

exactly 80 mm: _____

FIRST SOLVE

New here? Do the walkthrough once at cubepath-3s.vercel.app/.
 Learn this cube is the memory jog.

NOTATION

R U L F B = turn that face clockwise, looking at from outside the cube.
r = counter-clockwise, **z** = half turn. Lowercase **r** = that face plus the half turn behind it, turning together.
y = spin the whole cube left, white staying down. A whole-cube turn solves nothing.

WORDS

algorithm = a fixed sequence of turns - trigger = a short algorithm your hands run as one unit

1 WHITE CROSS



White center DOWN. Bring the four white edges to it. Each edge's side color must match the center it touches. No algorithm - work it out. Can't see it? Build the four white edges on the YELLOW face first, then solve its matching center, then turn each one down 180 degrees.

2 WHITE CORNERS

Find a white corner on top, turn U until it sits above the yellow slot it belongs in, then match a picture below and repeat until it drops in.



white sticker RIGHT
RU'R



white sticker FRONT
LU'L



white sticker UP run the first one once to knock it out, then look again
RU'R

3 MIDDLE EDGES

Top edge with NO yellow: Turn U until its front color matches the center it touches. The arrow shows which slot it goes to.

goes **RIGHT**
RU'R y **LU'L**



goes **LEFT**
LU'L y' **RU'R**

Edge stuck in the wrong slot? Run either one to kick it out, then place it.

R **RU'R** sexy move
 R **LU'L** Sune
 R **FRF** sledgehammer
 gap = change grip

FIRST SOLVE

New here? Do the walkthrough once at [cubepath-3x3.vercel.app/learn](#). This card is the memory jogy.

NOTATION

R U' L D B = turn that face clockwise, looking at from outside the cube.
 r = counter-clockwise, 2 = half turn
 Lowercase r f = that face plus the behind it, turning together.
 y = spin the whole cube left, white staying down. = a whole-cube turn solves nothing.

WORDS

algorithm = a fixed sequence of turns = trigger = a short algorithm your hands run as one unit

1 WHITE CROSS



White center DOWN. Bring the four white edges to it. Each edge's side color must match the center it touches. No algorithm – work it out. Can't see it? Build the four white edges on the YELLOW face first, each above its matching center, then turn each one down 180 degrees.

2 WHITE CORNERS

Find a white corner on top, turn U until it sits above the white slot it belongs in, then match a picture below and repeat until it drops in.



white sticker RIGHT
RUR'U'



white sticker FRONT
L'ULU



white sticker UP run the first one once to knock it out, then look again
RUR'U'

3 MIDDLE EDGES

Top edge with NO yellow: Turn U until its front color matches the center under it. The arrow shows which slot it goes to.



goes RIGHT
U' RUR'U' y L'ULU



goes LEFT
U' L'ULU y' RUR'U'

Edge stuck in the wrong slot? Run either one to kick it out, then place it.

RUR'U' sexy move
 RUR'U Sune
 R'RF sledgehammer
 gap = change grip

TWO-LOOK

OLL CROSS - yellow edges



Line bar left-to-right
fRUR'U'f'

Hook hook pointing front-right
fRUR'U'f'

OLL CORNERS - yellow face



Sune $\frac{1}{2}$ yellow, rest clockwise
RUR'U RU2R'

Anti-Sune $\frac{1}{2}$ yellow, rest counter-clockwise
RU2R' U'RUR'

PI $\frac{1}{2}$ yellow; headlights left
fRUR'U'f' fRUR'U'f'

OLL CORNERS - continued



Headlights $\frac{3}{4}$ 2 yellow, headlights at the back
R2DR'U2 RD'R'U2R'

2x Headlights $\frac{3}{4}$ 2 yellow, headlights both sides
RUR'U RU'R' URU2R'

Chameleon $\frac{3}{4}$ 2 yellow next to each other
rUR'U r' FRF'

Bowie $\frac{3}{4}$ 2 yellow diagonal
fR'UR'U r' FR

FAILBACK

The badge on each row is your fallback: that many Sunes, with a U turn around, also finishes the case. Machine-checked, there is the worst.
Top not all yellow and nothing matches? Run Sune and read again.

No yellow edge at all? Run the first one, then read again.

■ RUR'U sexy move
 ■ RUR'U Sune
 ■ R'FRF' sledgehammer
 gap = change grip

TWO-LOOK

OLL CROSS - yellow edges



Line bar left-to-right
fRUR'U'f'



Hook hook pointing front-right
fRUR'U'f'

OLL CORNERS - yellow face



Sune $\frac{3}{4}$ 1 yellow, rest clockwise
RUR'U RU2R'



Anti-Sune $\frac{3}{4}$ 1 yellow, rest counter-clockwise
RU2R' U'RUR'



Pi $\frac{3}{4}$ 0 yellow; headlights left
fRUR'U'f' fRUR'U'f'

OLL CORNERS - continued



Headlights $\frac{3}{4}$ 2 yellow; headlights at the back
R2DR'U2 RD'R'U2R'



2x Headlights $\frac{3}{4}$ 0 yellow; headlights both sides
RUR'U RUR'R URU2R'



Chameleon $\frac{3}{4}$ 2 yellow next to each other
rUR'U'r' FRF'



Bowtie $\frac{3}{4}$ 2 yellow diagonal
f'rUR'U'r' fR

FALLBACK

The badge on each row is your fallback: that many Sunes, with a U turn between, also finishes the case. Machine-checked, there is the worst.
Top not all yellow and nothing matches? Run Sune and read again.

No yellow edge at all? Run the first one, then read again.

■ RUR'U' sexy move ■ URU'U' Sun ■ R'RF'F' algdehammer gap = change grip

ONE-LOOK PLL ADJACENT CORNER SWAP exactly one face shows	ADJACENT CORNER SWAP continued
 T.U. headlights; pairs B-left F-left R'U'R' R'F R2UR'U' RUR'	 Ra.L headlights; pairs F-left R'U'R' RUR DR'UR'D' R'U2R'
 Ja L solid; pairs B-right F-left R-front x R2FRF' RU2 rUr U2	 Rb I headlights; pairs R-left R2F RUR' F'R U2RU2R
 Jb L solid; pairs D-left F-right B-back RUR'F' RUR'U' R'F R2UR'	 Ga I headlights; pairs F-right R2UR'UR'U' RU'R2 U'D R'URD'
 Aa L solid; pairs F-right R-front x L2D2 L'U'L D2 L'UL'	 Gb I headlights; pairs R-back RUR' UD' R2UR'UR' RU'R2D
 Ab I headlights; pairs B-right R-back x L2D2 LUL' D2 LU'L	 Ge I headlights; pairs R-right R2UR'RU RU'R2 UD' RU'RD
 F.I solid RUR'F' RUR'U' R'F R2UR'U' RUR'UR	 Gd I headlights; pairs R-front RUR' UD' R2UR'UR' UR'UR2D
One face shows both diagonals: two corners of that face match. Hold as shown, turn, then turn the top to finish.	
RUR'V sexy/move... RUR'U Sync... R'FRF' sldochameleon gray = change grip	

ONE-LOOK PLI

ADJACENT CORNER SWAP

exactly one face shows headlight



- T 1 headlights; pairs R-left F-left
RUR'U' R'F R2UR'U' RUR'F'
- J a 1 solid; pairs B-right F-left B-front
x R2FRF' RU2 r'Ur U2
- Jb 1 solid; pairs B-left F-right B-back
R'FR' RUR'U' R'F R2UR'U'
- A a 1 headlight; pairs F-right B-front
x L2D2 L'U'L D2 L'U'L
- Ab 1 headlight; pairs B-right B-back
x' L2D2 LUL' L2 LU'L
- F 1 solid
R'U'F RUR'U' R'F R2UR'U'

One face shows headlights: two corners of that face match. Hold as drawn, now, then turn the top to finish.

RUR'U' xcy, move, L'UR'U' xcy, R'FRF' sldochanger can = change grip

ADJACENT CORNER SWAP

continued



- R a 1 headlight; pairs F-left F-right
RUR'U' RUR DR'UR'D R'U2R'
- Rb 1 headlight; pairs B-left B-front
R2F RURU'R' F'R U2RU2R
- G a 1 headlight; pairs F-right F-back
R2UR'UR'U' RU'R2 U'D R'UR'D'
- Gb 1 headlight; pairs B-back B-front
RUR' UD' R'UR'UR'U' RU'R2D
- Gc 1 headlight; pairs B-right B-back
R2UR'UR'U' RU'R2 UD' R'UR'D'
- Gd 1 headlight; pairs R-front R-back
RUR' UD' R'UR'UR'U' UR'UR2D

Learn in the printed order, three a week, about six weeks. Ja and Jb on the same day – one is the mirror of the other.

ANNEX – BIG CUBES AND THE MAP

BIG CUBES

4x4 and 5x5
 Reduce: build the 6 centers → pair the 12 edges → solve it as a 3x3. Rw = 2 layers wide. 3Rw = 3 layers. 2R = 2nd LAYER ONLY – never widen it.

last 2 edges

4x4 PLL parity

$$\begin{matrix} R & U & R' & F' & R' & U \\ 2\text{ edge up} & 2R^2U & 2R^2U & 2R^2U & 2R^2U \end{matrix}$$

solve out, run it, slice back – both cubes
 2 edge pairs swapped - half the time

4x4 OLL parity – 1 edge pair flipped - half the time

Rw U2 x Rw U2 Rw U2 Rw U2 U2 Lw U2 Rw' U2 Rw U2 Rw' U2 Rw' U2 Rw'

one corner flipped - sexy has 12 PLL parity

Rw U2 x Rw U2 Rw U2 3Rw' U2 Lw U2 Rw' U2 Rw U2 Rw' U2 Rw' U2 Rw'

Fix parity during the last layer, before OLL and PLL – both parity algorithms move corners.

NOTATION

Each letter turns the face clockwise, seen from your outside the cube – so from your seat, D and B look counter-clockwise. = counter-clockwise. 2 = half turn.
 M = middle slice, turning the way L turns. x y z = the whole cube, turning the way R and U turn. Lowercase f l = that face plus the layer behind it, turning together.



BEGINNER SHORTCUT

[Twist a yellow corner four times] use it until you know Suno [face between corners]

yellow faces RIGHT R'D'R D x2
 yellow faces FRONT R'D'R D x2

WORDS

algorithm = a fixed sequence of turns - trigger = a solo algorithm your hands run as one unit - sexy move = the R U R' U' trigger - sledgehammer = the R' F R' trigger - parity = a case a 3x3 cannot have - edge pair = two edges glued into one, on a 4x4 or 5x5

RUUR' sexy move **RURU** Suno **RFRF** sledgehammer gap = change grips

ANNEX – BIG CUBES AND THE MAP
PRO A. A. A.

BIG CUBES

4x4 and 5x5

Reduce, build the 6 centers → pair the 12 edges → solve it as a 3x3. Rw = 2 layers wide, 3Rw = 3 layers, 2R = 2nd LAYER only – never widen it.

last 2 edges

4x4 PLL parity

R U R' F' R' F' R

2R 2 U 2R 2 U 2

U 2

2L 2 U 2

2 edge pairs swapped - half the time

4x4 OLL parity = 1 edge pair flipped - half the time

Rw U 2 x Rw U 2 Rw U 2 Rw U 2

Rw U 2 x Rw U 2 Rw U 2 3Rw U 2

same

U 2 Lw U 2 U 2

Rw U 2 Rw' U 2 Rw' U 2 Rw' U 2

Twist a yellow corner four turns at a time, turning ONLY the top face between corners.

NOTATION

Each letter turns that face clockwise, seen from outside the cube – so from your seat L, D and B look counter-clockwise. = counter-clockwise, = 2 half turn.

M – middle slice, turning the W face, turning the yellow R, U and V and turn. Lowercase x if that face plus the layer behind it, turning together.

BEGINNER SHORTCUT

use it until you know None

Twist a yellow corner four turns at a time, turning ONLY the top face between corners.

yellow faces RIGHT

R'D'R'D x2

yellow faces FRONT

D'R'D'R x2

WORDS

algorithm = a fixed sequence of turns - trigger = a short algorithm you hands run as one unit - sexy move = the R U F' U' trigger - slice/turn = the F' R' F' trigger, parity = a case a 3x3 cannot have - edge pair = two edges glued into one, on a 4x4 or 5x5

RU R' U' sexy move
RU R' U' sexy move
R'F'F' slice/algorithm
grip = change grip

Print at 100% / Actual size — do NOT fit to page. Two-sided, flip on the SHORT edge. The number of pages is 10. The width of the page is exactly 80 mm: _____

