Rubik's Cube Functions

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Introduction

Originally made in 1974 by Erno Rubik, the Rubik's Cube was insolvable. Many years passed until the algorithms and methods to solve the cube were widespread and perfected. Since there are many algorithms, is it possible to put the algorithms to solve a Rubik's Cube in functions? Could this be a way to teach students how to follow functions and learn a fun skill?

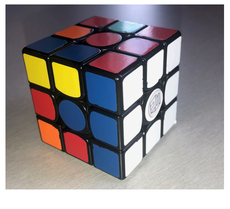
Key for the Patterns

Yellow on top, white on bottom
U=Turn top side left once.
F=Turn front face clockwise once
B= Turn back counterclockwise once
L=Turn left side down once.
R=Turn right side up once.
‘ (prime)=opposite turn of the original meaning.

*The pictures in each step show what the result is from completing that step.

Method

1). Put pieces with white edge, in a cross pattern with each color touching their respective centerpiece.



2). Hold cube with white corner piece facing forward.

{ U R U’ R’ }if corner and slot are on right
{U’ L’ U L } if corner and slot are on the left
{R U2 R’} if corner is facing up

3). Put edge piece facing forward on its matching center color.

{ U R U’ R’ U’ F’ U F} if the color on top of the edge goes in on right side or
{U’ L’ U L U F U’ F’} if edge goes in on left side.

4). Use the algorithm to form a yellow cross on top. If possible form a yellow backwards at with yellow edges at 9 and 12 o’clock.

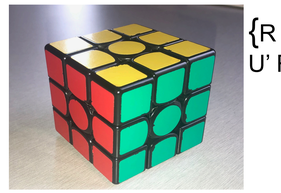
{F U R U’ R’ F’} if there is no yellow cross.

{ R U R’ U R U2 R’ } until top is all yellow.

5). If a pattern that looks like a fish comes up like the picture in step 4, put the yellow square of 4 pointing down and to the left to get a full side of yellow.

{R’ F R’ B2 R F’ R’ B2 R2} Repeat until 3 sides look like the picture and fourth side is completed

6). Put a side with 2 of the same colors corresponding to their side facing backwards. If one side gets completed make that side face backward.



{R U’ R U R U R U’ R’ U’ R2}

7). Put the solved side to the back and finish this last algorithm to complete the cube.

Summary

A scrambled Rubik’s cube has almost unlimited amounts of different combinations. Many people believe that they are to hard for them to understand and complete. With an understanding on how these functions and patterns work completing one is not very difficult. Once a Rubik’s cube is finished a few times, slowly the patterns can be memorized and can be done without even looking at the functions. The best speed cube solvers all follow and set of functions to complete the cube. Not everyone solves the cube the same way because some are much harder to understand, but can allow for faster solving. After looking at various different functions and ways to solve, this way seems to be the easiest.