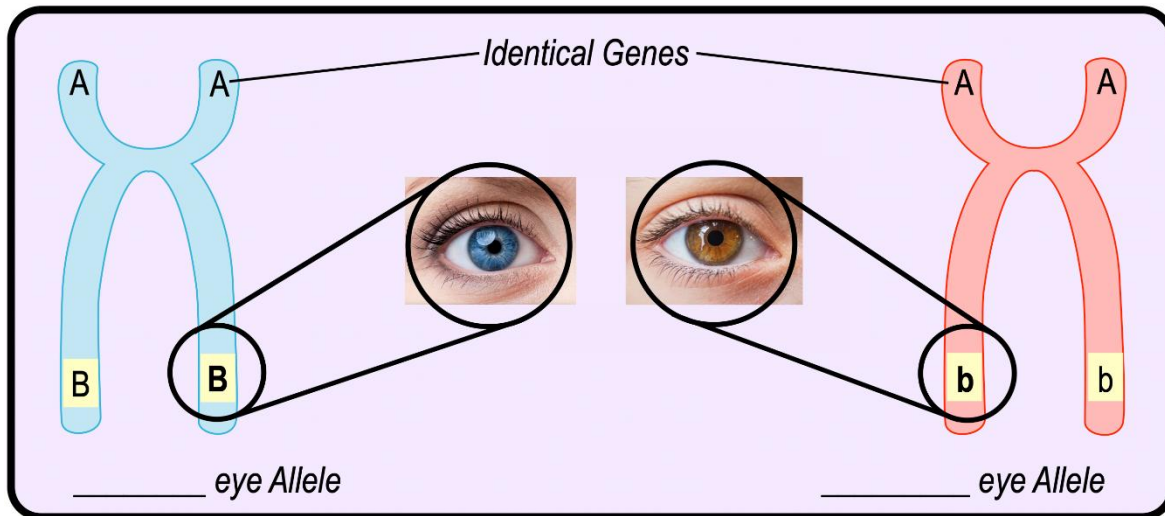


CONCEPT: GENES & ALLELES

- **Genes:** small segments of _____ encoding proteins that could lead to expression of a *trait* (ex. gene for eye color).
 - Alleles: _____ versions of a specific gene (ex. gene for blue eyes vs. gene for brown eyes).
 - Alleles are typically represented using capital/lower-case _____ (ex. B = Blue eyes; b = brown eyes).

EXAMPLE: Alleles for eye color.



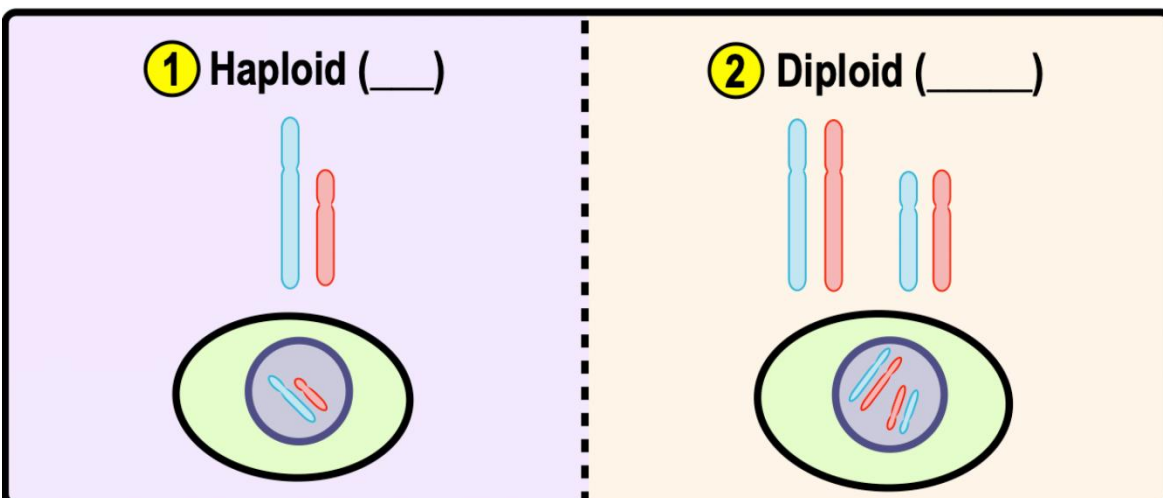
PRACTICE: Alternate forms of the same gene are called:

- a) Chromatids. b) Centromeres. c) Chromosomes. d) Alleles.

Haploid vs. Diploid Cells

- **Cell Ploidy:** the number of _____ of specific genes/chromosomes found in a cell.
 - ① _____ (n): _____ copy of each gene/chromosome.
 - ② _____ (2n): _____ copies of each gene/chromosome; one copy inherited from *each* parent.

EXAMPLE: Haploid vs Diploid.



CONCEPT: GENES & ALLELES

EXAMPLE: Which of the following statements is true of a species that has a chromosome number of $2n = 16$?

- a) The species is diploid with 32 chromosomes per cell.
- b) Each haploid cell of this species has 16 chromosomes.
- c) Each diploid cell of this species has 16 chromosomes from the father and 16 chromosomes from the mother.
- d) Each diploid cell of this species has 8 chromosomes from the father and 8 chromosomes from the mother.

PRACTICE: A cell that has 2 copies of each chromosome is called a _____ cell:

- a) Sperm.
- b) Diploid.
- c) Haploid.
- d) Gamete.

PRACTICE: All human cells, except sex cells, are diploid and have 23 pairs of chromosomes. Human sex cells, such as egg and sperm, are haploid and have _____ chromosomes.

- a) 23
- b) 12
- c) 11.5
- d) 46