BOOKLET 3: Sex Linked Traits

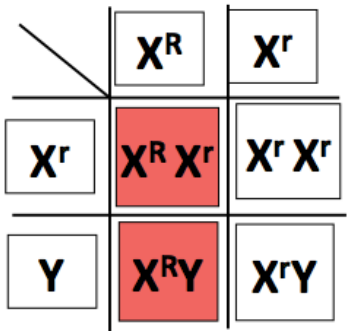
-girls have XX sex chromosomes
-boys have XY sex chromosomes where Y makes a boy, a boy(sex determination)
-typically sex link traits occur more in boys because they only have 1 X chromosome (what it says goes because the Y has no say on it, where on a female there is a second X chromosome which depending whether potential condition is dominant or recessive, can prevent a condition from apprearing
(eg) X^tX^t - 2 t's needed for colorblindness to appear on female
X^tY - only 1 t needed for condition to appear
X^tX – no condition will appear

Male sex linked traits
-males are either are affected or are not affected
-cannot be carriers like females can
-dad always give Y chromosome to sons

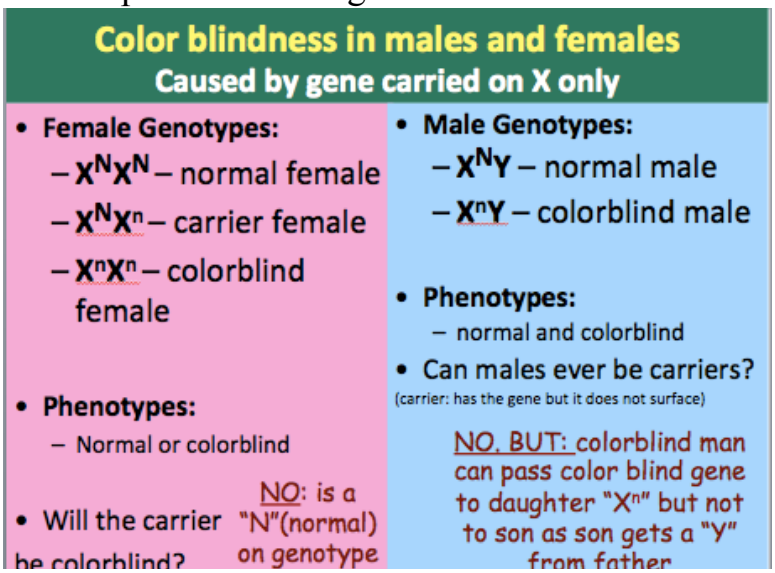
Female sex linked traits
-can have dominant and recessive interactions (X^tX^t or X^TX^t)
- can be carriers (have the trait but does not show itself till passed down)
get one X from mom and one from dad (he has only 1 to give)

How to do a X linked punnett

(eg) Red eyed female crossed with white eyed male



A good example of x linked gene



Sex limited Gene – both males and females have but only expressed in 1 sex
Sex Influenced Gene- has more effect on one sex than other (eg) baldness gene influenced by testosterone amount…so men get it more often

Gene Linkage…

What are linked genes? How are they inherited?
They will not separate except if_____happens?

If genes cross over, we can figure out the FREQUENCY that this happens. So, the frequency indicates the amount of crossing over. **(cross over frequency)**

This leads us into **gene mapping…**

What affects cross over frequency? Distance genes are from each other
Genes that are further apart..
-_____likely to cross over
-_____ likely to be inherited together
Genes that are closer together..
-_____likely to cross over
-_____ likely to be inherited together
Cross over frequency often expressed in % but how else?

Gene mapping-
When using crossover frequency to figure out how far apart genes are, what is the 1 RULE used to start the gene mapping process

Be sure you know how to make a gene map from data using % or map units