

## Unit 5: Lab 14 Chromosome Study - Karyotype

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### Introduction:

The following exercise gives the student a diagram of highly magnified human chromosomes. These structures are replicated and passed on to new cells when the cell divides by mitosis.

### Objective:

The students will learn what a karyotype is by preparing two different ones.

### Materials:

- Scissors
- Paper
- Clear tape
- Chromosome mixes.

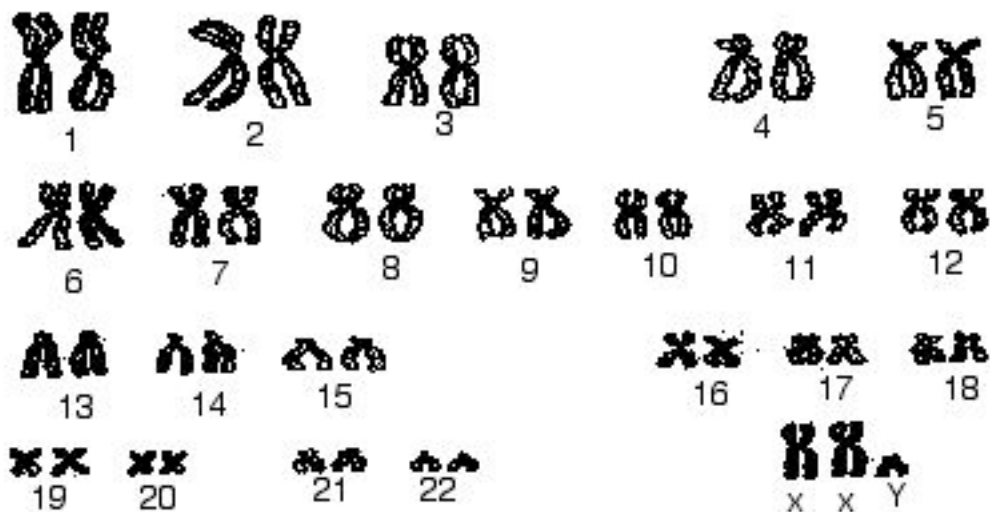
### Procedure:

Examine the page of chromosomes supplied in the lab. These chromosomes are greatly enlarged. Try and cut out each chromosome with a bit of paper surrounding it to facilitate easy movement.

Prepare a karyotype of these chromosomes. A karyotype is a pattern of chromosomes grouped into pairs and then organized by size starting with the largest.

To help determine pairs, use the location of the centromere. The centromere is the narrow place on the chromosomes where chromatids of a chromosome are joined.

Match all chromosomes into pairs as best as you can. Before you glue the chromosomes use the sample karyotype found below as a guide.



Print Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_  
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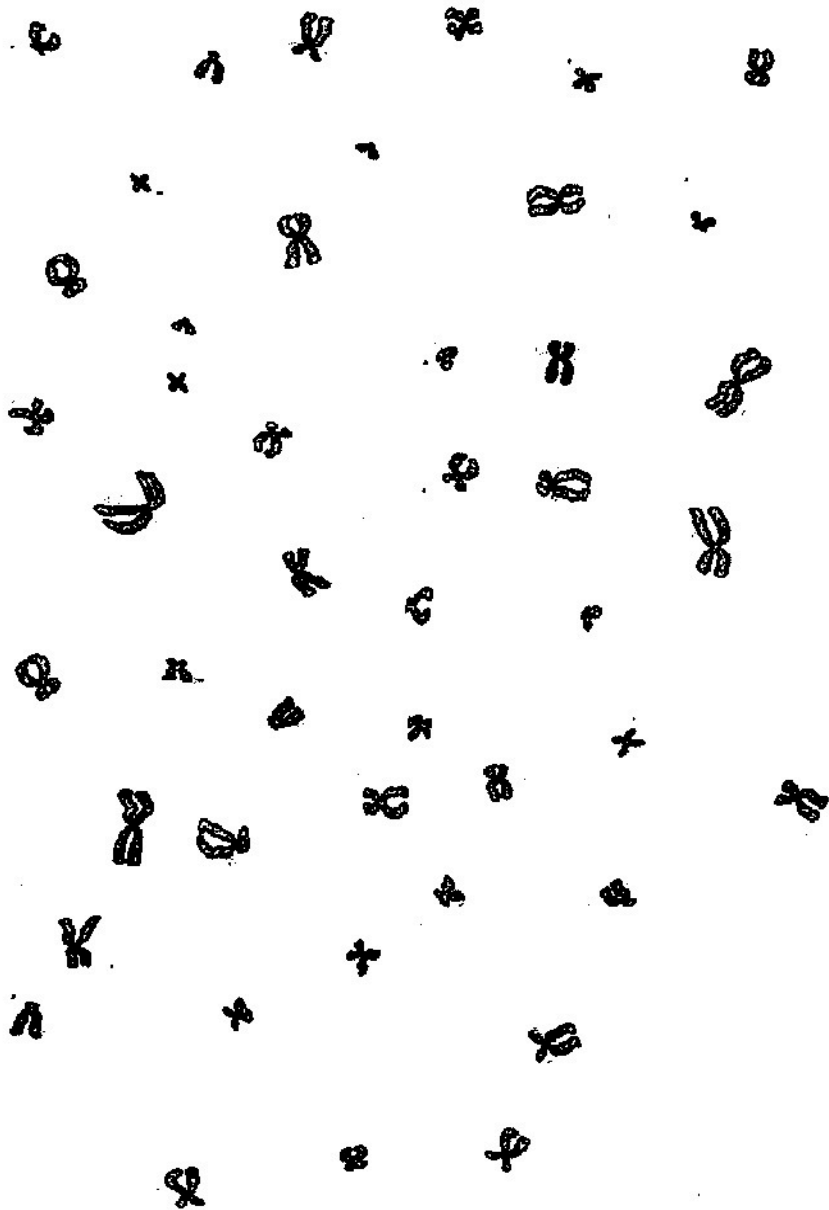
Chromosome Spread 1



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Chromosome Spread 2



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Summary:

1. How many chromosomes are present in the first chromosome spread? \_\_\_\_\_
2. How many chromosomes did the sperm contain? \_\_\_\_\_
3. Which sex chromosomes are found in sample 1? \_\_\_\_\_. Sample 2? \_\_\_\_\_
4. What is the sex of the organisms? 1 \_\_\_\_\_, 2 \_\_\_\_\_.
5. Are there any abnormal chromosome matches in either sample 1 or 2? \_\_\_\_\_
6. If so which one? \_\_\_\_\_
7. What possible chromosomal problems might be present in either sample?  
 \_\_\_\_\_  
 \_\_\_\_\_

Complete the following Chart:

Trait	Gamete (sex cells)	Regular Body Cells
Name of the reproductive process responsible for its formation		
Diploid (Yes or No)		
Haploid (Yes or No)		
Contains paired chromosomes		
Unpaired chromosomes present		
Contains both X and Y chromosomes		
Contains either X or Y chromosome		