

## Rubik's Dice



## Introduction

Rubik's Dice consists of a black magnetic shell with 7 metal plates trapped inside. Object: to fill all 6 inside walls with the metal plates, so that NO red dot appears on any side. This applies to ALL the holes, so even the tiny dots must be red-free as well.

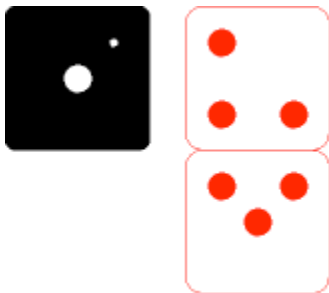
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### The Plates

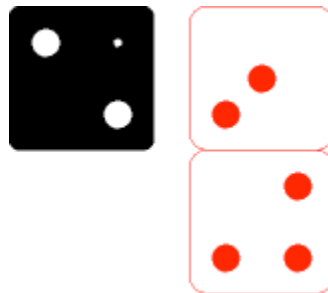
There are 7 plates inside the shell but only 6 plates are used to fill the inner walls of the shell itself. Rubik's Dice only has one solution, which means that only one side of each plate is assigned to a certain side of the shell, with an extra plate left over that never gets used.

Each plate has a tiny identifying number affixed on its corner. Even though the ID numbers label each plate with no rhyme or reason, they are exactly the same throughout all editions of the Dice puzzle.

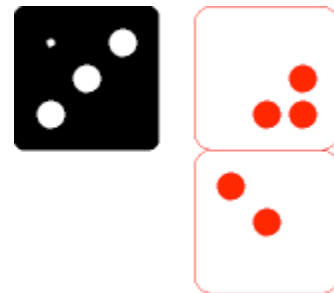
**Side I / Plate ID #14:**



**Side II / Plate ID #12:**



**Side III / Plate ID #58:**



**Side IV / Plate ID #34:**

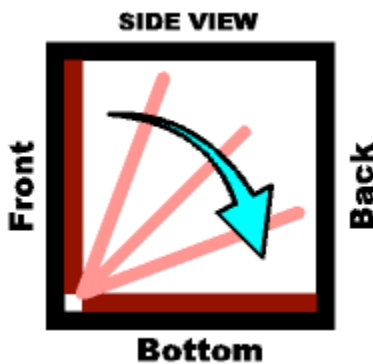
**Side V / Plate ID #65:**

**Side VI / Plate ID #78:**

<p>And finally, the last plate...</p>	<p><b>Plate ID #47:</b></p>	<p>The last plate (#47) does not have a home. The extra plate has no known value for this puzzle except for the pure reason of annoyance.</p>

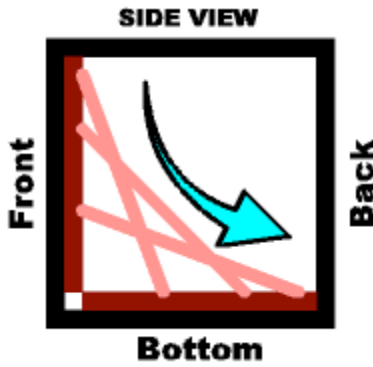
## Notation

Explaining how to solve Rubik's Dice is like explaining how to go through a marble maze. I cannot supply the dexterity; all I can do is help out with a few hints. Therefore the notation has been reduced to nothing more than a guide. There are 3 different kinds of moves used: The **flip**, the **slide**, and the **push**.



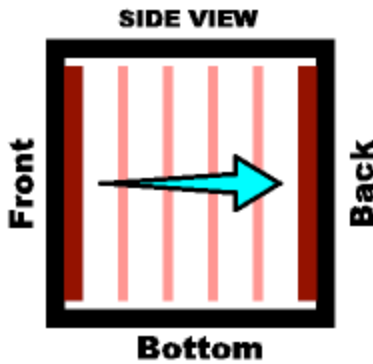
To **FLIP** a plate, simply let it fall on its face while hinging on one edge. Because a **flip** is the most commonly used move, no special character is used to denote it; just the side that it falls to.

- **L** ...flip to the left side
- **F** ...flip to the front side
- **R** ...flip to the right side
- **Bk** ...flip to the back side
- **Bm** ...flip to the bottom side



To **SLIDE** a plate, nudge it's bottom edge so that it slides on its back. A **slide** is denoted by the **\backslash** symbol.

- **\Bm** ... *slide to the bottom side*



To **PUSH** a plate, pop it from one side of the shell to the opposite side, keeping its orientation intact. The **push** is denoted by the **>** symbol.

- **>Bk** ... *push to the back side*

### Examples:

Setup:  
Plate to move at the front,  
all loose plates on the bottom.

**\Bm F**

Slide the plate to the bottom side,  
and then flip it up to the front side,  
with loose plates in tow.

Setup:  
Plate to move at the front,  
all loose plates on the bottom.

**>Bk Bm F**

Push the plate to the back side,  
then flip it down to the bottom side,  
and then flip it up to the front side,  
with loose plates in tow.

**Note: All moves start off with the plate on the FRONT SIDE.**

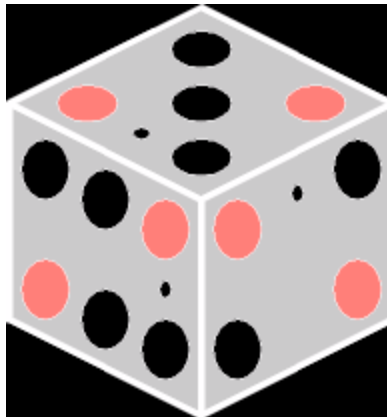
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## Rubik's Dice



## Solution

Plan of attack: Solve the sides in ascending order (I thru VI). That way the side(s) with the most holes will always be open. This makes it a lot easier to peer inside the shell, especially since those ID numbers are so tiny.

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### Solve Side I.

Start off with side I as the front and side II as the bottom, with all 7 plates at the bottom as well. Fill all four vertical sides with a single plate each, by **FLIPPING** them up one at a time. If plate #14 appears on any of the sides, then knock down the 3 others first and then plate #14 last, which will place it on top of the stack

If plate #14 does not appear, then knock down all 4 plates. Next, **FLIP** all 7 plates from the bottom to the front side. Next, **SLIDE** all 7 plates from the front to the bottom side. Once again, fill all four vertical sides, and use the same method as before to climb plate #14 to the top of the stack.

Once the plate is on top of the stack, merely **FLIP** it up to side I. Afterwards, fill the other 3 vertical sides with a single plate each. This will prevent binding from occurring during the following moves.

<b>To turn plate #14 over to its other side:</b>	<b>Setup: All loose plates on the bottom.</b>	<b>\Bm F</b>
<b>To rotate plate #14 clockwise:</b>	<b>Setup: All loose plates at the back.</b>	<b>&gt;Bk L Bm F</b>
<b>To rotate plate #14 counter-clockwise:</b>	<b>Setup: All loose plates at the back.</b>	<b>&gt;Bk R Bm F</b>

<b>To rotate plate #14 half-way around:</b>	<b>Setup: All loose plates on the bottom.</b>	<b>Bm L Bk R Bm F</b>
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**Solve Side II.**

**Important note: Do NOT disturb the plate that is already affixed to side I.**

Start off with side II as the front and side I as the bottom, with all 6 loose plates at the bottom as well. Fill all four vertical sides with a single plate each, by FLIPPING them up one at a time. If plate #12 appears on any of the sides, then knock down the 3 others first and then plate #12 last, which will place it on top of the stack

If plate #12 does not appear, then knock down all 4 plates. Next, FLIP all 6 loose plates from the bottom to the front side. Next, SLIDE all 6 loose plates from the front to the bottom side. Once again, fill all four vertical sides, and use the same method as before to climb plate #12 to the top of the stack.

Once the plate is on top of the stack, merely FLIP it up to side II. Afterwards, fill the other 3 vertical sides with a single plate each. This will prevent binding from occurring during the following moves.

<b>To turn plate #12 over to its other side:</b>	<b>Setup: All loose plates on the bottom.</b>	<b>\Bm F</b>
<b>To rotate plate #12 clockwise:</b>	<b>Setup: All loose plates at the back.</b>	<b>&gt;Bk L Bm F</b>
<b>To rotate plate #12 counter-clockwise:</b>	<b>Setup: All loose plates at the back.</b>	<b>&gt;Bk R Bm F</b>
<b>To rotate plate #12 half-way around:</b>	<b>Setup: All loose plates on the bottom.</b>	<b>Bm L Bk R Bm F</b>

**Solve Side III.**

**Important note: Do NOT disturb the plates that are already affixed to sides I and II.**

Start off with side III as the front and side I as the bottom, with all 5 loose plates at the bottom as well. Fill the 3 empty vertical sides with a single plate each, by FLIPPING them up one at a time. If plate #58 appears on any of the sides, then knock down the 2 others first and then plate #58 last, which will place

it on top of the stack

If plate #58 does not appear, then knock down the 3 plates. Next, FLIP all 5 loose plates from the bottom to the front side. Next, SLIDE all 5 loose plates from the front to the bottom side. Once again, fill the 3 empty vertical sides, and use the same method as before to climb plate #58 to the top of the stack.

Once the plate is on top of the stack, merely FLIP it up to side III. Afterwards, fill the other 2 vertical sides with a single plate each. This will prevent binding from occurring during the following moves.

<b>To turn plate #58 over to its other side:</b>	<b>Setup: All loose plates on the bottom.</b>	<b>\Bm F</b>
<b>To rotate plate #58 clockwise:</b>	<b>Setup: All loose plates at the back.</b>	<b>&gt;Bk L Bm F</b>
<b>To rotate plate #58 counter-clockwise:</b>	<b>Setup: All loose plates at the back.</b>	<b>&gt;Bk R Bm F</b>
<b>To rotate plate #58 half-way around:</b>	<b>Setup: All loose plates on the bottom.</b>	<b>Bm L Bk R Bm F</b>

### Solve Side IV.

**Important note: Do NOT disturb the plates that are already affixed to sides I, II or III.**

Start off with side IV as the front and side I as the bottom, with all 4 loose plates at the bottom as well. Fill the 2 empty vertical sides with a single plate each, by FLIPPING them up one at a time. If plate #34 appears on any of the sides, then knock down the other one first and then plate #34 last, which will place it on top of the stack

If plate #34 does not appear, then knock down the 2 plates. Next, FLIP all 4 loose plates from the bottom to the front side. Next, SLIDE all 4 loose plates from the front to the bottom side. Once again, fill the 2 empty vertical sides, and use the same method as before to climb plate #58 to the top of the stack.

Once the plate is on top of the stack, merely FLIP it up to side IV. Afterwards, fill the last vertical side with a single plate. This will prevent binding from occurring during the following moves.

<b>To turn plate #34 over to its other side:</b>	<b>Setup: All loose plates on the bottom.</b>	<b>\Bm F</b>
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<b>To rotate plate #34 clockwise:</b>	<b>Setup: All loose plates at the back.</b>	<b>&gt;Bk L Bm F</b>
<b>To rotate plate #34 counter-clockwise:</b>	<b>Setup: All loose plates at the back.</b>	<b>&gt;Bk R Bm F</b>
<b>To rotate plate #34 half-way around:</b>	<b>Setup: All loose plates on the bottom.</b>	<b>Bm L Bk R Bm F</b>

**Solve Side V.**

**Important note: Do NOT disturb the plates that are already affixed to sides I, II, III or IV.**

Start off with side V as the front and side I as the bottom, with all 3 loose plates at the bottom as well. Peer through the holes of side VI. If plate #65 is not on the top of the stack, then:

FLIP the top loose plate up to the front side, and FLIP up the other loose plates to the back. Then FLIP the front plate down to the bottom first, and FLIP the other loose plates down to the bottom last.

Once again, peer through the holes of side VI. If plate #65 is still not on the top, then repeat the above method one more time. Now that plate #65 is on top of the stack, merely FLIP it up to side V, and proceed with the following moves.

<b>To turn plate #65 over to its other side:</b>	<b>Setup: All loose plates on the bottom.</b>	<b>\Bm F</b>
<b>To rotate plate #65 clockwise:</b>	<b>Setup: All loose plates at the back.</b>	<b>&gt;Bk L Bm F</b>
<b>To rotate plate #65 counter-clockwise:</b>	<b>Setup: All loose plates at the back.</b>	<b>&gt;Bk R Bm F</b>
<b>To rotate plate #65 half-way around:</b>	<b>Setup: All loose plates on the bottom.</b>	<b>Bm L Bk R Bm F</b>

**Solve Side VI.**

**Important note: Do NOT disturb the plates that are already affixed to sides I, II, III, IV or V**

Start off with side VI as the front and side II as the bottom, with both loose plates at the bottom as well. Peer through the holes of side VI. If plate #78 is not on the top of the stack, then:

FLIP the top loose plate up to the front side, and FLIP up the other loose plate to the back. Then FLIP the front plate down to the bottom first, and FLIP the other loose plate down to the bottom last.

Now that plate #65 is on top of the stack, merely FLIP it up to side VI, and proceed with the following moves.

<b>To turn plate #78 over to its other side:</b>	<b>Setup: All loose plates on the bottom.</b>	<b>\Bm F</b>
<b>To rotate plate #78 clockwise:</b>	<b>Setup: All loose plates at the back.</b>	<b>&gt;Bk L Bm F</b>
<b>To rotate plate #78 counter-clockwise:</b>	<b>Setup: All loose plates at the back.</b>	<b>&gt;Bk R Bm F</b>
<b>To rotate plate #78 half-way around:</b>	<b>Setup: All loose plates on the bottom.</b>	<b>Bm L Bk R Bm F</b>

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