Super Inventor's
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BLEEP (x 2)
RED LIGHT
YELLOW LIGHT
GREEN LIGHT
OUT
Maximum current rating 1A
NOT
AND
OR
FLIP/FLOP
DELAY (Long)
DELAY (2-way)
BATTERY CONNECTOR
(9V DC 6F22 or 6LR61)

Pressure Mat Cards (x 2), Wires (Red, Yellow and Blue), Jack Plug, Light Bulb (1.5V) and Holder, Pouch, Filter Paper and Stickers.
INTRODUCTION

Welcome to the hi-tech world of Logiblocs!

These instructions will tell you all you need to know in order to make all the projects listed in the index on page 3. Near the back of this booklet you will find information about how Logiblocs work and what they do.

You may have other Logibloc kits and, if so, you will be able to combine the Logiblocs in this kit with your other kits to increase their power and flexibility.

If you join the Logiclub you will be able to get loads more ideas of things to make and do with your Logiblocs. You may try to win a prize by entering your own ideas in the regular competitions.

SAFETY

Logiblocs are absolutely safe if used correctly. Please read the section on safety at the end of this booklet. Do not use the Logiblocs until you understand the safety advice. Please keep these instructions for future reference.

Never ever touch or try to push any wires into a mains electrical socket or plug. This would be very dangerous. Do not let the Logiblocs get wet and never put any parts or wires into your mouth.

LOOKING AFTER YOUR LOGIBLOCS

It’s a good idea to keep your Logiblocs in the box. There is plenty of space in the box to store your models and any Logibloc Extrablocs you may have.

Remember that Logiblocs are very special and need to be looked after well. Keep them clean and try not to step on them!

THE LOGIBLOC GUARANTEE

If by any chance anything is missing or not working properly, please write to us at the address on the back of this booklet and we will sort things out as soon as possible. This does not affect your right to return this product to where you bought it from under the retailer’s usual terms and conditions.
Logiblocs make computer technology simple!

Logiblocs is the electronic discovery system that helps you understand about the world of technology around you as you create your own inventions.

From traffic lights to super computers, everything in today's high-tech world runs by the same principles that Logiblocks demonstrate. Inside each Logibloc is a printed circuit board and every block is color-coded for the function it performs. By plugging together Logiblocks in different combinations you can create circuits and virtually write your own simple program to build each new invention.

Each block has its own job to do, described by its color:

- **Logi Yellow**
  Input: These blocks trigger the system at the press of a button and in all sorts of other ways.

- **Logi Blue**
  Throughput: These blocks take messages from place to place.

- **Logi Orange**
  Logic: These brain blocks do the thinking and make sure that everything happens in the right place and at the right time.

- **Logi Red**
  Output: These chatterboxes turn things on and off and communicate with the outside world through light and sound.

- **Logi Green**
  Power: These energy suppliers give life to Logibloc inventions.

All Logiblocks work with each other so with a few Extrablocs you can build on to your inventions to make them even more powerful using your Logimagination.
The first thing to do is to get to know the Logiblocs and make sure that they are working OK.

You will need four 1.5V AA size batteries.

**Step 1**
Open the BATTERY BOX and put the batteries in. See the section on battery installation near the end of this booklet.

**Step 2**
Plug in the BATTERY BOX to the CROSS.

**Step 3**
Plug in a BUTTON and a BLEEP block.

When you press it the light on the CROSS should come on. If this doesn’t happen, check that the batteries are put in correctly.

If you still have trouble, maybe your batteries are flat!

We will use this Logitester unit to test if all the other blocks are working OK.
Step 4
Now place the Logitester on a flat surface and add on the rest of the STRAIGHT and CROSS blocks as well as the Y-BLOC as shown.

Press the BUTTON and check that all the green lights come on. These blue blocs take messages from place to place.

Step 5
Now take off the blue pieces and replace the BUTTON on your Logitester with the LIGHT SWITCH.

Cover over the lens of the LIGHT SWITCH and see how the BLEEP goes on and off. This bloc switches other blocs on when it sees light.
Step 6

Still working with the Logitester, replace the LIGHT SWITCH with the IN and plug in the Jack Plug leaving the wires loose.

Hold the wires, one in each hand and touch the metal ends of the wires together.

Again, the BLEEP will start bleeping. The IN block is another way to trigger the blocks and is useful for linking your Logibloc systems to Door Alarms, Pressure Mats and even making Lie Detectors, Metal Detectors and Water Sensors.

Step 7

Now replace the IN with the PULSE bloc. This creates its own messages or pulses automatically.

Experiment with altering the speed of the pulses by twisting the knob. This block is useful for making automatic systems that run on their own!
**Step 8**

This time, replace the BLEEP with the OUT block and hear it click. You could use this as a metronome to keep your music in time!

We can use the OUT block to switch other things, such as light bulbs and motors, on and off. Note that this external circuit needs its own separate power supply.

**Step 9**

Add on the SEQUENCER block as shown.

Notice how the SEQUENCER lights come on and off one after another. Put the PULSE on full speed by twisting the knob fully clockwise.
Step 10
Now add on the rest of the red blocks as shown. You can stand this up on its side. See how far away you can see the lights.

Step 11
Now let's check out the SOUND BLOC and the FLIP/FLOP. Put the blocks together as shown and see how the signal swaps from side to side of the FLIP/FLOP.

Sing to the blocks and see the traffic lights change - they like Mozart best!
Step 12

Fix the Logitester up to the blocks shown. Press the BUTTON for different lengths of time and see the effects. Notice how the NOT always does the opposite of what you expect.

How long do you have to press the BUTTON for, to make the YELLOW LIGHT go off?

Step 13

Finally, let’s check the AND and the OR blocks. Experiment with pressing the BUTTONS and covering the LIGHT SWITCH.

Can you see the difference between the way the AND and the OR blocks work?

You have successfully completed the test procedure. Well done! Now it is time to get the Logiblocs to work and have some fun!
Many systems in real life are operated by light. Sometimes this is visible light like the light from a flashlight or the sun. Sometimes it is invisible light like infrared.

Automatic doors are a good example of a system that may be triggered by light. When you get near, either a light beam is broken since you are in the way, or the light pattern is changed enough to tell the system to switch on the motor and open the doors.

Another good example is an intruder alarm that senses movement or, maybe, picks up body heat - hot things radiate infrared rays which can be found just beyond the red end of the rainbow!

**LIGHT DETECTOR**

Now let's see how easy the LIGHT SWITCH is to use. Fix the Logiblocs together as shown.

Walk around in the evening and see when the green light is on and when the red light is on. If you need to be quiet just take off the BLEEP and put it in your pocket.

Try shining a flashlight at the Logiblocs from a distance. Test your target practice by aiming the flashlight before you turn it on. If the BLEEP bleeps you're on target!
2 THE ELECTRONIC EYE

We can trigger the Logiblocs by shining light into the LIGHT SWITCH.

Many systems use light to switch machines on or off. A light sensor is often used to open doors.

Some systems are controlled by invisible light like the remote control on your TV.

Pass your hand over the lens of the LIGHT SWITCH and see the lights change. You need to stop all the light getting to the lens to make this work properly.

We will now make some other systems controlled by light.

3 SHADOW SURPRISES

Place the same blocks upright so that as people pass by, their shadow makes the BLEEP come on.

How about setting up the blocks to wake you up when the sun rises, or when your bedroom light is turned on.
LIGHT BREAKER ALARM

You will need a flashlight to make the light breaker alarm. Find a dark spot or wait until the light is fading.

Step 1
Plug the Logiblocs together as shown and stand them up on the BATTERY BOX.

Step 2
Place your flashlight so that it shines across the doorway straight at the lens of the LIGHT SWITCH.

You have now made a Light Breaker Alarm. When the light beam is broken by walking through the beam, the BLEEP will sound for about 10 seconds.

Don’t forget to disconnect the BATTERY BOX when you are not using the Logiblocs to make the batteries last as long as possible!
Step 3

Try using mirrors to bend the light beam around corners. Make sure that the beam still reaches the LIGHT SWITCH.

Why not invent some games to play with your friends? For example, see who can limbo under the lowest light beam without setting off the BLEEP. It is best to remove the LONG DELAY from the circuit so the BLEEP does not stay on for too long.

PROTECT YOUR TREASURE

First make the circuit shown and lay it down on a flat surface.

Make sure there is enough light shining down onto the LIGHT SWITCH to make the light on the Logiblocs come on.

Now cover over the LIGHT SWITCH with a loose block or your treasure. The two BLEEPs will stop sounding.

If anyone tries to take your treasure the BLEEPs will sound the alarm.
It is often very important that machines know where they are and what is going on around them. They are continually checking to make sure that all is well.

For instance, a photocopier needs to know if there is any paper in the tray before it tries to make a copy. An electric window in a car needs to know when the window is fully open in order to stop the motor and avoid damaging the mechanism that powers the window.

These machines often use microswitches which tell the machine when it has reached a certain point. So when the switch is pushed the circuit is completed which sends a signal to the controller to start or stop the next function.

This is exactly what the Logiblocs IN block can do. We don't bother with switches but do the same thing by simply touching the two Jack Plug wires together to complete the circuit. The IN block then tells the other Logiblocs to get to work just as though a BUTTON had been pressed.

There are loads of ways that these two wires can be fixed up to act as sensors. We have shown you some ideas in the following pages, but this is a good time to experiment with designing your own sensors to make your own gadgets using your own imagination!
As you have seen we can use light and sound to trigger the Logiblocs. This section shows you how to make systems which are triggered by the Jack Plug and IN block.

**DOOR ALARM**

You will need a strip of aluminium foil and some sticky tape.

**Step 1**

Take the Jack Plug wires and place them near the bottom of your door surround with their ends sticking out so that the door will brush past them when it is opened. Stick the wires on with sticky tape.

**Step 2**

Shape a strip of aluminium foil around the edge of the door itself, at the height of the two wires. When the door opens, the aluminium foil will touch both wires which can be used to trigger the Logiblocs into action. This is called completing the circuit.

**Step 3**

Fix the Logiblocs together as shown and plug in the Jack Plug to complete the system. Hide the Logibloc system you have made. Now, if anyone opens the door, the alarm will go off!
**2. DRAWER GUARD**

You can fix up your special drawer using some aluminium foil as shown. If the drawer is opened the aluminium foil will brush past the two metal ends of the Jack Plug wires so completing the circuit and setting the alarm off.

Hide the Logiblocs at the back or beside the drawer where there is usually a bit of space.

**3. METAL DETECTOR**

Using the same Logibloc arrangement but without the LONG DELAY, we can use the two metal ends of the Jack Plug Wires to test for metal. Touch the ends of the wires in two places on the item to be tested. If the BLEEP sounds, then you have found metal because metal conducts electricity.

Remember not to put these wires anywhere near any mains electrical outlets because that could be very dangerous.

**4. WATER DETECTOR**

Water also conducts electricity. You can test for water by putting the two ends of the Jack Plug wires into water. You may need to add small plates of aluminium foil to the ends to make the effect greater.

Add the NOT between the IN and the CROSS block and you could also tell when a flow of water has stopped in a garden hose.
SECURITY MAT

You will need some aluminium foil, scissors, paper glue, some cardboard and some sticky tape. You can use the piece of card provided but you may prefer to keep this for use as an attractive mouse mat!

Step 1
Cut out two pieces of card or cardboard 20cm x 15cm. Stick two pieces of aluminium foil to one side of each piece of card. Cut out four strips of cardboard to go right around the edge of one piece of card.

Step 2
Using sticky tape attach the ends of the Jack Plug wires to one corner of each card. Glue the strips of cardboard around the edge to form a spacer. Place (do not stick) the second card on top of the spacer to make a sandwich.

Step 3
Join the blocks together as shown for the Door Alarm (see the start of this section) and plug in the Jack Plug. Tap the sandwich you have made. When the two pieces of foil touch, the circuit is completed and the Logiblocs should be triggered. If the aluminium sheets in the sandwich are touching too easily then add another spacer or two. When you are happy with the sandwich, stick down the top piece of cardboard to the spacers.

Hide the Logiblocs and place the mat under carpets and surprise your friends when they step in the wrong place! Remember to disconnect the BATTERY BOX when you are not using the Logiblocs to save the batteries!
6 LIE DETECTOR

We can use the Logiblocs to make a Lie Detector. This uses the effect that when people do not tell the truth they usually sweat which increases the electrical conductivity of their hands.

Step 1

Make two hand sized aluminium foil pads and lay them side by side on a table, making sure that they do not touch. Fix with tape the metal ends of the Jack Plug wires with some sticky tape, one to each piece of foil.

Step 2

Put the blocs together as shown and plug in the Jack Plug into the IN block.

Step 3

Now keeping the pads separate, place one or two fingers on one pad. Get someone to ask you some questions about you or your friends. Each time you give either a true or false answer put one or two fingers from your other hand onto the second pad. The sound level of the BLEEP will change depending on how hard you press or how much your hands are sweating (because of telling lies!).

You can also do this with two people. Put your right hand on the right pad while your friend puts his or her left hand on the left pad. Ask each other questions and then join your free hands together. You will find that the Logiblocs can be triggered through you both! This is because your bodies also can conduct electricity.
No Logibloc session would be complete without building a few intriguing Space vehicles. We have shown just a few ideas to get you started.

1 LOGIFIGHTER

Use a 9V battery (6F22 or 6LR61) to power these next two spaceships. Hold the battery in place using tape. Turn the knob to increase or decrease the speed of the flashing craft as it comes into land.

You can use the Launch Runway provided in the box to let your Logifighter take off!

2 WING SHIP
MOTHER SHIP

Support the Mother Ship in three places using the BATTERY BOX and the two CORNER blocs.
4 LANDING CRAFT

Fasten the BATTERY BOX on to the craft as shown so that the bleeping starts when the Landing Craft comes into land and the BUTTONS are pressed down.

Bring your Landing Craft into land onto the Landing Pad provided in the box!

5 LAND SPEEDER
CONTROL SHIP

Now use your Logimagination to design and build your own spacecraft!
It is amazing how much noise there is in the world. Air-conditioning, motor cars, aeroplanes and not to mention people, animals and the wind rustling in the trees.

Sound is carried through the air as a pressure wave. The bigger the pressure difference the greater the noise level. The faster the frequency of the wave the higher the sound sounds. Some sounds can be so high that humans cannot hear them - although many animals can hear much higher frequencies.

The thunder which accompanies lightning is caused by the sudden heating of a column of air by the electricity. The air expands quickly creating a powerful pressure wave which is the sound you hear. It takes longer to get to you than the lightning because sound travels much slower than light.

Our ears pick up the sound using our eardrums which vibrate when the sound arrives. Signals are sent to the brain which interprets them as either loud or soft, high or low and as speech or music and so on.

The Logibloc SOUND BLOC is very sensitive and hears slightly different sounds to us. Check it out!
**VOICE DETECTOR**

Connect the SOUND BLOC to the other blocks as shown. Speak normally and see the lights change. Experiment with talking loudly and softly, near and far, to see how little or how much noise you need to trigger the lights.

**SOUND GUARD**

Put the Logiblocs together as shown and hide them beside a door or inside a cupboard. Put the BLEEP as far away from the SOUND BLOC as possible to prevent feedback.

Feedback happens when the sound of the BLEEP goes straight back into the SOUND BLOC so that the system never stops!

You could try using a book or a cushion placed between the BLEEP and the SOUND BLOC to stop feedback if it happens too easily.
For hundreds of years there have been many systems that worked automatically - that is they worked by themselves without the need for people to control them. There were water systems that made sure that crops got enough water using a network of weirs. Others were mechanical systems like clocks.

All these systems were around long before electricity had been understood. Well designed mechanisms would make the large bell chime on the hour every hour. While still more complex parts might control moving figures that came out, such as a cuckoo or a line of figures dancing to music.

The first computers were also mechanical. They were very large and complex and could add, subtract, multiply and divide. They were like great big adding machines but they could also make decisions based on a simple set of rules.

We all have to make many decisions in our lives. Decisions may depend on more than one thing at once. Each decision on its own is simple - if this happens then I will do that - but taking them all together it can be quite complicated! A computer only succeeds by dealing with every simple decision before it moves on to the next - but it does this at great speed which is why they appear to be so clever! - a bit like Logiblocs do today!

Breakthroughs in electronics have reduced the size and weight of computers dramatically. The power of computers has grown enormously also. So it is very easy for us to take all the sophisticated software and systems that we use for granted. Logiblocs can help us to understand the simple elements that make automatic systems work.
This time the NOT block will go on again and so the whole thing starts again. The result is a flashing circuit that will go on for ever - or until the batteries run down.

We can use this flashing circuit to drive some traffic lights as shown. In this case we have slowed the whole system down by adding in the DELAY (Long) too.

This is a simple example of feed-back where the signal is going around in a closed loop.
2 LOGIBUZZER

We can use another type of feedback loop to make a Logibuzzer.

Put the blocks together as shown. Connect the Jack Plug wires to the terminals of the OUT block. Plug the Jack Plug into the IN. If there is enough light shining onto the LIGHT SWITCH the blocks will buzz.

Now cover the lens of the LIGHT SWITCH with a loose Logibloc and the buzzing will stop. If anyone takes the loose block away the alarm will sound again.

3 LIGHT FEEDBACK

Here we are using a RED LIGHT (LED) to shine back at a LIGHT SWITCH (LDR) to complete the feedback loop.

Now move the LED away from the LDR or place a piece of card in between and see how the flashing stops.

To make this work you will need to make the LED as bright as possible. If you have trouble, try it with a 9V power supply using the BATTERY CONNECTOR. (see page 40)
This time plug the SOUND BLOC onto the end of the FLYER so you can move it around.

When you press the BUTTON it clicks and this will usually trigger the SOUND BLOC which then sends a signal to the BLEEP. The noise of the BLEEP is then picked up again by the SOUND BLOC, so completing the circle.

Try to break this feedback loop by placing a book or cushion in the way. When the SOUND BLOC can no longer hear the BLEEP the sound will stop because you have broken the loop.

Experiment with holding the SOUND BLOC in different places and at different angles to see when feedback starts and stops.

The AND block needs both inputs to be on in order to pass a signal on. Imagine a farm gate which only lets the animals through when the farmer is there to open the gate.
Another very useful example of "feed-back" is the Memory Circuit.

Put the Logiblocs together as shown. As soon as you press the top BUTTON the signal will go right around the circle and feed-back into the OR block. Because the OR block will accept a signal from either of its two inputs, the signal will carry on going around the circle even if you stop pressing the BUTTON.

To re-set the system you have to break the feed-back loop by pressing the other BUTTON. This makes the NOT block go off. This then stops the signal going through the AND block because this needs both inputs before it will send the signal on.

This is known as a "latch" circuit because it locks in place like a door latch.

You can use this Memory Circuit with any of the sensors for light, sound or touch. Simply plug them in instead of the top BUTTON. The bottom BUTTON will then be the way you can re-set the system.
Now we will make two completely separate systems and let them talk to each other!

**Step 1**

Put SYSTEM 1 together as shown.

Cover over the LIGHT SWITCH and check that the FLIP/FLOP swaps the two BLEEPs and that the OUT block clicks. If you can't hear the click then your batteries are probably flat!

**Step 2**

Put SYSTEM 2 together as shown. The two halves join together to form a "U" into which you can place the 9V battery.

Turn the PULSE up to full speed. The YELLOW LIGHT on the other side will be on, but when you make a noise it should flash in time with the PULSE. This is because the AND block will let the signal through as long as it receives both signals.

**Step 3**

Now place both systems close to each other so that the YELLOW LIGHT on SYSTEM 2 shines directly into the LIGHT SWITCH on SYSTEM 1. You will need to make sure that there is not too much other light around.

The sound from SYSTEM 1 is picked up by the SOUND Bloc in SYSTEM 2. This then makes the YELLOW LIGHT flash and this flashing is picked up by the LIGHT SWITCH in SYSTEM 1 again. So we have a feedback loop between the two separate systems!
Step 4

To help you understand what is going on, place a card first to break the light beam link and then, by placing the card in the "U", the sound link. You may be able to do this with your hand also.

Experiment with changing the distance between the systems and the color of the LIGHT. Which is the most powerful, Red, Green or Yellow? Change the speed of the PULSE and see the effect.

Step 5

Now join up the Jack Plug between the OUT block terminals and the IN block as shown and see if you can work out what's happening! We now have two feed-back loops working in parallel!
Now you have seen how each of the different input blocks work, you can combine them to make more complex systems.

In real life, messages are often combined to make sure systems work properly. For instance, a train may not start until all the doors have closed properly and the driver has pressed the start button. An elevator will not let the doors open until it has reached the correct floor.

Elevators may also work out what is the most efficient way to stop at several floors where the call button has been pressed.

The logical Logiblocs AND, OR, NOT, DELAY and the FLIP/FLOP (the orange ones) can all be used to combine messages in different ways. But you have to think?

**LIGHT AND SOUND TOGETHER**

Putting the Logiblocs together as shown will make a system that will react to light or sound.

We are using the OR block to take a signal from either the SOUND SENSOR or the LIGHT SWITCH to make the alarm go off.

This makes a more reliable alarm system which will detect anyone trying to pass, whether they make a sound or cast a shadow.
In this project we are mixing two signals using the AND block. So only when both signals arrive at the same time will the AND block send the signal on to the SEQUENCER.

The two signals are coming from the steady flashing unit and the PULSE block. By changing the speed of the PULSE you can get some interesting and apparently random effects.

But do the patterns of lights and sound repeat? Is this truly random?

To be random, the pattern must never repeat itself but appear to be haphazard!
3 Card Reader

Put the blocks together as shown. When you pass a card over the LDR block it will trigger the SEQUENCER and so the lights will move round one place. If you make a card with holes punched in it then, when you pass it back and forward over the LDR, the lights will change quickly. The aim is to get the GREEN LED to come on but it is not as easy as it seems.

Step 1

Cover over LDR with card and press the BUTTON several times until the BLEEP on the SEQUENCER sounds. The card reader is now ready.

Step 2

Pass the card with holes in it over the LDR so that the SEQUENCER is triggered either 2, 9 or 16 times. Note how the DELAY (2-Way) block prevents any fast signals getting through to the DELAY (Long).

Step 3

Once the lights have stopped at the DELAY (2-Way) for about one second, the signal will go on to the DELAY (Long). Now is your chance to get past the AND block which was previously stopping any signals from going through. Move the card just one space back again so that it triggers the next position. Then the GREEN LED will come on.

You are now clear for entry!

Change round your Logiblocs and design different arrangements and see if your friends can work out how to decode them!
WHAT THE LOGIBLOCs DO

BATTERY BOX
(6V output. 4 x 1.5V AA LR6)
This brings the power from the batteries to make the Logiblocs work. Plug it in to a CROSS or wherever there is a space. Just unplug the Logibloc end when you finish.

No need to disconnect the stiff battery connector each time!

BATTERY CONNECTOR
(9V DC 6F22 or 6LR61)
This lets you use a 9V Battery Pack to power the Logiblocs. Use it like the BATTERY BOX but not in the same circuit and at the same time.

STRAIGHT
This is the basic Logibloc piece that just gets you from place to place.

CROSS
This acts as a cross-roads for all Logiblocs and lets you turn corners.

CORNER
These help you to build round corners and act as great legs for space stations.
WHAT ELSE THE LOGIBLOCS DO

Y-BLOCK
This splits off signals in two directions and triggers any block connected to it. The light lights up whenever it receives a message and passes it on immediately.

FLYER
The FLYER lets you jump over the other Logiblocs or just get from place to place quickly.

BUTTON
When the button is pressed it triggers any block connected to it. The button is the easiest way to turn things on.

LIGHT SWITCH
This triggers any other Logibloc connected to it if a light is shone into the clear lens on the top. Use it in the dark with a flashlight. Experiment with the way it works by covering part or all of the lens with different types of tape.
SOUND BLOC

This contains a sound sensor which triggers the other blocks if it hears the slightest sound. Great for making booby-traps!

IN

Plug in the Jack-Plug. When the two wires of the Jack Plug are touched together the IN block triggers any other block that it is connected to.

PULSE

The PULSE creates a message that triggers any block connected to it as though a button had been pressed. The difference is that it is automatic. Change the speed of the pulse by turning the knob round!

LIGHTS (LEDs)

When a message gets to a LIGHT it comes on. You can get red, yellow and green lights. All the Logibloc lights are LEDs (Light Emitting Diodes). These are extra large ones!
... EVEN MORE!

**BLEEP**

When a message gets to a BLEEP it makes a bleeping noise.

The BLEEP goes on and off after a while automatically.

---

**OUT**

The OUT is triggered by any other block which is connected to it. Plug a wire into each of the two terminals by pressing down on the knob, inserting the wire and releasing the knob which will hold the wire firmly.

When the OUT is triggered it closes the circuit between the two wires. This makes other things work such as light bulbs and motors which will need their own separate power supply.

(Maximum current rating 1A)

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**DELAY (Long)**

Logiblocs have several different types of delay. A delay waits for a bit before sending the message on. This one stays on for about 8 seconds once it has been triggered. Useful for keeping an alarm on, or for just slowing things down!

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**DELAY (2-Way)**

This block waits for a little while before passing any message it receives on to the next block. When the signal it receives stops, it again waits a little while before turning itself off. Useful for slowing things down!
NOT
This does the opposite to what you expect. When it gets a message it doesn’t send it on and if it has no message it sends one of its own!

AND
The AND stops signals getting through unless both the inputs are on.

OR
The OR lets either of the two signals it receives go through.

FLIP/FLOP
This switches messages from one side to the other every time it receives a signal. Useful for making two different things go on and off alternately.

SEQUENCER
This has one input and seven outputs. When it receives a signal it passes it on to the next output immediately. Any Logiblocs plugged in will be triggered when it is their turn and they will light up or beep.

Logiblocs let your imagination go!
BATTERY INSTALLATION

You will need four 1.5V AA (LR6) batteries.

- Open the BATTERY BOX lid by loosening the large screw underneath with a screwdriver or coin and then lift the lid.
- Put the batteries in, starting with the two centre ones. It is best to put the flat end (-ve) of each battery in first, which depresses the spring in the battery compartment.
- Insert the two lugs into the holes and close the lid.
- Do up the screw again. Do not tighten too much!

LIFT LID TO ADD BATTERIES
SCREW (underneath)
JOIN OTHER LOGIBLOCS HERE

FUSE REPLACEMENT

As an added safety feature there is a 1A fuse contained in the BATTERY BOX and the BATTERY CONNECTOR (LBT/F2). If in the unlikely event this gets broken you will need to obtain a replacement BATTERY BOX or BATTERY CONNECTOR. Please send the old one back to us, enclosing your own address and tell us what you think caused the fuse to blow.
SAFETY ADVICE AND USEFUL TIPS

BETTER TO BE SAFE THAN SORRY!
Before you use the Logiblocs, be sure to read and understand this section on safety.

If used correctly, the Logiblocs are absolutely safe. The Logiblocs operate at low voltage only. **Never connect any wires to mains electrical outlets.**

BATTERIES - DOs and DON’Ts!
- Insert batteries according to +/- symbols.
- Only use the recommended batteries.
  - (4 x AA (LR6) 1.5V) and/or (1 x 9V 6F22 or 6 LR61)
- Do not use Nickel Cadmium rechargeable batteries.
- Replace all the batteries at the same time.
- Do not mix old and new batteries.
- Do not mix alkaline and standard carbon-zinc batteries.
- Do not attempt to recharge non-rechargeable batteries.
- Do not short-circuit the supply terminals or throw in fire.
- Remove batteries during long periods of non-use.
- Never leave worn out batteries connected – they might leak and corrode things.
- Use only one BATTERY BOX or BATTERY CONNECTOR in any circuit.

SOME MORE DOs AND DON’Ts
If you want to save the batteries, disconnect the BATTERY BOX when you finish a Logibloc session. When using the BATTERY CONNECTOR (LBT/F2) just unplug it from the other Logiblocs – there is no need to remove the battery from its tight connector.

- Do not attempt to open up the Logiblocs.
- Do not insert metal objects or wires into the connectors – this could cause a short circuit!

Always plug together or pull apart the Logiblocs in the direction shown.

- Do not force the Logiblocs together. This may hurt the connectors.
- Do not place the Logiblocs themselves in water.