

Step 1: Original Parents with Position Indices

Parent 1:	1	2	3	4	5	6	7	8	9
Positions:	0	1	2	3	4	5	6	7	8
Parent 2:	5	4	6	9	2	3	7	1	8
Positions:	0	1	2	3	4	5	6	7	8

Step 2: Find Cycle 1 (Starting from Position 0)

Parent 1:	1	2	3	4	5	6	7	8	9
Parent 2:	5	4	6	9	2	3	7	1	8

Cycle 1 positions:
[0, 4, 1, 3, 8, 7]

Start at pos 0: P1[0]=1, P2[0]=5
Find 5 in P1: position 4
At pos 4: P1[4]=5, P2[4]=2
Find 2 in P1: position 1
At pos 1: P1[1]=2, P2[1]=4
Find 4 in P1: position 3

Step 3: Identify All Cycles

Parent 1:	1	2	3	4	5	6	7	8	9
Parent 2:	5	4	6	9	2	3	7	1	8

All Cycles:

- Cycle 1: [0, 4, 1, 3, 8, 7]
- Cycle 2: [2, 5]
- Cycle 3: [6]

Step 4: Create Child 1 (Alternate cycles: C1 from P1, C2 from P2, etc.)

Child 1:	1	2	6	4	5	3	7	8	9
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Source for each cycle:

Cycle 1: from Parent 1
Cycle 2: from Parent 2
Cycle 3: from Parent 1

Step 5: Create Child 2 (Alternate cycles: C1 from P2, C2 from P1, etc.)

Child 2:	5	4	3	9	2	6	7	1	8
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Source for each cycle:

Cycle 1: from Parent 2
Cycle 2: from Parent 1
Cycle 3: from Parent 2

Step 6: Final Result Comparison

Child 2:	5	4	3	9	2	6	7	1	8
Child 1:	1	2	6	4	5	3	7	8	9
Parent 2:	5	4	6	9	2	3	7	1	8
Parent 1:	1	2	3	4	5	6	7	8	9

Validation:
Child 1: ✓ Valid
Child 2: ✓ Valid

Key Property:
Each element maintains its position from one parent