

Rubik's UFO

I. Solve the Black Face



Notation:	Description:
+1	Rotate the front face clockwise by 1 wedge.
+2	Rotate the front face clockwise by 2 wedges.
-1	Rotate the front face counter-clockwise by 1 wedge.
-2	Rotate the front face counter-clockwise by 2 wedges.
/	Twist the entire right side half-way around.

1. Solve 3 of the black wedges... by yourself!



Aw, c'mon! You can do this with just a little practice. After awhile it becomes way too easy, like solving the first 3 squares of the "15-tile" puzzle. Besides, you need to break in the new puzzle so it won't bind between

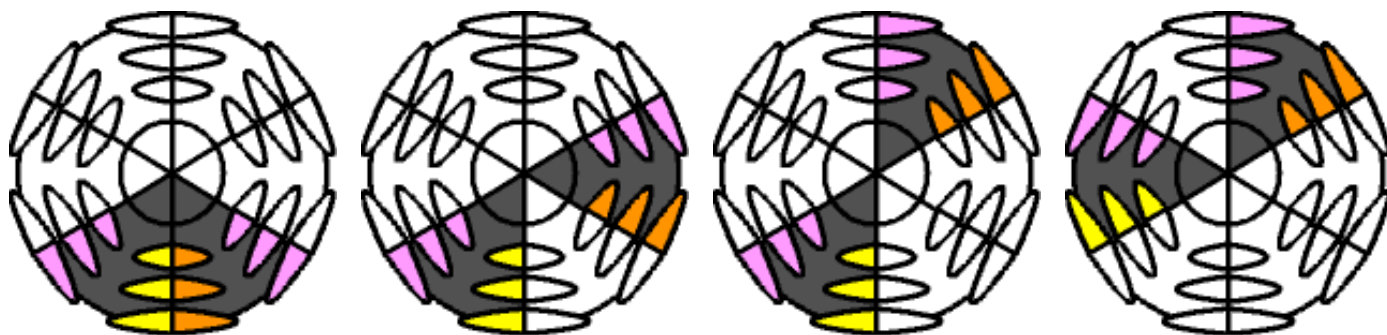
moves. Once you connect 3 black wedges together, then continue to...

2. Solve the Other 3 Black Wedges

Flip the puzzle around to the other face. *Make sure that the 3 original black wedges (that are already solved) stay on the LEFT SIDE OF THE BACK FACE.* You must follow this rule until all 6 black wedges are solved.

Look at the black wedges on the new face. Are there 2 wedges with one set of matching colored lights? If not, rotate the front face until one black wedge (if any) is on the left side. Now twist the entire right half, and there will be at least 2 black wedges in view that can be paired together.

To connect the first pair, rotate the front face until the 2 black wedges are set up like one of the diagrams below. It is important that one black wedge is on the left half while the other is on the right. It is also important that the matching colored lights point upward.



$/+2/-2/+2/$

$/+2/-1/+1/$

$/+2/$

$/+1/$

Result:



One pair of black wedges are connected.

Now it's time to connect the last black wedge. If it is not in view, then rotate the front face until both black wedges (that were just put together) are on the left side, and give the entire right side a twist.

To connect the last wedge, rotate the front face until the 3 black wedges are set up like one of the diagrams below. It is important that the matched pair is on one half (either left or right) while the last black wedge is on the other. It is also important that the matching colored lights point upward.



/+1/-1/+1/-1/+1/



/+1/-1/+1/



/+1/

Result:



The last black wedge is connected



/+2/-1/+1



/+2/



/+1/

Result:



The last black wedge is connected

2. Solve the Entire Face

Once again, make sure that the FIRST 3 black wedges are still together on the back LEFT side. Rotate the front face until all of the LAST 3 black wedges are on the front RIGHT side.



Now give the entire right side a TWIST, and the back side is completely solved.

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II. Solve the Gray Face



1. Connect One Set of Lights Together

Assuming the worst-case senerio; there are NO gray wedges that are matched together. In this case try to find 2 wedges with the same colored lights that are at least NEXT to each other. If you do, then:

Position the wedges that are "almost together" at the upper-left sector...

Do the move:

...to end up with a single set of lights.



$$\begin{matrix} /-1/-1/+1/-1 \\ /-1/+2/+1/+1 \end{matrix}$$



If you cannot find a pair of wedges that are "almost connected", then try this instead (*there is no setup here; just make sure you are looking at the gray face*)...

Do the move:

$$\begin{matrix} /-1/-1/+1/-1 \\ /-1/+2/+1/+1 \end{matrix}$$



Now at least one pair of wedges with the same colored lights are next to each other.

...Guaranteed! Afterwards, go back to the very first chart above to connect at least one set of lights.



What the move does:

It swaps the wedges in the upper-left sector. It also swaps around other wedges as well, but for now we don't care about the fate of those wedges. Here's an interesting note: What would happen if you repeated this move two times, or three times, or even four times?

2. Connect Another Set of Lights



Question: what if I already have THIS?

Look at the diagram at the left; it looks like you already have two sets of lights connected together. But while solving the UFO, you have to keep connecting wedges that are all NEXT to each other, not split apart like in that example. You can only work with one matched pair while sacrificing the other, so continue to:

Position the two wedges that are solved at the upper-right sector...

REPEAT the move:

...until half of the gray face is solved.



/-1/-1/-2
/-1/-2/-2



What the move does:

It keeps the upper-right sector at bay, but rotates the other 4 wedges around. After repeating the move so many times, another matching wedge will eventually land next to that sector, connecting another set of lights. *You may have to repeat this sequence three times.*

3. Solve the Rest of the Puzzle

**CASE I:
Clockwise Swap**



Set Up:

Rotate the gray face until the 3 fixed wedges are on the left half.

Do the Move:

**+1/-1/-2/
-1/-2/-1/
-2/-1/+1**

Result:

The UFO is solved.

**CASE II: Counter
Clockwise Swap**



Set Up:

Rotate the gray face until the 3 fixed wedges are on the left half.

Do the Move:

**-1/-2/-2/-1/
-2/-2/-1/+1/**

Result:

The UFO is solved.

**CASE III:
Single Swap**



Set Up:

Rotate the gray face until the two wedges that need to be swapped are at the upper-left sector.

Do the Move:

**[/-1/-1/+1/-1
/-1/+2/+1/+1]
... x3**

Result:

The UFO is solved.
(repeat the move inside the baskets three times.)

CASE IV.

**CASE IV:
Wide Swap**

Set Up:

Do the Move:

Result:



Rotate the gray face until the two wedges that need to be swapped are both on the left half.

$$[/-1/-1/+1/-1
/-1/+2/+1/+1]
... \times 3$$

This was the same move that was used on CASE III. Three wedges on the gray face still need to be swapped counter-clockwise, so go back to CASE II.

**CASE V:
Double Swap**

Set Up:

Do the Move:

Result:



Rotate the gray face until the 2 fixed wedges are at the upper-right sector.

$$[/-1/-1/-2
/-1/-2/-2]
... \times 2$$

The UFO is solved. (repeat the move inside the baskets twice.)

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