

Name:

Date:

KARYOTYPE WORKSHEET

Answer the questions below!

1. What is a karyotype?

A karyotype is a visual representation of an individual's complete set of chromosomes, arranged in pairs based on size, shape, and number.

2. Why are karyotypes useful in genetics?

Karyotypes help identify chromosomal abnormalities that can lead to genetic disorders. They are used to diagnose conditions such as Down syndrome, Turner syndrome, and Klinefelter syndrome.

3. How are chromosomes arranged in a karyotype?

Chromosomes are arranged in pairs from largest to smallest. The last pair determines the sex of the individual (XX for female, XY for male).

4. How could a karyotype help in diagnosing genetic disorders during pregnancy?

Karyotypes can be used to detect chromosomal abnormalities in a fetus through procedures like amniocentesis or chorionic villus sampling, allowing early diagnosis of genetic disorders.

5. What are the limitations of using a karyotype in diagnosing genetic disorders?

Karyotypes can only detect large-scale chromosomal abnormalities, such as extra or missing chromosomes. They cannot detect small mutations or gene-level disorders.