

Genetics

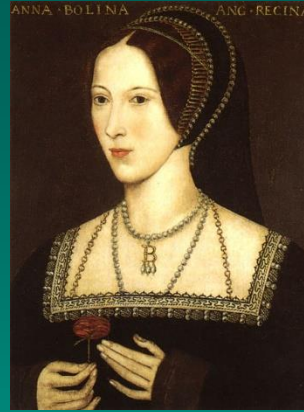
- Is the science of heredity.
- Heredity is the transmission of genetic and physical traits from parent to offspring.

Sex Determination

- Female can contribute only an X chromosome towards the sex of their offspring.
- Male can contribute an X or a Y chromosome toward the sex of their offspring.
- So, what is the genotype of a FEMALE?
MALE?

Medieval Days

- King Henry the 8th
- He killed some of his wives for not giving birth to a son.
- They didn't know back then that it was the man's gamete that determined the gender of the child.



Sex Linked Genes:

- There are genes that are only linked on the X chromosome, which means if you are a male you inherited it from your mom (your dad gave you a Y)! Females can get it from both since dad gives them an X
- Trait examples would be
 - Male Pattern Balding - Yep! From your mom!
 - Colorblindness

Sex-Linked

- Color blindness is a sex linked recessive trait carried on the X chromosome. Cross a colorblind male with a female carrier. What is the chance of a colorblind child?
- Make a key - let's do this together.

Sex-Linked

- Color blindness is a sex linked recessive trait carried on the X chromosome. Cross a colorblind male with a female carrier. What is the chance of a colorblind child?

• KEY:

Now work the square:

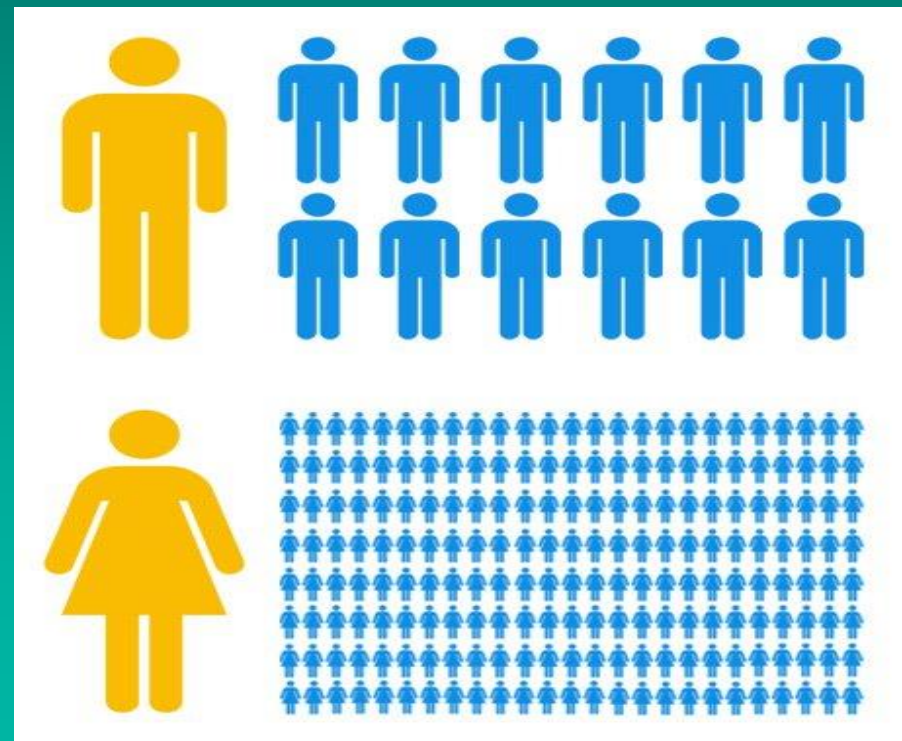
PC: _____ X _____

Chance of colorblind child? _____

Chance of colorblind daughter? _____

Colorblind Statistics:

- 1 out of 4 people have colorblindness to some degree.
- 1 out of 12 men are colorblind.
- 1 out of 100 women are colorblind.



Sex-Linked

- **Male patterned baldness is a recessive sex linked trait. Cross a female carrier with a Normal man. What is the chance their child will have male patterned baldness?**
- **Make a key - Your turn, do this on your own.**

Sex-Linked

- Male patterned baldness is a recessive sex linked trait. Cross a female carrier with a Normal man. What is the chance their child will have male patterned baldness?

• KEY:

Now work the square:

PC: _____ X _____

Chance of child with baldness? _____

Chance of daughter with baldness? _____

Chance of son with baldness? _____