

ELEMENTARY BINARY CALCULATION CHART

1. Addition Rules

Operation	Result	Carry
$0 + 0$	0	0
$0 + 1$	1	0
$1 + 0$	1	0
$1 + 1$	0	1

2. Place Values (8-bit)

2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0
128	64	32	16	8	4	2	1

3. Decimal to Binary Reference

Decimal	4-Bit Binary	Decimal	4-Bit Binary
0	0000	8	1000
1	0001	9	1001
2	0010	10	1010
3	0011	11	1011
4	0100	12	1100
5	0101	13	1101
6	0110	14	1110

Decimal	4-Bit Binary	Decimal	4-Bit Binary
7	0111	15	1111

4. Multiplication Rules

Operation	Result
0 \times 0	0
0 \times 1	0
1 \times 0	0
1 \times 1	1

Template for educational reference. For conversion: Divide decimal by 2 and track remainders upwards.