## Terms

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| allele | The chromosomal or genomic location of a gene or any other genetic element is called a locus and alternative DNA sequences at a locus are called alleles. |
| chromosome | Double stranded DNA molecule packaged by histone & scaffold proteins. |
| diploid/h-aploid | Diploid cells contain two complete sets of chromo-somes, one from each parent. Haploid cells contain half that - a single set of unpaired chromosomes from one parent. (In humans only sex cells are haploid.) |
| genome | All genes in an individual or in a species. |
| genotype | The complete set of genetic material of an organism. |
| hetero-zygous | Two different alleles. |
| homozygous | Two identical alleles. |
| karyotype | An individual's complete set of chromosomes. |
| phenotype | The set of observable characteristics or traits of an organism. |
| proteome | All proteins produced by a genome. |

## Genetic Concepts

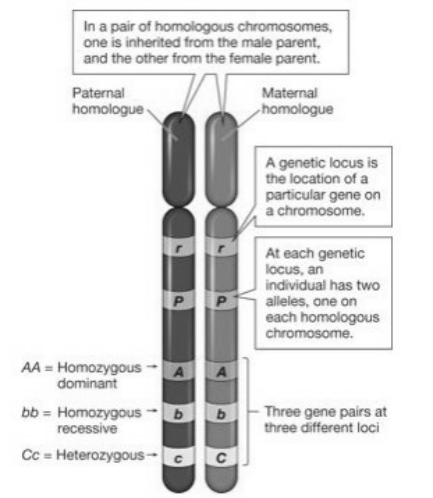
- Each individual inherits n # of chromo-somes from father & n # from mother.
- Humans: 46 chromosomes = 2n (23 paternal, 23 maternal).

## Genetic Concepts (cont)

A variation in DNA sequence at a locus is called an allele.

- Diploid organisms contain 2 alleles of each locus (gene).
- Alleles can be identical (homozygous), different (heterozygous), or if only one allele is present (hemizygous).
- Human genome has <25,000 genes but produces >100,000 different proteins.

## Homologues




## Rh Factor Lab Procedure

1. Place one drop of anti-Rh serum on a clean glass slide.
2. Add an equal amount of fingertip blood and mix it with the antiserum (use an applicator stick or a toothpick).
3. Place the slide on a slide warmer (45°C to 50°C) and rock it back and forth.
4. Examine the slide for agglutination. If no agglutination is observed after a 2-minute period, examine the slide under the low-power objective of the microscope. The presence of grains of agglutinated red blood cells indicates Rh positive blood.

## ABO Blood Typing Lab Procedure

1. Draw a line down the center of a clean glass slide with a marking pencil and label one side A and the other side B.
2. Place a drop of anti-A serum on the side marked A and a drop of anti-B serum on the side marked B.
3. Add a drop of blood to each antiserum and mix each with a separate applicator stick.
4. Tilt the slide back and forth and examine for agglutination over a 2-minute period. Do not heat the slide on the slide warmer.
5. Enter your ABO blood type in the laboratory report.