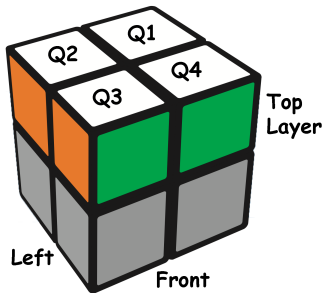


2x2 Rubik's cube solution

Step 1 – Build white layer:



Algorithm: $R' D' R D$

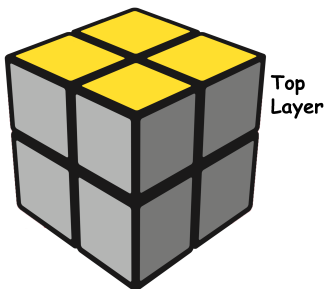
Note:

Color orientation (same as 3 x 3 cube)

- Orange opposite Red
- Green opposite Blue

- Identify first white corner piece & place in Q3 top
- Move other white pieces to correct top locations (if possible)
- When necessary, move appropriate white pieces to Q4 bottom (targeting Q4 top)
- Apply $R' D' R D$ as many times as necessary. This algo:
 - \Rightarrow moves pieces from Q4 Bottom to Q4 Top
 - \Rightarrow repositions pieces into correct color orientation

Step 2 – Build yellow face:



Algorithm: $R U R' U R U^2 R'$

Note: Upper side colors do not matter at this stage

- Flip cube (white layer on bottom)
- Identify case from 3 possible cases:
 - Case 1: One yellow on top \Rightarrow
 - Put piece in Q3 (i.e. yellow is in Q3 top)
 - Apply algorithm (one or more times until yellow face is completed)
 - Case 2: No yellow pieces on top \Rightarrow
 - Put adjacent yellow pieces on *left side* (Q2 & Q3)

- Apply algorithm (will result in one yellow on top)
- Put piece (yellow on top) in Q3 (i.e. yellow is in Q3 top)
- Apply algorithm
- Case 3: Two yellow on top \Rightarrow
 - Place different piece (with yellow on side) so that yellow is in Q3 front
 - Apply algorithm one time (will result in one yellow on top)
 - Put piece (yellow on top) in Q3 (i.e. yellow is in Q3 top)
 - Apply algorithm (one or more times until yellow face is completed)

Step 3 – Build yellow layer and solve cube:



Algorithm: $R' U R' D2 R U' R' D2 R2$

Note: Upper side colors do not matter at this stage

- 2 possible cases:
 - Case 1: Two side panels on upper layer have same color (*i.e.* adjacent panels)
 - Place adjacent panels in the back
 - Position cube with white layer in Front
 - Do algorithm
 - Case 2: All side panels on upper layer have different colors
 - Position cube with white layer in Front
 - Do algorithm
 - Look for 2 side panels on upper layer with the same color
 - Do steps in Case 1

References:

Z3Cubing

- [youtube.com/watch?v=rJlh5p2wAKA](https://www.youtube.com/watch?v=rJlh5p2wAKA)
- worldcubeassociation.org/persons/2014WALK05