

Sex-Linked Inheritance

Sex Chromosomes = chromosomes that determine the gender of the individual

- May carry other traits as well
- In most species, the females' are identical (XX) = "homogametic" and the males' differ (XY) = "heterogametic"
- In humans, after meiosis, each haploid gamete has 22 autosomes and 1 sex chromosome
 - Females can only give an X
 - Males can give either an X or a Y
 - 50 % chance of either
 - determines the gender of the child
- When solving X-linked crosses, you must include the sex chromosomes and designate the genotype as a letter carried on each
 - Heterogametic sex (males) are said to be hemizygous for sex-linked traits (because they only have 1 allele instead of 2 for a that trait)
- Humans X-linked traits include: Red-green Color-blindness, Menkes Syndrome, Duchenne Muscular Dystrophy, Hemophilia, ALD (Lorenzo's Oil), and male Pattern Baldness

XX = normal female
 $X X^c$ = normal female (carrier)
 $X^c X^c$ = colorblind female

XY = normal male
 $X Y^c$ = colorblind male
 (males CAN'T be carriers of sex-linked traits, have it or don't)

