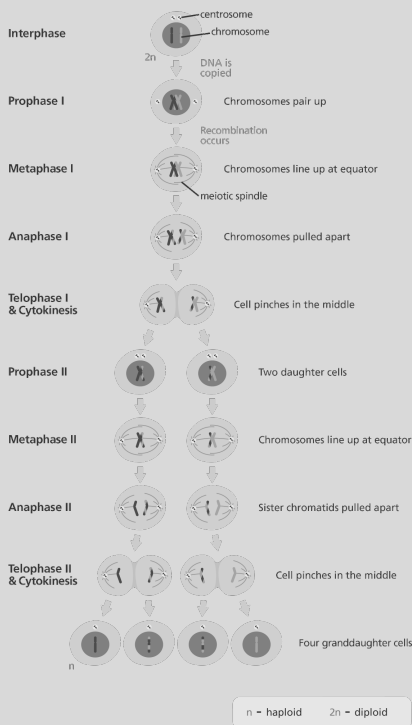


Meiosis



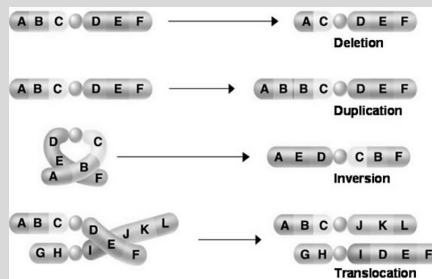
Mutations

mutation genetic or chromosomal (deletion, inversion, translocation, polyploidy) abnormality

karyotype diagram that shows size, #, & shape of chromosomes

nondisjunction failed separation of homologous chromosomes → aneuploidy (trisomy, polyploidy)

Chromosome Mutations



Mendelian Laws

Law of Dominance

offspring of 2 organisms that are homozygous for 2 opposing traits will be hybrid but will only exhibit the dominant trait and not the recessive trait

Law of Segregation

during formation of gametes, the 2 traits carried by each parent will separate

Law of Independent Assortment

alleles of a gene for one trait segregate independently from alleles of a gene for another trait (applies w/dihybrid cross)

Genes

linked genes on the same chromosome

sex-linked traits carried on X chromosome

linkage mapping ↑ distance between genes on chromosome = ↑ chance of separation by crossing over

recombination = total recombinants / total # offspring x 100

frequency

pedigree used to determine how traits are inherited

Barr body inactivated X chromosome in each female mammal's somatic cell → genetic mosaic

Types of Crosses

monohybrid cross Tt x Tt; phenotype ratio=3:1; genotype ratio=1:2:1

testcross B/_ x b/b to determine B/_ 's genotype

dihybrid cross TtYy x TtYy; can produce 4 types of gametes & phenotype ratio=9:3:3:1

Dihybrid Cross

	<i>AB</i>	<i>Ab</i>	<i>aB</i>	<i>ab</i>
<i>AB</i>	<i>AABB</i>	<i>AABb</i>	<i>AaBB</i>	<i>AaBb</i>
<i>Ab</i>	<i>AABb</i>	<i>AAbb</i>	<i>AaBb</i>	<i>Aabb</i>
<i>aB</i>	<i>AaBB</i>	<i>AaBb</i>	<i>aaBB</i>	<i>aaBb</i>
<i>ab</i>	<i>AaBb</i>	<i>Aabb</i>	<i>aaBb</i>	<i>aabb</i>

Types of Inheritance

incomplete dominance hybrids show blending of traits

codominance hybrids show both traits

multiple alleles more than 2 allelic forms

pleiotropy 1 gene affects an organism in several/many ways

epistasis 2 genes, 1 trait; 1 masks expression of the other

polygenic blending of several genes that vary along a continuum