The Amazing Field Effect Transistor:

Source (Conductor)

Gate (Conductor)

Drain (Conductor)

Body (Silicon)

Gate Insulator (Silicon dioxide)

P/N-type Dopant

N/P-type Dopant

Electrical Flow

N-type Transistor

P-type Transistor

0 at Gate

1 at Gate

Open switch

Closed switch

MOS = Metal Oxide Semiconductor
CMOS = Complementary Metal Oxide Semiconductor
"Complementary" refers to the "matched" pairs of P- and N-type transistors
These circuits are in the static CMOS style

A = 0
B = 0

A = 0
B = 1

A = 1
B = 0

A = 1
B = 1

2-input NAND gate
2-input AND gate

3-input NOR gate