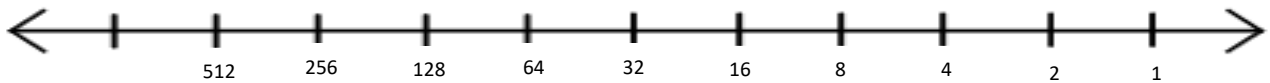


# Binary

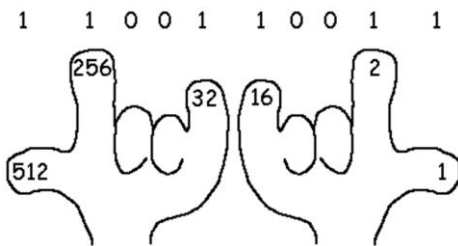
- Base 2 Number System
  - Only has 0 and 1
  - 0 = OFF, low
  - 1 = ON, high
- How it Works
  - $1 = 2^0 = 1$
  - $10 = 2^1 = 2$
  - $100 = 2^2 = 4$
  - $1000 = 2^3 = 8$
  - $10000 = 2^4 = 16$

## Binary Number Line

- Read and write number line from right to left
- Generally starts at 512, but can start higher



## Binary Counting with Hands



- Finger up = 1
- Finger down = 0
- Palms face you (thumbs face outward)
- The highest you can count on fingers is 1023
  - L. Thumb = 512 R. Thumb = 1

# Hexadecimal

- Base 16 Number System
- Hexadecimal = Decimal
  - 0=0
  - 1=1
  - 2=2
  - 3=3
  - 4=4
  - 5=5
  - 6=6
  - 7=7
  - 8=8
  - 9=9
  - A=10
  - B=11
  - C=12
  - D=13
  - E=14
  - F=15
  - 10=16