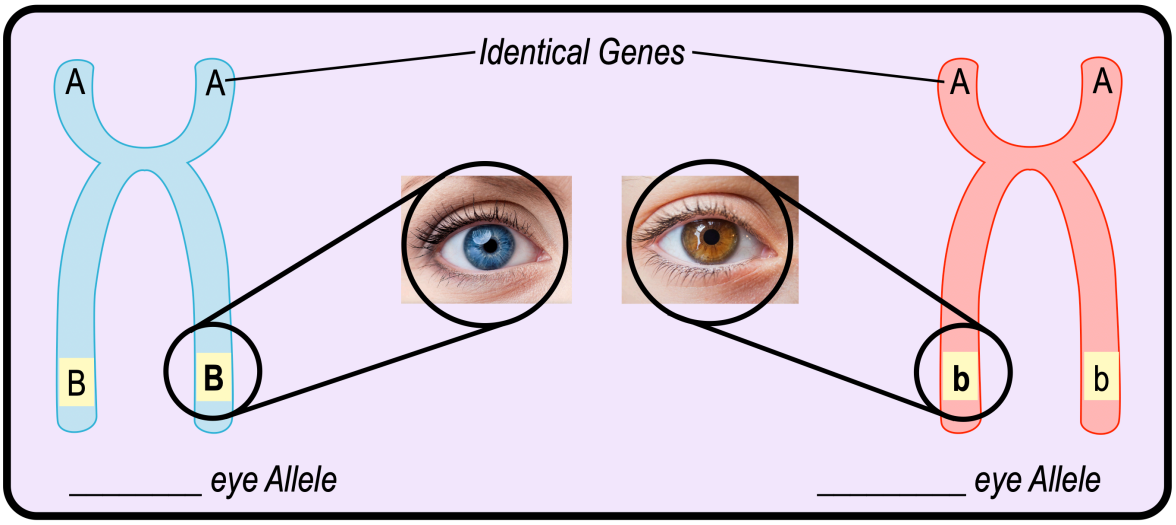
CONCEPT: GENES & ALLELES

●**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:

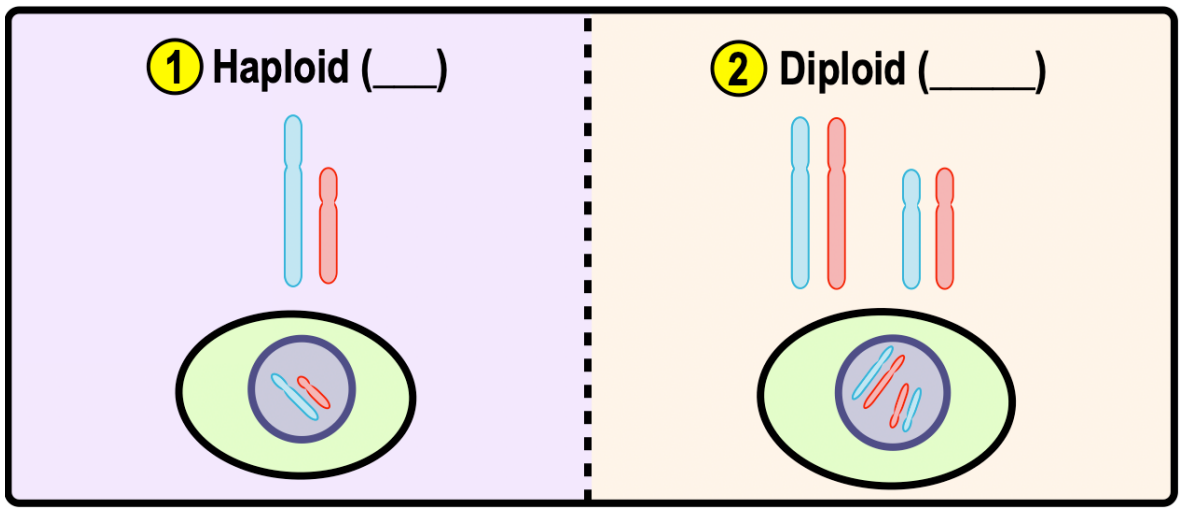
a) Chromatids. b) Centromeres. c) Chromosomes. d) Alleles.

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. _____ (**2*n***): ____ *copies* of each gene/chromosome; one copy inherited from *each* parent.

EXAMPLE: Haploid vs Diploid.



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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