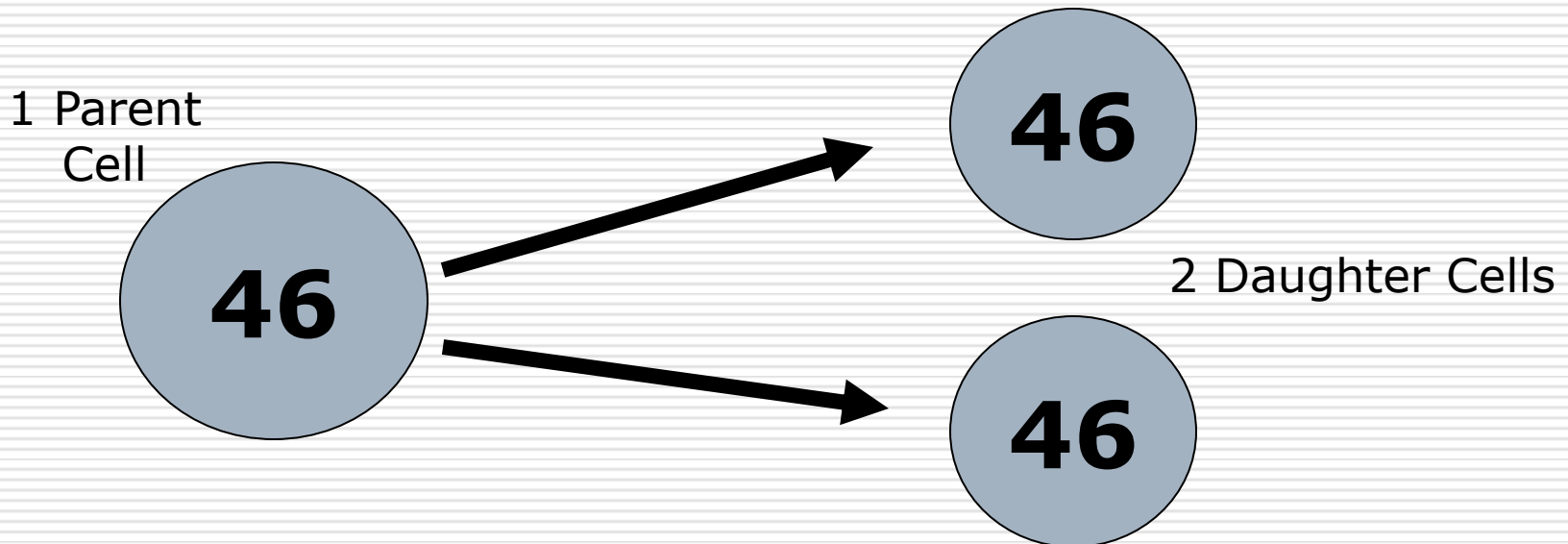# #60: Mitosis
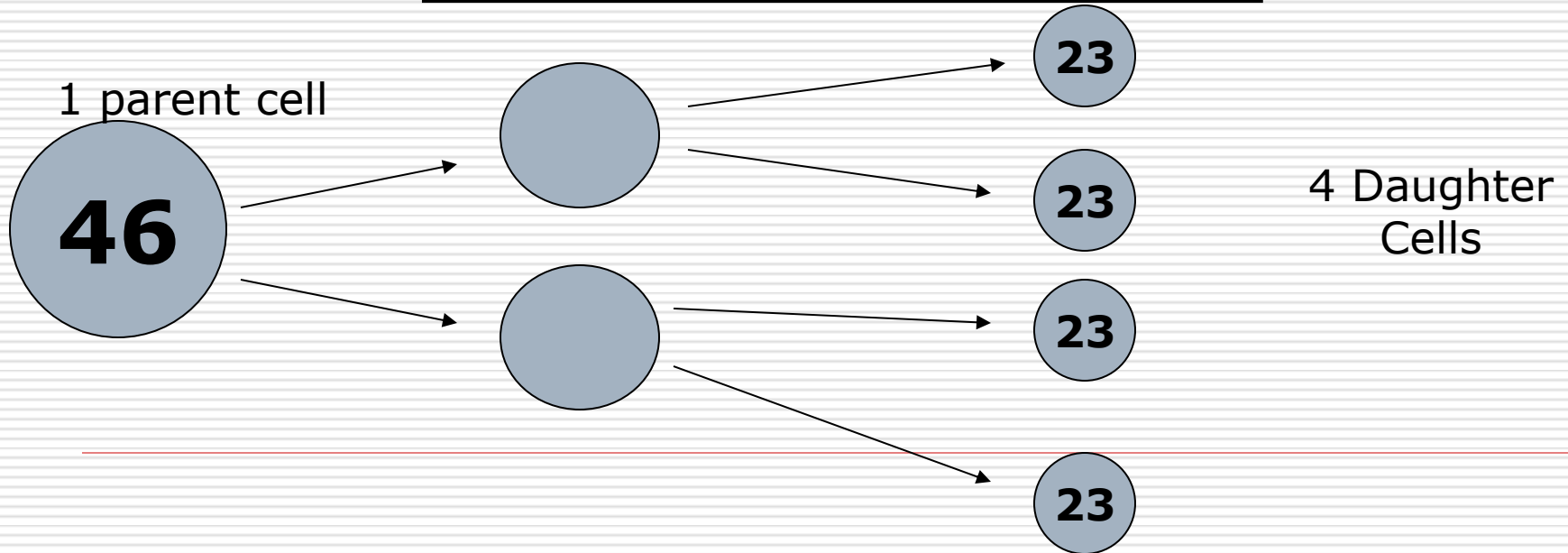
- ☐ Body Cell Division (skin, blood, muscle, bone, etc…)
- ☐ Cell splits one time
- ☐ Human Body cell has 46 chromosomes

1 Parent Cell

46

46

46

2 Daughter Cells

#61: Meiosis

- *Sex Cell Division, in **GONADS** (testes, ovaries)*
- Gametocyte Cell splits two times makes 4 sex cells
- Each has **½ the Chromosomes**

1 parent cell

46

23

23

23

23

4 Daughter Cells

#62: GONAD

- **Sex Organs**
  - Plant
    - Cones (big=female, tiny=male)
    - Flower
      - Male ⟶ Anther
      - Female ⟶ Pistil
  - **Animal**
    - **MALE ⟶ TESTIS**
    - **FEMALE ⟶ OVARIES**

#63: Types of Reproduction

☐ **SEXUAL**: 2 organisms (plant / animal) create a new organism mixing their DNA (sperm and egg)

☐ **Asexual**: (NON SEXUAL) one organism makes a genetic clone / copy of itself

  ☐ Ex- Fission (mitosis) – ameoba, bacteria

  Budding – hydra, yeast

  Spores – fungus (mold, mushrooms), Ferns

#64: GAMETE

- **Sex CELLS**
  - made by Meiosis
  - Combine to make a new organism
  - Have ½ the Chromosomes of the body cells

  - **MALE = Sperm**

  - **FEMALE = Egg / Ovum**

#65: Gametocyte

- *Cell* inside the GONAD **that will** *MEIOSIS* (double split) to **make** a *Gamete* (sperm and egg)
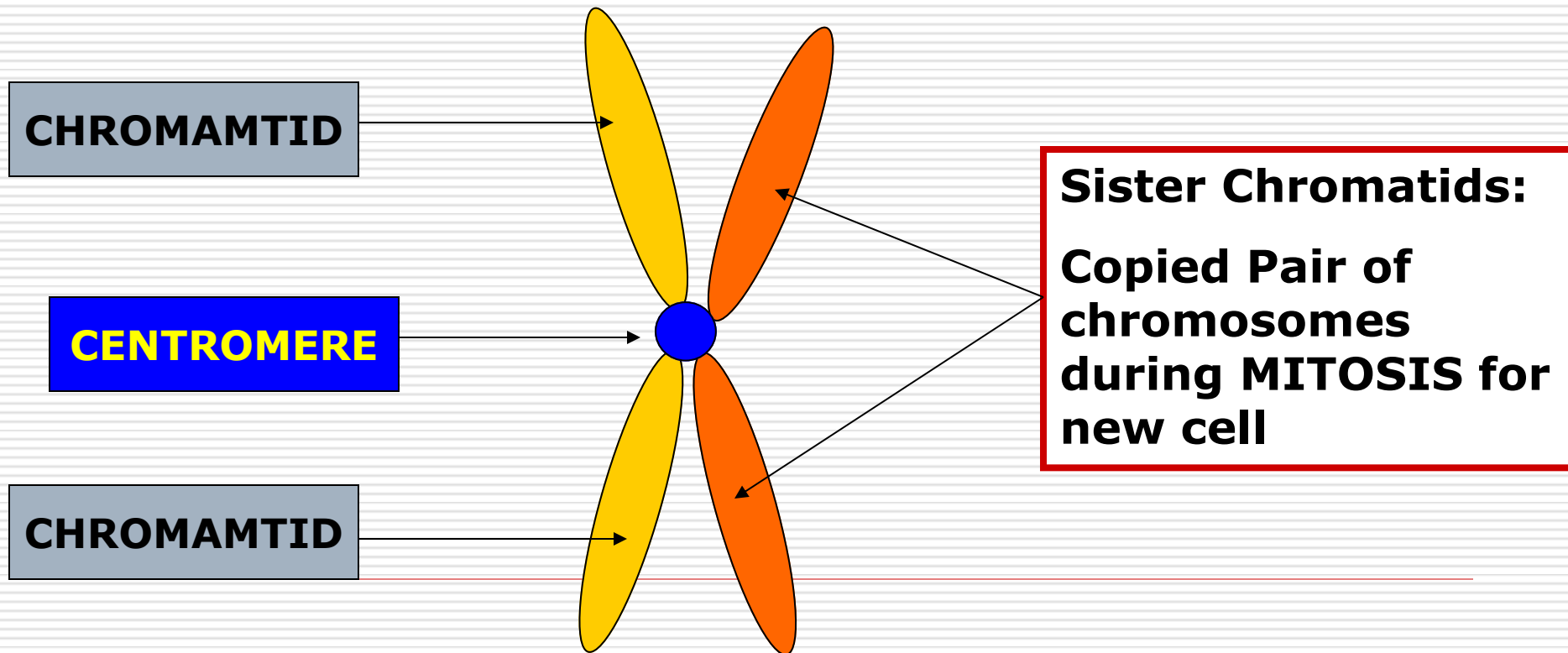
  - Male – Spermacyte

  - Female - Oocyte

#66: Chromosome

Coiled up Package of DNA / 46 in Human Cells

CHROMAMTID

CENTROMERE

CHROMAMTID

Sister Chromatids:

Copied Pair of chromosomes during MITOSIS for new cell

#67: DNA Base Pairs

☐ The genetic code that controls all traits

☐ Are the steps in the "twisted ladder"

☐ ADENINE ←— bonds with —→ THYMINE

☐ GUANINE ←— bonds with —→ CYTOSINE

#68: Dominant Gene

☐ Trait that powers over the Recessive trait

☐ Always a   **CAPITAL LETTER**

#69 Recessive Gene

- ☐ Trait that is covered by Dominant

- ☐ Will only show in a person's appearance when paired with another recessive gene

- ☐ Always shown by a **lower case letter**

#70: Alleles

- ☐ The two GENES that you have for a trait

- ☐ One from each parent

  - ■ CAPITAL LETTERS FOR DOMINANT GENES
  - ■ lowercase letters for recessive genes

#71: Genotype

- The GENE pair (alleles) for a trait

- Two Parents = two Letters

#72: Phenotype

- The trait (gene) that actually shows in a person's appearance

#73: Homozygous (pure)

- **Genotype** with two of the <u>same genes</u> for a trait
- EXAMPLE:
  - **BB** – Homozygous (pure) dominant

  - **bb -** Homozygous (pure) recessive

#74: Heterozygous (hybrid)

- ☐ Genotype with a Dominant gene from one parent and a Recessive from the other

- ☐ The Phenotype will always be the Dominant gene

  - ☐ Ex - **Bb**