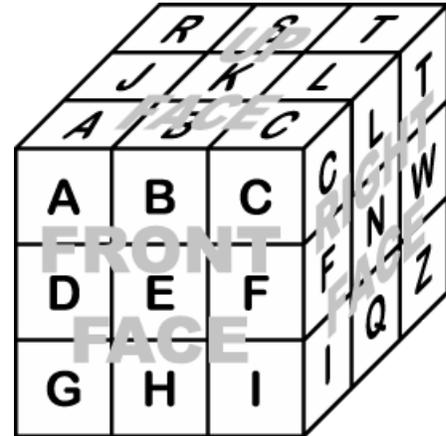


A is for...

ALPHABET CUBES

Imagine a $3 \times 3 \times 3$ cube created from 27 small unit cubes. Starting in the front-upper-left corner, begin labeling the cubes with letters of the alphabet: A, B, C,... progressing left-to-right, top-to-bottom, front-to-back. The only exception is skipping over the very central cube which is removed (thus, a gap is formed between the letter-cubes, M & N, right in the center of the $3 \times 3 \times 3$ block). The diagram to the right shows most of the stacked cubes as seen from one perspective.



Now, imagine being able to push and pull the unit cubes by sliding them into the empty space (which, again, begins in the very middle). The first slide could come *from* any of the six face directions: you could slide the E-cube from the Front face, the K-cube from the Upside face, the M-cube from the Left face, the N-cube from the Right face, the P-cube from the Downside face or the V-cube from the Back face. If the E-cube were chosen, the empty cube space would then occupy the center of the Front face of the $3 \times 3 \times 3$ block (where the E-cube began).

A second move could then be made. Say, for example, sliding the F-cube from the Right face direction. The two moves described above could be abbreviated:

"FR" (for slides *from* the Front and then Right directions)

after which the empty space would be where the F-cube started (and the F-cube where the E-cube started, and the E-cube in the very center).

Now, starting over with the $3 \times 3 \times 3$ block reset, consider the following slides (each letter abbreviation indicates the direction *from* which a single cube slides into the current empty space):

BUFDB/FLF/URDLBRFRBU/LDR/UL/D/RUBLFRDLU/LBRFLDRU/FDBU/LFRB/D/ULDRU/DLU/
 FDRDBUFR/DLURBLF/DBUFL/URDLBRF/B/FLBRF/BRULDRUFL/BDRULDR/DLLURD/U/U/
 DDFUUBDDL/UBDFURDL/RLFDRRURL/B/FDBUFRB/ULDR/UFLDBRULDRUBLF/RDLURDD/LUR/
 LLFR/BL/RRDLU/R/LLURRDLLFDR/UBLFRBL

Every where there is a "/" take note of what letter-cube is positioned in the very center of the $3 \times 3 \times 3$ block (or it may be an empty space). *Do not* reset the cube to the start position once you begin sliding...