

Making A Karyotype

Cut out the chromosomes and prepare a karyotype.

Remember.....Chromosomes are paired by

- ◆ Size (largest to smallest)
- ◆ Centromere location
- ◆ Banding pattern

Lay out your karyotype to look similar to the following:
NUMBER your chromosomes!

Normal male karyotype

Normal female karyotype

Down syndrome (trisomy 21): The result of an extra copy of chromosome 21. People with Down syndrome are 47, 21+. Down syndrome affects 1:700 children and alters the child's phenotype either moderately or severely.

Patau syndrome (trisomy 13): serious eye, brain, circulatory defects as well as cleft palate. 1:5000 live births. Children rarely live more than a few months.

Edward's syndrome (trisomy 18): almost every organ system affected 1:10,000 live births. Children with full Trisomy 18 generally do not live more than a few months.

Klinefelter syndrome: 47, XXY males. Male sex organs; unusually small testes, sterile. Breast enlargement and other feminine body characteristics. Normal intelligence.

Trisomy X: 47, XXX females. 1:1000 live births - healthy and fertile - usually cannot be distinguished from normal female except by karyotype

Monosomy X (Turner's syndrome): 1:5000 live births; **the only viable monosomy** in humans - women with Turner's have only 45 chromosomes!!! XO individuals are genetically female, however, they do not mature sexually during puberty and are sterile. Short stature and normal intelligence. (98% of these fetuses die before birth)

An 8" x 11"
piece of
regular paper.

Your Name _____ Set ____ Period ____

XX **XX** **XX** **XX** **XX**
1 2 3 4 5

XX **XX** **XX** **XX** **XX** **XX** **XX**
6 7 8 9 10 11 12

XX **XX** **XX** **XX** **XX** **XX**
13 14 15 16 17 18

XX **XX** **XX** **XX** **XX or XY**
19 20 21 22 23

Condition _____ Sex _____