

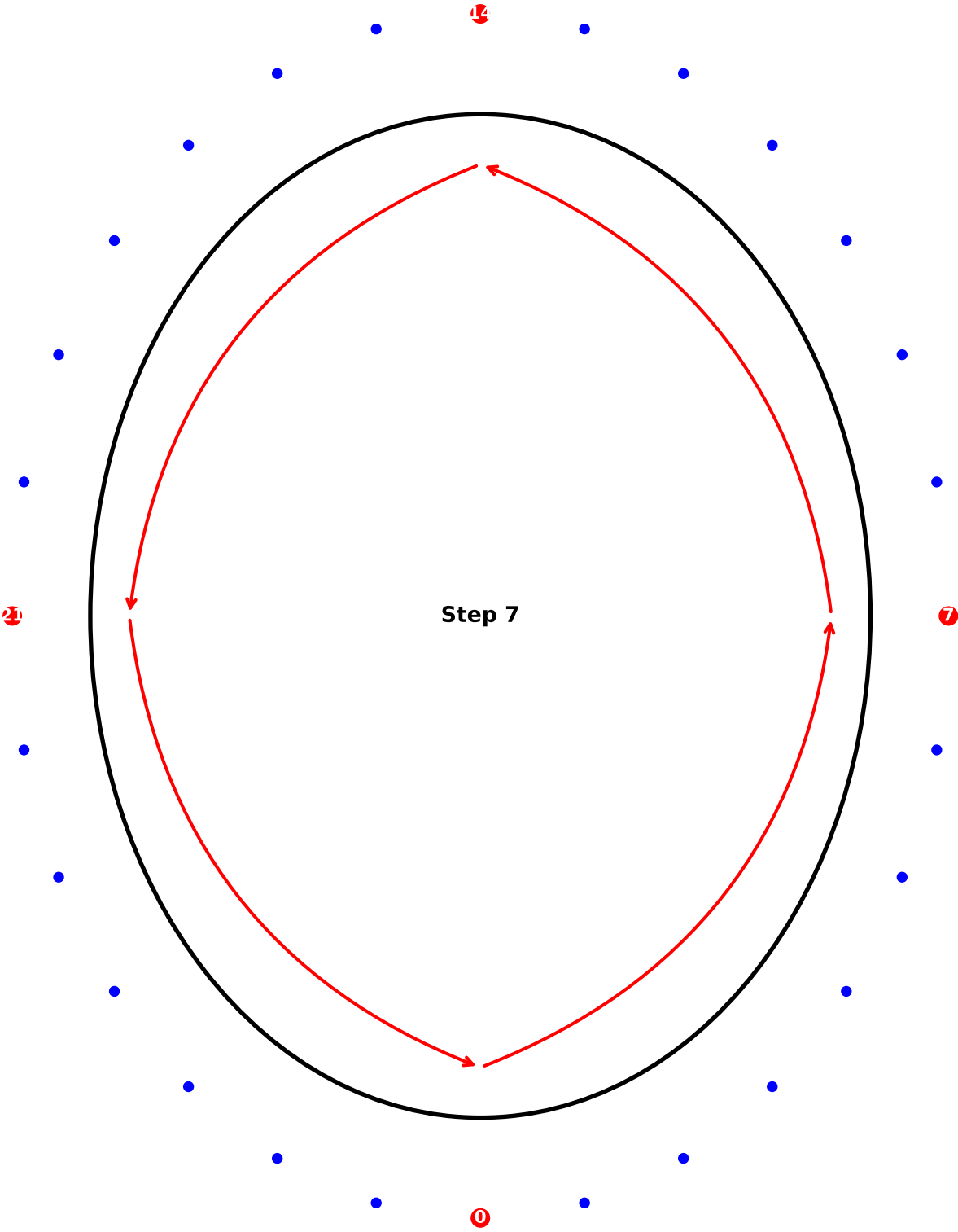
Co-prime Coverage Principle

Why K3 transposition achieves full coverage

Mathematical Foundation:

- Grid has 4 rows
- Step size = 7
- **gcd(4, 7) = 1**
- Since gcd = 1, they are CO-PRIME

Cycle Visualization:



Result:

- Cycle length = 28 positions
- Every position visited exactly once
- No collisions or missed positions
- Complete coverage guaranteed

K4 Application:

Same principle: L=17 with 97 positions → each slot appears ≤1 time