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Skewb Solution: Introduction

As with the standard Rubik's Cube, there are many different methods for solving a skewb. A beginner's solution written by myself can be found hosted on Nerd Paradise The Dry Erase Board, and it is designed to lead into the solution found on this page. Another beginner's solution can be found at Meffert's Puzzles, the manufacturer of the skewb, although I don't recommend it if you intend to learn a faster method later. Other very good solutions can be found at Jaap Scherphuis' site. Note that Jaap's site has solutions for hundreds of different puzzles, and he also links to about 10 other skewb solutions.

Unfortunately, none of these solutions are designed with speed in mind. Most of them require at least 30 twists (Meffert's solution can take more than 40, depending on the skewb state), and all require constantly switching between left and right hand twists, which is very time consuming.

The following method can be considered a "speed-skewbing" method, because with it I have been able to average less than 10 seconds per solve. A typical solution will take around 20 twists, with an absolute maximum of 24. Going a bit slower, and carefully choosing steps, one can consistantly average 16-18 twists per solve.
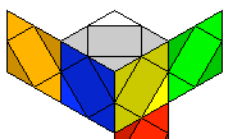
Three Main Steps
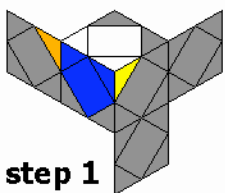
Step 1: Build 2 adjacent centers and the corners in between.
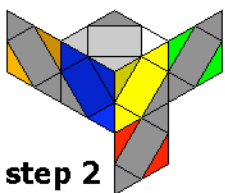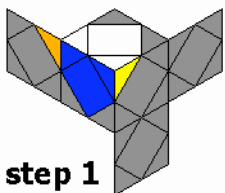

Step 2: Build another center and the 2 adjacent corners to finish the first 'half'.

Step 3: Orient the last 3 corners and permute the last 3 centers.

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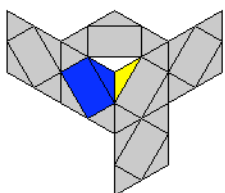
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Skewb Solution: Method: Step 1

step 1

This is an intuitive step. The goal here is to build a small 'block' consisting of two adjacent center pieces, and the corners in between them. Note that if this block is positioned on the L and T faces, one is free to do both r and d twists without disturbing this block.
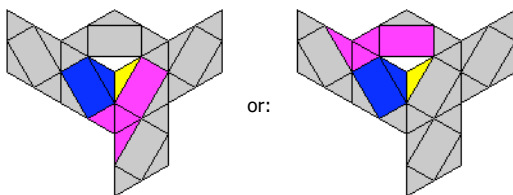
Average # twists: 4
Maximum # twists: 5

Sub-step 1a

Our first step is to choose a center and a corner which are correctly oriented to one another. 99% of the time this will already be done for you, and the rest of the time this takes no more than one twist.

Sub-step 1b

From this point we have two options. We can either build the adjacent pair on the R face, or on the T face:
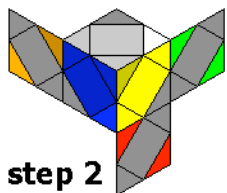
or:

For whichever you choose, out of the resulting 60 cases (3 corner orientations, times 4 corner locations, times 5 center

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Skewb Solution: Method: Step 2

Once again this step is meant to be completely intuitive. If the block from step 1 is placed on the L and T faces, this step can be done entirely with r and d twists, which not only makes it very easy to visualize, it also makes it very fast. After this step the skewb will be half solved, i.e. one complete half will be finished.

Average # twists: 6.5
Maximum # twists: 8

Sub-step 2a

We also have two options for this step. We can either build on the R face, or we can turn the skewb around 180° so that the L and T faces are swapped, and once again build on the right face. Either way we will only be using r and d twists for this step. One should choose whichever is more readily recognizable. Either:

    or:
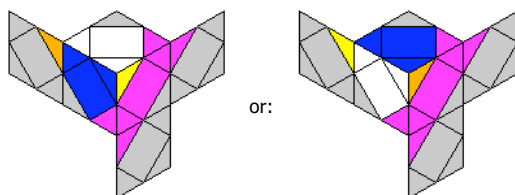
Perhaps the easiest way to do this step is to start by positioning one of the corners correctly (the other will automatically be in the correct location, but with incorrect orientation). Make sure that when you do this the target center piece is *not* in the correct location. No matter what the current configuration, this can always be done in no more than 3 twists. Remember, the goal is to have one corner correctly in place, the other in place but oriented incorrectly, and the center unsolved (if you originally started with either the center correctly in place, or both corners solved, they should be moved out, once again requiring no more than 3 twists). This will result in one of 4 possibilites:
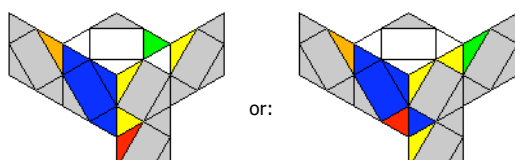
    or:

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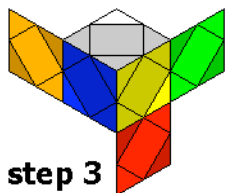
Skewb Solution: Method: Step 3

This step, unlike the other two, is not intuitive. We will be using a single pattern to orient the last 3 corners and permute the last 3 centers all at once. Counting mirrors and inverses, there are 13 different cases, each of which we will need to learn a pattern for. However, recognition time is short, as is execution time for each. One out of twenty-seven times the skewb is already solved.

Average # twists: 8.67
Maximum # twists: 11

Cases

What remains to be done is to orient the corners (either 2 corners, 3 corners, or none) and to permute the centers (either all 3 or none). The combinations are listed first by order of probability, and second by length of the pattern to solve:
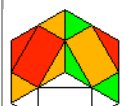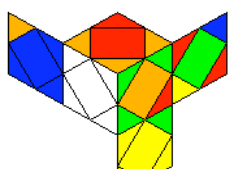
1. 2 corners and 3 centers 44.4% (4/9)
2. 2 corners only 22.2% (2/9)
3. 3 centers only 7.4% (2/27)
4. 3 corners only 7.4% (2/27)
5. 3 corners and 3 centers (matching) 7.4% (2/27)
6. 3 corners and 3 centers (unmatching) 7.4% (2/27)
7. Solved 3.7% (1/27)

I consider cases 5 and 6 to be different cases because they are neither mirrors nor inverses of one another.

Note: r-d notation should be performed from the skewb positions shown. Standard fixed-corner notation should always be performed while looking directly at the fixed corner, i.e. the corner in the middle of the solved half. For cases 1 and 2, the solved corner should be positioned to the top back. For the rest of the cases, the orientation doesn't matter.

Case 1: 2 corners and 3 centers

One of the last three corners is already solved, position the skewb so that the solved corner is to the top back of the skewb. Now, tilt the skewb towards you and 'peek' over that corner. You should see one of 4 things:

What you see:	Position the skewb like this:	Perform this:
a)		r-d notation: (r d ~r ~d) ~L (~d ~r d r) Standard fixed-corner: (r t ~d ~r ~t ~r d t) Note that the centers move clockwise and that the corners are the same color