Name: _____ Date: _____

Notes: Studying the Genome (DNA Technology)

What do we call the structures of DNA found in cells? _____

How many ***pairs*** of chromosomes do humans have? _____

How many ***total*** chromosomes do humans have? _____

Define **genome**: _____

What do **karyotypes** show? _____

What does staining a chromosome reveal? _____

What are **homologous pairs** of chromosomes? _____

_____

What process uses ***fluorescent*** markers to dye chromosomes?

_____

What can chromosome painting help diagnose? _____

What does chromosome painting allow scientists to compare?

_____

What types of *mutations* does FISH reveal? _____

What is the first of **gel electrophoresis**? _____

What is used to cut up DNA? _____

Electrophoresis separates DNA based on what? _____

What does gel electrophoresis create? _____

Why are DNA fingerprints unique? _____

_____

Why can DNA fingerprints be used to test for **paternity**? _____

_____

How else can DNA fingerprints be used? _____

_____

Define ***recombinant DNA***: _____

_____

What is used to cut out a gene of DNA? _____

What do we call joining two fragments of DNA together? _____

What do *ALL* living things use? _____

What do we call the way information is coded into all life? _____

How can recombinant DNA technology be applied to farming? _____

_____

How can DNA technology be used in the medical field? _____

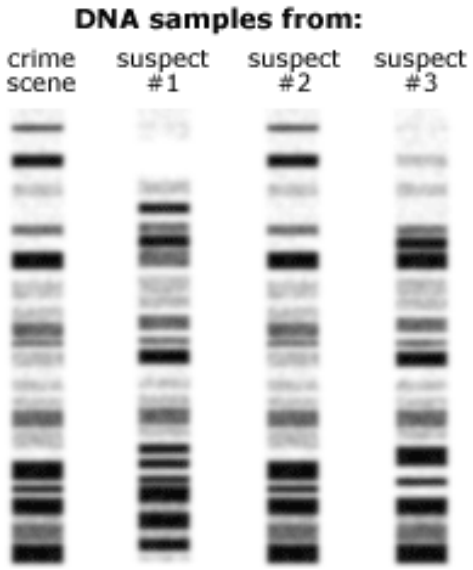
_____

What is done to create a **knockout** organism? _____

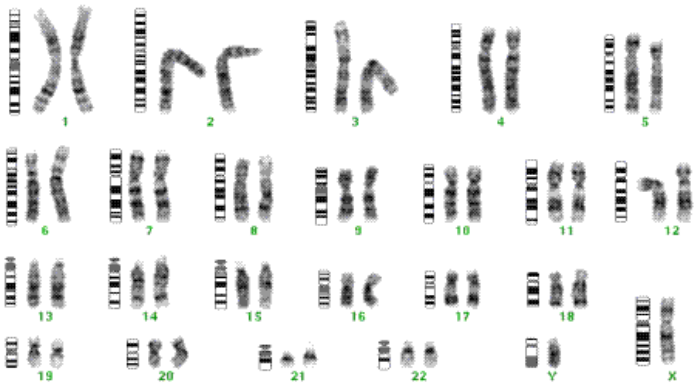
_____

What does *knocking out* a gene help scientist study? _____

_____



DNA Fingerprints



Karyotype Showing *Banding Patterns*