Instant Insanity

Each cube has three independent pairs of faces
Each pair can appear in 6 different positions
24 combinations of positions are possible: any two pairs can appear in left/right and back/front positions

If one face appears on one side of the stack, the opposite side appears on the opposite side of the stack

Each pair of faces can be represented by an edge

To solve two opposite sides of the stack
Select 4 edges, one from each cube, so that each color appears once on each side

The 4 edges form cycle(s) since each vertex appears exactly twice

To solve: find two separate sets of 4 edges, where each cube appears once in each set, and each vertex appears twice in each set.

Solution