

Sex-Linked

2 types of chromosomes

autosomal - chromosomes NOT involved in sex determination (pairs 1-22 in humans)

sex - chromosomes that determines sex of organism (23rd pair in humans)

Gene located on sex chromosome (usually X)

Male

XY

Female

XX

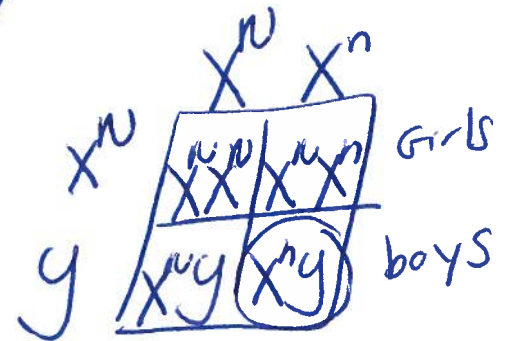
Ex. Red Green Color Blindness, Hemophilia, Eye Color in Fruit Flies

RGC

recessive traits located on the X chromosome.

mom x dad
carrier normal

'Normal' Female = $X^N X^N$, $X^N X^n$
 RGC Female = $X^n X^n$
 carrier N = normal
n = RGC



'Normal' male = $X^N y$
 RGC male = $X^n y$

Polygenic Inheritance

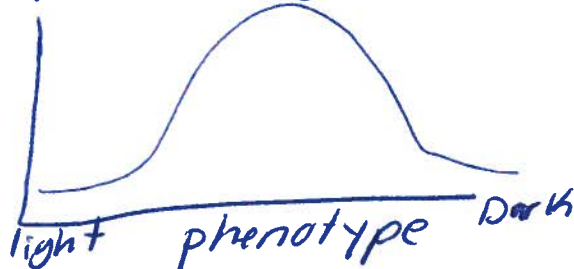
Two or more gene pairs determines the trait.

Ex. Skin color, height

$\frac{Aa}{1} \frac{Bb}{2} \frac{Cc}{3}$

More, # of, Dominant alleles = darker skin

$AABBCC = \text{Darkest}$
 $aabbcc = \text{lightest}$



Epistasis

Two different gene pairs influence phenotype.

Ex. Labradors coat color

E = express the dark pigment
 e = Does NOT
 B = Black
 b = Brown

$EeBb = \text{Black Lab}$
 $eeBb = \text{Yellow Lab}$
 $Eebb = \text{Brown Lab}$