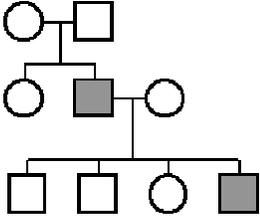


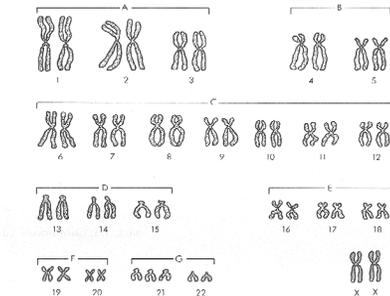
# Human genetics information sheet

## Tools for Studying Genotypes and Phenotypes

1. What is a pedigree? **A visual representation of a trait over several generations.**



2. What is a karyotype? **A photograph of an individual's chromosomes.**



a. What can it tell you?

- i. **If a person has any chromosome abnormalities.**
- ii. **A person's gender**

b. What can't it tell you? **Anything about the individual genes**

c. What is an amniocentesis? **A procedure to test an unborn baby by sampling cells in the amniotic fluid.**

## 1. Unusual Inheritance

a. Co-Dominance - Blood type

i. Dominant alleles - **A, B**

ii. Recessive alleles **O**

iii. Types

- **A (from genotype of AA or AO - puts an A tag on the cell)**
- **B (from genotype of BB or BO - puts an A tag on the cell )**
- **AB (from genotype of AB)**
- **O (from genotype of OO - trait puts no tag on the cell)**
- **rH + or - (added onto Basic ABO blood type. + is dominant, - is recessive)**

iv. Compatibility - **General Rule "Nothing Extra". You cannot get any alleles that you do not have in your own blood.**

v. Universal Donor - **O-** (has nothing

vi. Universal Recipient **AB +**

## 2. Sex Chromosomes

- a. How many total pairs of chromosomes does a human have? **23 pair**
- b. Where did each chromosome in the pair come from?  **$\frac{1}{2}$  from each parent**
- c. How many autosomal chromosomes does a human have? **22 pair**
  - a. What type of information do they carry? **Generic traits that affect either gender**
- d. How many sex chromosomes does a human have? **1 pair**
  - a. What type of information do they carry? **Mostly traits that cause the differences between males and females.**
  - b. What are the two different sex chromosomes you can have? **X or Y**
  - c. What combination makes a girl? **XX**
  - d. What combination makes a boy? **XY**
- e. Which parent determines the sex of a baby? **Father**
- f. Sometimes (rarely) there are mistakes
  - a. Klinefelter's syndrome **XXY**
  - b. Supermale **XYY**

## 3. Sex Linked Inheritance - Colorblindness, Hemophilia

- a. Defn:
- b. Punnet Square

