

6502 Instruction Reference

| | Addressing Modes | | | | | | | | | | | | | Flags | | | | | | | | |
|-----|------------------|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|-------|---|---|---|---|---|---|---|-----|
| | ACC | IMP | IMM | REL | ZP | ZPX | ZPY | ABS | ABX | ABY | IND | INX | INY | N | V | - | B | D | I | Z | C | |
| ADC | | | 69 | | 65 | 75 | | 6D | 7D | 79 | | 61 | 71 | N | V | - | - | - | - | Z | C | ADC |
| AND | | | 29 | | 25 | 35 | | 2D | 3D | 39 | | 21 | 31 | N | - | - | - | - | - | Z | - | AND |
| ASL | 0A | | | | 06 | 16 | | 0E | 1E | | | | | N | - | - | - | - | - | Z | C | ASL |
| BCC | | | | 90 | | | | | | | | | | | | | | | | | | BCC |
| BCS | | | | B0 | | | | | | | | | | | | | | | | | | BCS |
| BEQ | | | | F0 | | | | | | | | | | | | | | | | | | BEQ |
| BIT | | | | | 24 | | | 2C | | | | | | M7M6 | - | - | - | - | - | Z | - | BIT |
| BMI | | | | 30 | | | | | | | | | | | | | | | | | | BMI |
| BNE | | | | D0 | | | | | | | | | | | | | | | | | | BNE |
| BPL | | | | 10 | | | | | | | | | | | | | | | | | | BPL |
| BRK | | 00 | | | | | | | | | | | | | - | - | - | - | - | 1 | - | BRK |
| BVC | | | | 50 | | | | | | | | | | | | | | | | | | BVC |
| BVS | | | | 70 | | | | | | | | | | | | | | | | | | BVS |
| CLC | | 18 | | | | | | | | | | | | | - | - | - | - | - | - | 0 | CLC |
| CLD | | D8 | | | | | | | | | | | | | - | - | - | - | 0 | - | - | CLD |
| CLI | | 58 | | | | | | | | | | | | | - | - | - | - | 0 | - | - | CLI |
| CLV | | B8 | | | | | | | | | | | | | - | 0 | - | - | - | - | - | CLV |
| CMP | | | C9 | | C5 | D5 | | CD | DD | D9 | | C1 | D1 | N | - | - | - | - | - | Z | C | CMP |
| CPX | | | E0 | | E4 | | | EC | | | | | | N | - | - | - | - | - | Z | C | CPX |
| CPY | | | C0 | | C4 | | | CC | | | | | | N | - | - | - | - | - | Z | C | CPY |
| DEC | | | | | C6 | D6 | | CE | DE | | | | | N | - | - | - | - | - | Z | - | DEC |
| DEX | | CA | | | | | | | | | | | | N | - | - | - | - | - | Z | - | DEX |
| DEY | | 88 | | | | | | | | | | | | N | - | - | - | - | - | Z | - | DEY |
| EOR | | | 49 | | 45 | 55 | | 4D | 5D | 59 | | 41 | 51 | N | - | - | - | - | - | Z | - | EOR |
| INC | | | | | E6 | F6 | | EE | FE | | | | | N | - | - | - | - | - | Z | - | INC |
| INX | | E8 | | | | | | | | | | | | N | - | - | - | - | - | Z | - | INX |
| INY | | C8 | | | | | | | | | | | | N | - | - | - | - | - | Z | - | INY |
| JMP | | | | | | | | 4C | | | 6C | | | | | | | | | | | JMP |
| | ACC | IMP | IMM | REL | ZP | ZPX | ZPY | ABS | ABX | ABY | IND | INX | INY | N | V | - | B | D | I | Z | C | |
| JSR | | | | | | | | 20 | | | | | | | | | | | | | | JSR |
| LDA | | | A9 | | A5 | B5 | | AD | BD | B9 | | A1 | B1 | N | - | - | - | - | - | Z | - | LDA |
| LDX | | | A2 | | A6 | | B6 | AE | | BE | | | | N | - | - | - | - | - | Z | - | LDX |
| LDY | | | A0 | | A4 | B4 | | AC | BC | | | | | N | - | - | - | - | - | Z | - | LDY |
| LSR | 4A | | | | 46 | 56 | | 4E | 5E | | | | | 0 | - | - | - | - | - | Z | C | LSR |
| NOP | | EA | | | | | | | | | | | | | | | | | | | | NOP |
| ORA | | | 09 | | 05 | 15 | | 0D | 1D | 19 | | 01 | 11 | N | - | - | - | - | - | Z | - | ORA |
| PHA | | 48 | | | | | | | | | | | | | | | | | | | | PHA |
| PHP | | 8 | | | | | | | | | | | | | | | | | | | | PHP |
| PLA | | 68 | | | | | | | | | | | | N | - | - | - | - | - | Z | - | PLA |
| PLP | | 28 | | | | | | | | | | | | N | V | - | - | - | - | D | I | PLP |
| ROL | 2A | | | | 26 | 36 | | 2E | 3E | | | | | N | - | - | - | - | - | Z | C | ROL |
| ROR | 6A | | | | 66 | 76 | | 6E | 7E | | | | | N | - | - | - | - | - | Z | C | ROR |
| RTI | | 40 | | | | | | | | | | | | N | V | - | - | - | - | D | I | RTI |
| RTS | | 60 | | | | | | | | | | | | | | | | | | | | RTS |
| SBC | | | E9 | | E5 | F5 | | ED | FD | F9 | | E1 | F1 | N | V | - | - | - | - | Z | C | SBC |
| SEC | | 38 | | | | | | | | | | | | - | - | - | - | - | - | - | 1 | SEC |
| SED | | F8 | | | | | | | | | | | | - | - | - | - | 1 | - | - | - | SED |
| SEI | | 78 | | | | | | | | | | | | - | - | - | - | - | 1 | - | - | SEI |
| STA | | | | | 85 | 95 | | 8D | 9D | 99 | | 81 | 91 | | | | | | | | | STA |
| STX | | | | | 86 | | 96 | 8E | | | | | | | | | | | | | | STX |
| STY | | | | | 84 | 94 | | 8C | | | | | | | | | | | | | | STY |
| TAX | | AA | | | | | | | | | | | | N | - | - | - | - | - | Z | - | TAX |
| TAY | | A8 | | | | | | | | | | | | N | - | - | - | - | - | Z | - | TAY |
| TSX | | BA | | | | | | | | | | | | N | - | - | - | - | - | Z | - | TSX |
| TXA | | 8A | | | | | | | | | | | | N | - | - | - | - | - | Z | - | TXA |
| TXS | | 9A | | | | | | | | | | | | | | | | | | | | TXS |
| TYA | | 98 | | | | | | | | | | | | N | - | - | - | - | - | Z | - | TYA |
| | ACC | IMP | IMM | REL | ZP | ZPX | ZPY | ABS | ABX | ABY | IND | INX | INY | N | V | - | B | D | I | Z | C | |