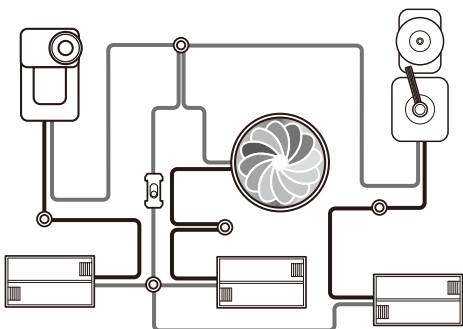
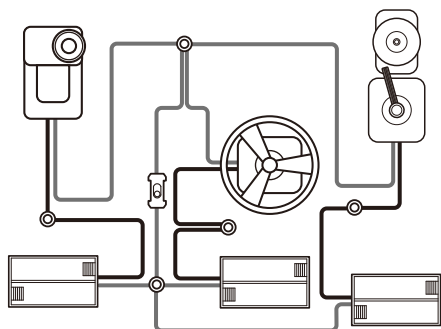
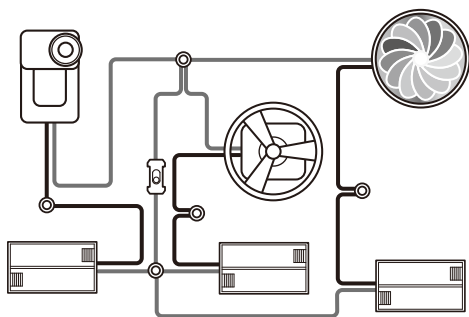
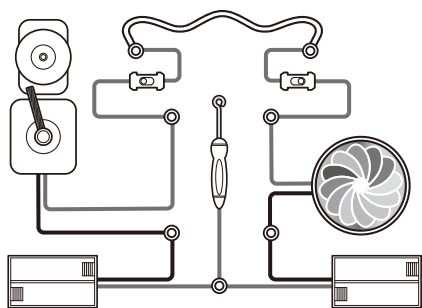
Connection diagrams

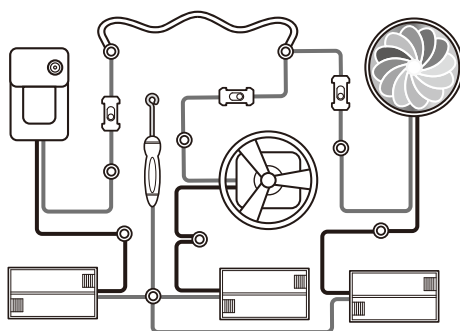
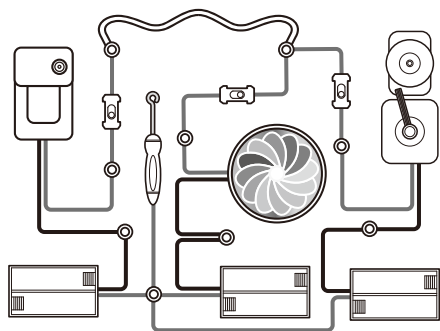
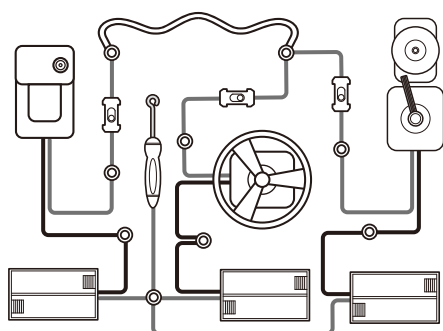
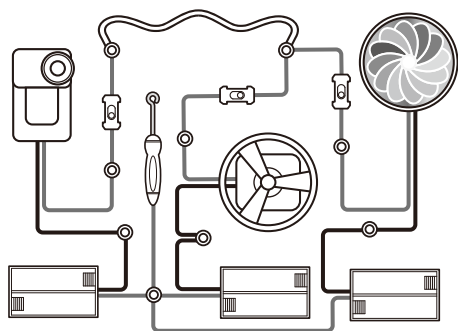
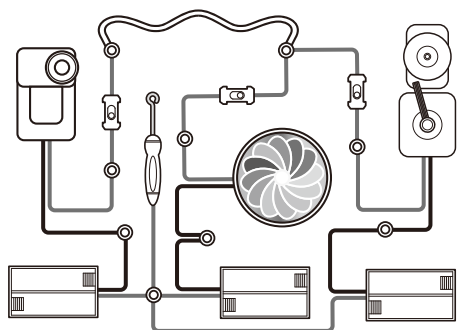
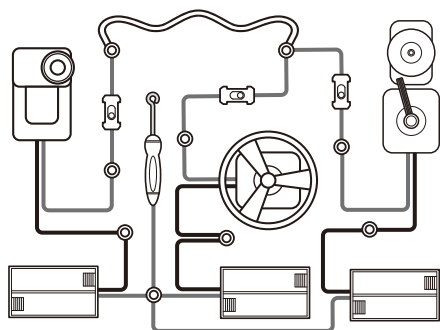
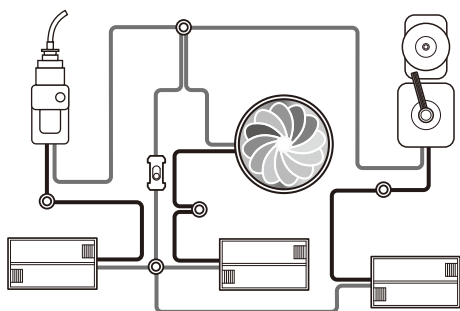
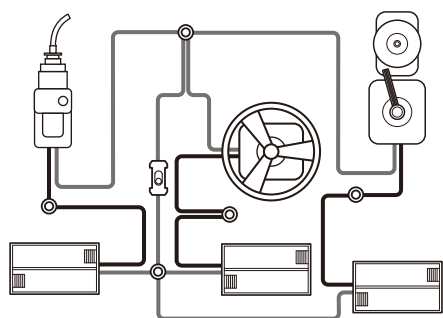


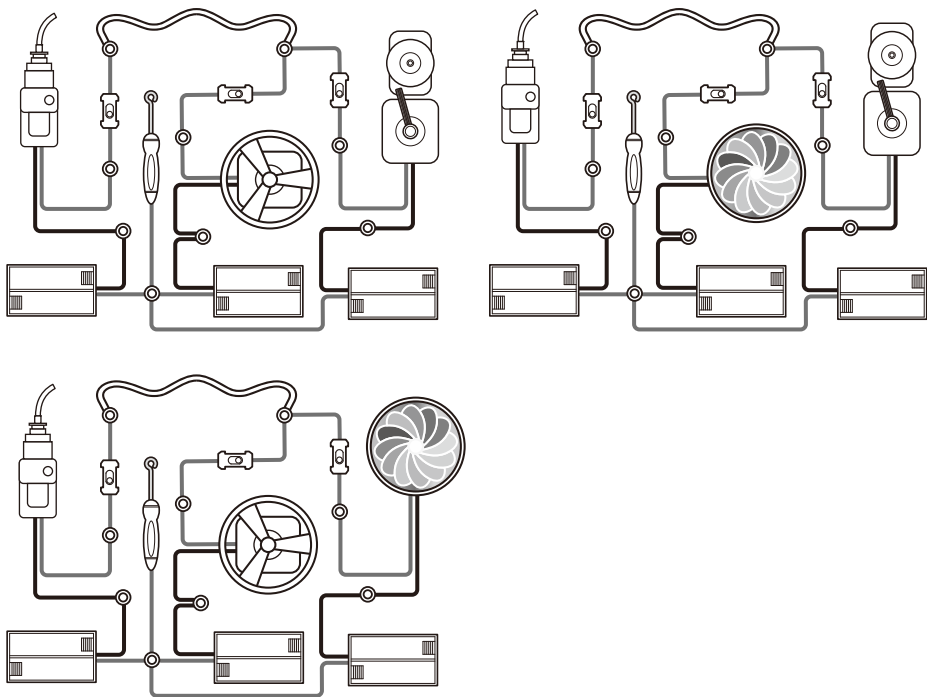












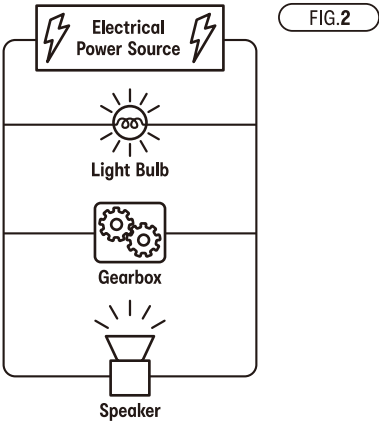
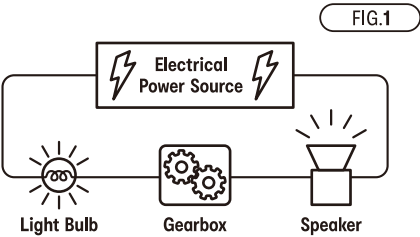
EDUCATIONAL HINTS

Series and Parallel Connection

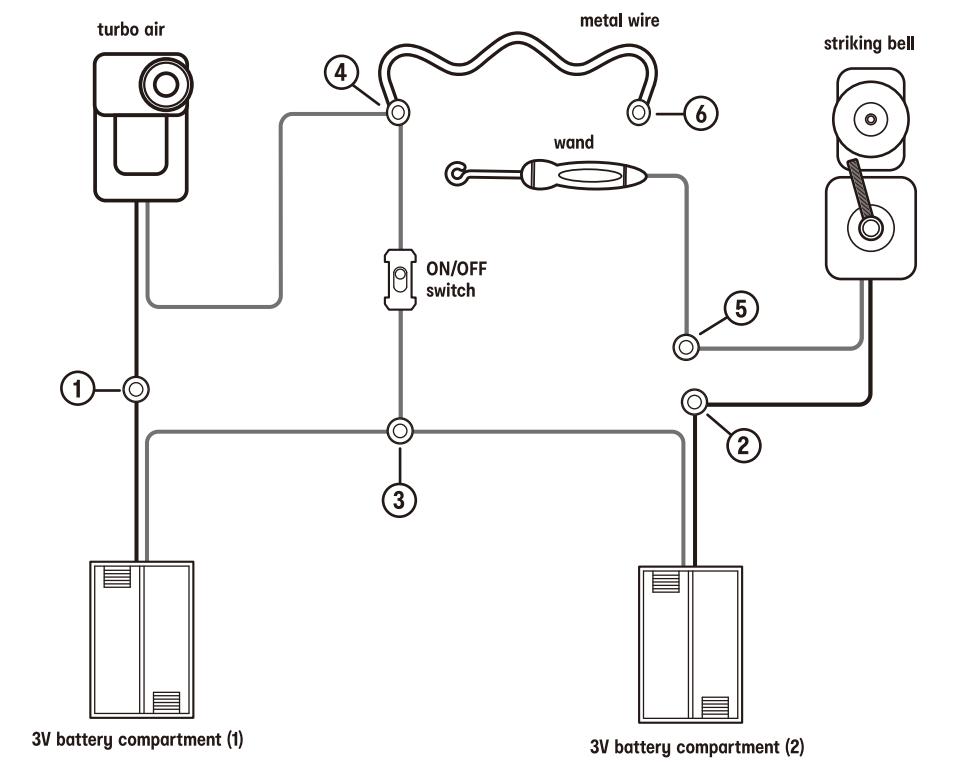
Note: For the purpose of demonstration, the below diagrams are general electrical circuits in our daily life only. They are not circuits for these kits.

The circuit shown in fig.1 is a series circuit. It involves series connection. As electricity flows in a single path, the current flow through each device will be the same. However, if any one of the device is broken, the circuit will disconnect and cannot function.

The circuit shown in fig.2 is a parallel circuit. It involves parallel connection. Each electrical device is connected in parallel. If one device is broken, the other devices can still work.



When you have skilled through this set, you can even design your own circuit to have different play patterns! Below is an example of creating an alternate 2in1 circuit for an alternate play effect:

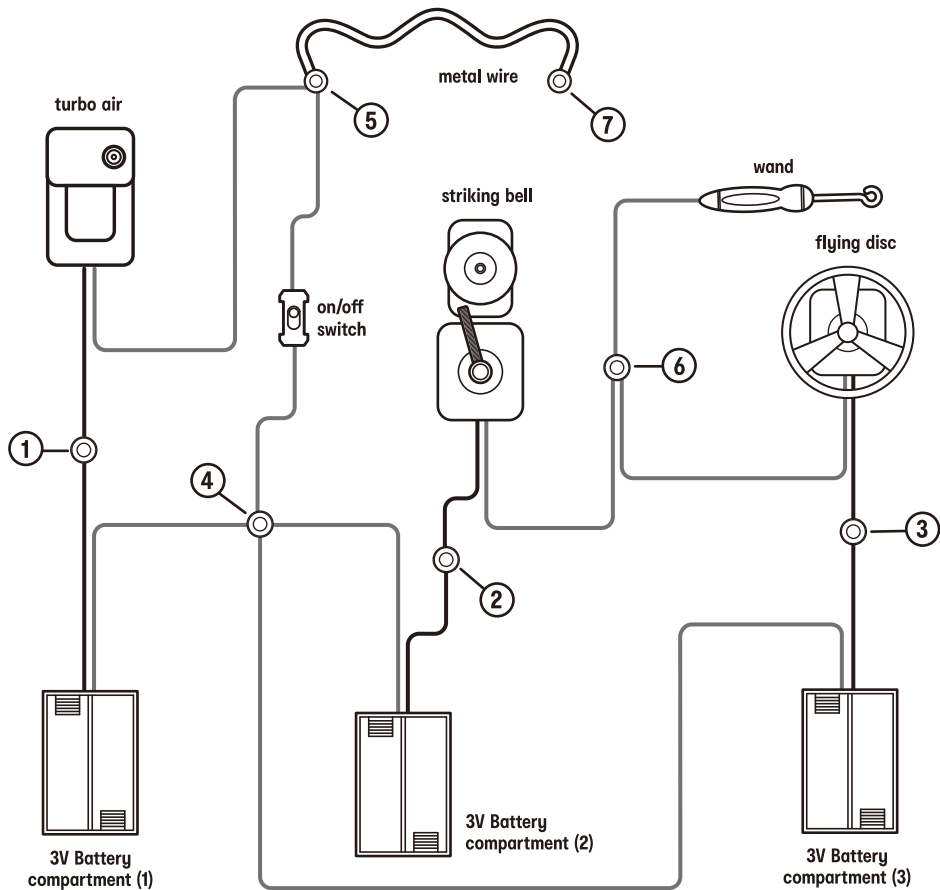


Wire connections	Spring (1)	Spring (2)	Spring (3)	Spring (4)	Spring (5)	Spring (6)
3V battery compartment (1)	black		red			
3V battery compartment (2)		black	red			
ON/OFF switch			red	red		
turbo air	black			red		
striking bell		black			red	
wand					red	
metal wire				silver		silver

Insert 4pcs AA batteries and switch on the ON/OFF switch. The Turbo Air will blow immediately! Now challenge yourself with the maze challenge. Keep your hand steady and carefully move the ring of the wand through the metal wire. If the ring touches the metal wire, the bell will be triggered and you fail! Start over to test out your hand skills and challenge yourself to complete the maze challenge!

The following is an example of creating an alternate 3 in1 circuit for an alternate play effect:

Note: Only batteries of the same or equivalent types are to be used. Different types of batteries are not to be mixed, and do not mix old and new batteries. Otherwise batteries may get overheated.



Wire connections	Spring (1)	Spring (2)	Spring (3)	Spring (4)	Spring (5)	Spring (6)	Spring (7)
3V battery compartment (1)	black			red			
3V battery compartment (2)		black		red			
3V battery compartment (3)			black	red			
ON/OFF switch				red	red		
turbo air	black				red		
striking bell		black				red	
flying disc			black			red	
wand						red	
metal wire					silver		silver

Insert 6 x AA batteries and switch on the ON/OFF switch. The Turbo Air will blow immediately to indicate the game has started! Challenge yourself with the maze challenge. Keep your hand steady and carefully move the ring of the wand through the metal wire. If the ring touches the metal wire, the bell and the flying disc will be triggered to indicate a failure! Test out your hand skills and challenge yourself to complete the maze!

If at any time in the future you should need to dispose of this product please note that waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your local authority or retailer for recycling advice. (Waste Electrical and Electronic Equipment Directive)

43-340-101

COLOURS AND CONTENTS MAY VARY

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FOR AU / NZ: IMPORTED FOR KMART
STORES IN AUSTRALIA AND NEW ZEALAND.