I. Rubik Notation

Rubik Notation includes the glyphs, letters, and symbols that make up a single 90 degree rotation (or "move") of the Rubik Cube.

An attempt is made to limit move sequences to the following notation (Up, Right, Left, Front):

U   U'   Um   Um'   Us   R   L   F

There is a preference to move the whole cube to access Back $\boxed{B}$ and Down $\boxed{D}$.

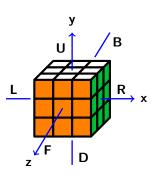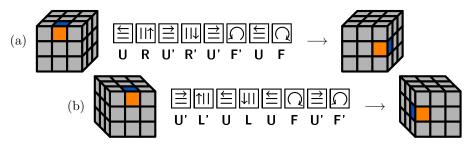As $[y]^2$ will rotate the whole cube 180 degrees, moving the Back face to the Front.

Figure 1: Rubik Notation
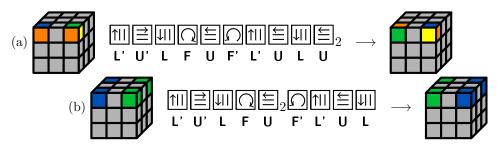
II. Rubik Solving

Make top white face, then $[x]^2$ to bring yellow to the top:
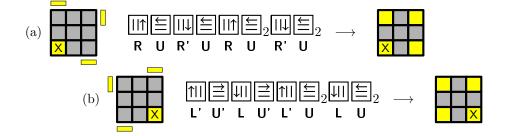
II.A   Edge Moves (use to make middle layer)

(a)

U   R   U'   R'   U'   F'   U   F $\longrightarrow$

(b)

U'   L'   U   L   U   F   U'   F' $\longrightarrow$
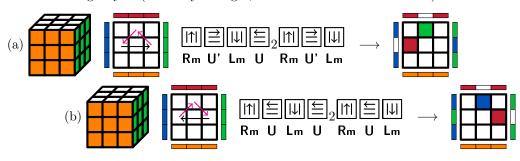
II.B   Corner Swaps (use to get corners in correct position)

(a)

L'   U'   L   F   U   F'   L'   U   L   U $_2$ $\longrightarrow$

(b)

L'   U'   L   F   U $_2$ F'   L'   U   L $\longrightarrow$

II.C   Corner Side-to-Top (use to flip sides up to top)

(a)

R   U   R'   U   R   U   R' $_2$ U $_2$ $\longrightarrow$

(b)

L'   U'   L   U'   L'   U $_2$ L   U $_2$ $\longrightarrow$

II.D   Edge Cycle (use to cycle edges, make sure corners are correct!)

(a)

Rm   U'   Lm   U   Rm   U'   Lm $\longrightarrow$

(b)

Rm   U   Lm   U   Rm   U   Lm $\longrightarrow$
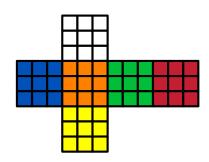
Figure 2: Flat Cube (white opposed by yellow)
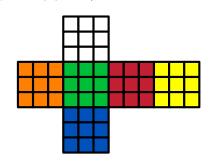
Figure 3: Flat Cube (white opposed by blue)

Figure 4: Random Cube

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II.E Dedmore "H" Pattern

(a) $\left(\dfrac{\boxed{\uparrow\uparrow}\ \boxed{\Leftarrow}}{R_m\ \ U}\right)4\left(\dfrac{\boxed{\uparrow\uparrow}\ \boxed{\Rightarrow}}{R_m\ \ U'}\right)4 \longrightarrow$

(b) $\dfrac{\boxed{\downarrow\downarrow}\ \boxed{\Leftarrow}\ \boxed{\uparrow\uparrow}_2\ \boxed{\Leftarrow}_2\ \boxed{\downarrow\downarrow}\ \boxed{\Leftarrow}_2\ \boxed{\uparrow\uparrow}\ \boxed{\Leftarrow}_2\ \boxed{\uparrow\uparrow}_2\ \boxed{\Rightarrow}\ \boxed{\uparrow\uparrow}\ \boxed{\Leftarrow}_2}{R'\ \ U_m\ \ R\ \ \ U_m\ \ \ R'\ \ U\ \ \ \ R\ \ U_m\ \ \ R\ \ U_m'\ R\ \ U} \longrightarrow$
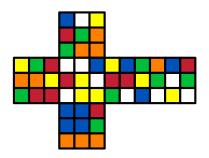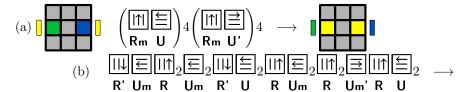
II.F Dedmore "Fish" Pattern

(a) $\left(\dfrac{\boxed{\circlearrowleft}\ \boxed{\uparrow\uparrow}}{F\ \ R}\right) + \text{Dedmore "H"} + \left(\dfrac{\boxed{\downarrow\downarrow}\ \boxed{\circlearrowleft}}{R'\ \ F'}\right) \longrightarrow$

III. Rubik Patterns

A Rubik pattern is the configuration generated by a sequence of rotations from some initial starting configuration (typically a "solved" configuration).

$\underbrace{\dfrac{\boxed{\uparrow\uparrow}_2\ \boxed{\Leftarrow}_2[\mathbf{y}]\ \boxed{\uparrow\uparrow}_2[\mathbf{y'}]}{R_s\ \ \ \ U_s\ \ \ \ \ R_s}}_{\text{PonsAsinorum}} \longrightarrow$

$\underbrace{\left\{\left(\dfrac{\boxed{\downarrow\downarrow}\ \boxed{\Rightarrow}}{R_m'\ U'}\right)4\ [\mathbf{y'}]\ [\mathbf{x}]\right\}3}_{\text{Superflip}} \longrightarrow$

$\underbrace{\dfrac{\boxed{\circlearrowleft}\ \boxed{\downarrow\downarrow}\ \boxed{\circlearrowleft}\ \boxed{\Rightarrow}\ \boxed{\uparrow\uparrow}\ \boxed{\Leftarrow}\ \boxed{\circlearrowleft}\ \boxed{\circlearrowleft}\ \boxed{\downarrow\downarrow}\ \boxed{\downarrow\downarrow}\ \boxed{\Rightarrow}\ \boxed{\uparrow\uparrow}\ \boxed{B}\ \boxed{\Leftarrow}\ \boxed{B'}\ \boxed{\downarrow\downarrow}\ \boxed{\downarrow\downarrow}\ \boxed{\Leftarrow}}{F\ \ \ L\ \ \ F\ \ U'\ \ R\ \ U\ \ F\ \ \ F\ \ \ L\ \ \ L\ \ U'\ L'\ \ \ \ \ D'\ \ \ \ \ \ L\ \ \ L\ \ \ U}}_{\text{CubeInCube}} \longrightarrow$

$\underbrace{\dfrac{\boxed{\circlearrowleft}\ \boxed{\circlearrowleft}\ \boxed{\downarrow\downarrow}\ \boxed{B'}\ \boxed{\Leftarrow}\ \boxed{\downarrow\downarrow}\ \boxed{\downarrow\downarrow}\ \boxed{\circlearrowleft}\ \boxed{\downarrow\downarrow}\ \boxed{\circlearrowleft}\ \boxed{B}\ \boxed{\Leftarrow}\ \boxed{\uparrow\uparrow}\ \boxed{B}\ \boxed{\downarrow\downarrow}\ \boxed{\downarrow\downarrow}}{F\ \ \ F\ \ R'\ \ \ \ \ \ U\ \ R'\ \ L\ \ F'\ \ L\ \ F'\ \ \ \ \ D'\ \ R\ \ \ \ \ \ L\ \ \ L}}_{\text{Python}} \longrightarrow$

$\underbrace{\dfrac{\boxed{\Leftarrow}\ \boxed{\Rightarrow}\ \boxed{\uparrow\uparrow}\ \boxed{\uparrow\uparrow}\ \boxed{\circlearrowleft}\ \boxed{B'}\ \boxed{\Leftarrow}\ \boxed{\Leftarrow}}{U\ \ D'\ \ R\ \ L'\ \ F\ \ \ \ \ \ U\ \ D'}}_{\text{SixSpot}} \longrightarrow$

$\underbrace{\dfrac{\boxed{\circlearrowleft}\ \boxed{\downarrow\downarrow}\ \boxed{\Leftarrow}\ \boxed{\downarrow\downarrow}\ \boxed{\circlearrowleft}\ \boxed{\uparrow\uparrow}\ \boxed{\circlearrowleft}\ \boxed{\Rightarrow}\ \boxed{\uparrow\uparrow}\ \boxed{\Leftarrow}\ \boxed{\uparrow\uparrow}\ \boxed{\Rightarrow}\ \boxed{\downarrow\downarrow}\ \boxed{\circlearrowleft}}{F\ \ R'\ \ U\ \ L\ \ F'\ \ L'\ \ F\ \ U'\ \ R\ \ U\ \ L'\ \ U'\ \ L\ \ F'}}_{\text{OrthogonalBars}} \longrightarrow$

$\underbrace{\dfrac{\boxed{\circlearrowleft}\ \boxed{\circlearrowleft}\ \boxed{\uparrow\uparrow}\ \boxed{\uparrow\uparrow}\ \boxed{\Leftarrow}\ \boxed{\Leftarrow}\ \boxed{\circlearrowleft}\ \boxed{B}\ \boxed{\Rightarrow}\ \boxed{\Rightarrow}\ \boxed{\downarrow\downarrow}\ \boxed{\downarrow\downarrow}\ \boxed{\circlearrowleft}\ \boxed{B}}{F\ \ \ F\ \ R\ \ R\ \ U\ \ U\ \ F'\ \ \ \ \ D\ \ \ D\ \ \ L\ \ \ L\ \ \ F}}_{\text{SixTs}} \longrightarrow$

$\underbrace{\dfrac{\boxed{\circlearrowleft}\ \boxed{\Leftarrow}\ \boxed{\Rightarrow}\ \boxed{\uparrow\uparrow}\ \boxed{B}\ \boxed{B}\ \boxed{\downarrow\downarrow}\ \boxed{\Rightarrow}\ \boxed{\Rightarrow}\ \boxed{\circlearrowleft}\ \boxed{\Leftarrow}\ \boxed{\uparrow\uparrow}\ \boxed{\uparrow\uparrow}\ \boxed{\downarrow\downarrow}\ \boxed{\downarrow\downarrow}\ \boxed{\Rightarrow}\ \boxed{\downarrow\downarrow}\ \boxed{\downarrow\downarrow}\ \boxed{\circlearrowleft}\ \boxed{\circlearrowleft}}{F\ \ U\ \ D'\ L'\ \ \ \ \ \ \ L\ \ U'\ \ D\ \ F\ \ U\ \ R\ \ R\ \ L\ \ L\ \ U'\ L\ \ L\ \ F\ \ F}}_{\text{ExchangedRings}} \longrightarrow$