

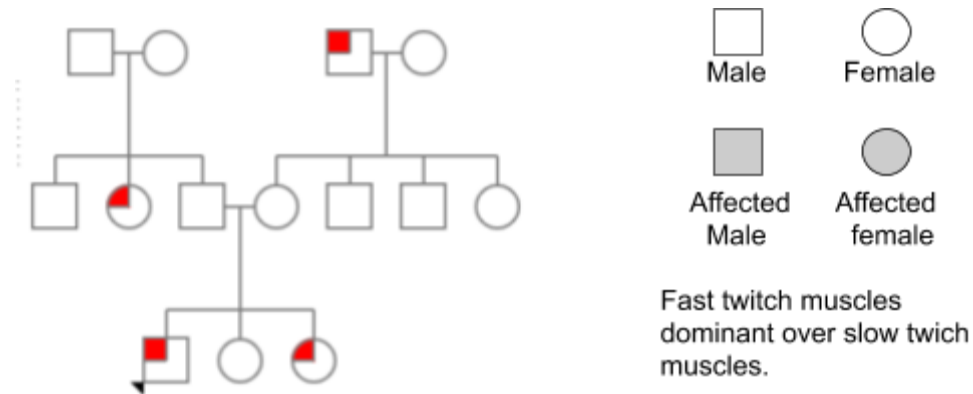
Create pedigrees at <https://pedigree.progenygenetics.com/>

Pedigree Activity

In genetics, traits can be traced over several generations similar to a family tree. This family tree is called a pedigree chart. Pedigree charts are useful in gathering background genetic information that can be used for medical reasons. When interpreting pedigree charts remember squares are male and circles are female.

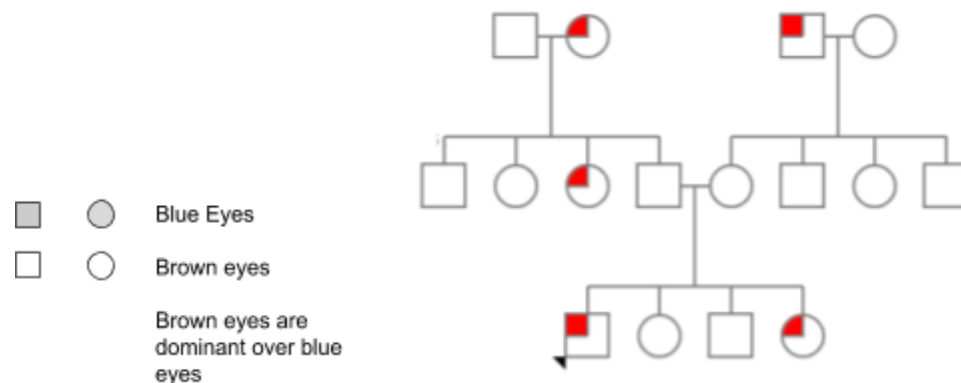
Horse race enthusiasts also rely heavily on pedigree charts to predict a horse's success.

1. Use the pedigree chart below to answer the following three questions. Muscle type is NOT a sex linked characteristic.



- Place the genotypes of each individual below their symbol.
- What is the genotype of individual #3 and #4?
- Can either individual #8 or #9 be homozygous?
- Explain the family relationship that #12 has with #2.

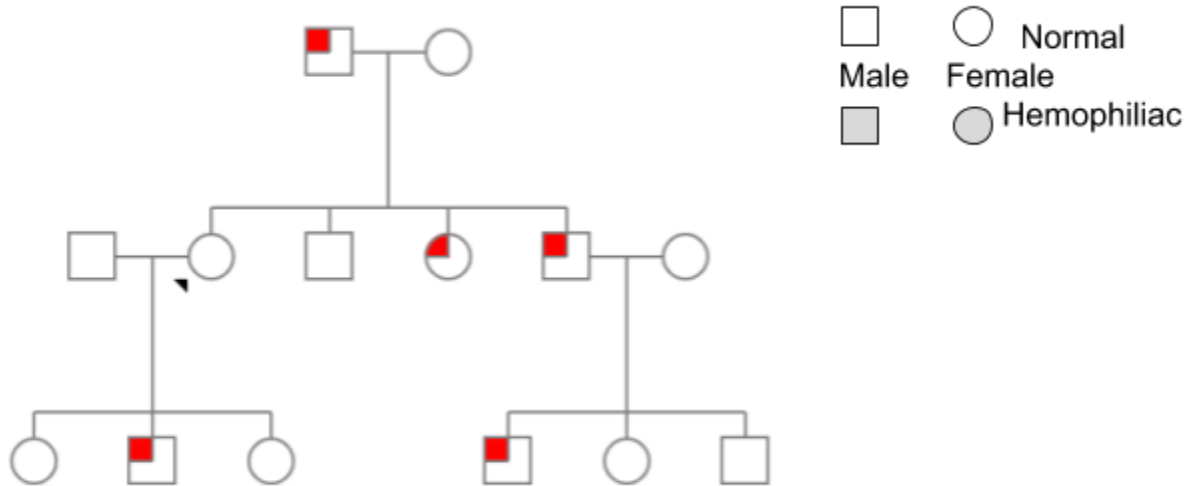
2. Label the genotype for each other the individuals below their symbol on the pedigree chart (NOTE: eye colour is NOT a sex-linked trait).



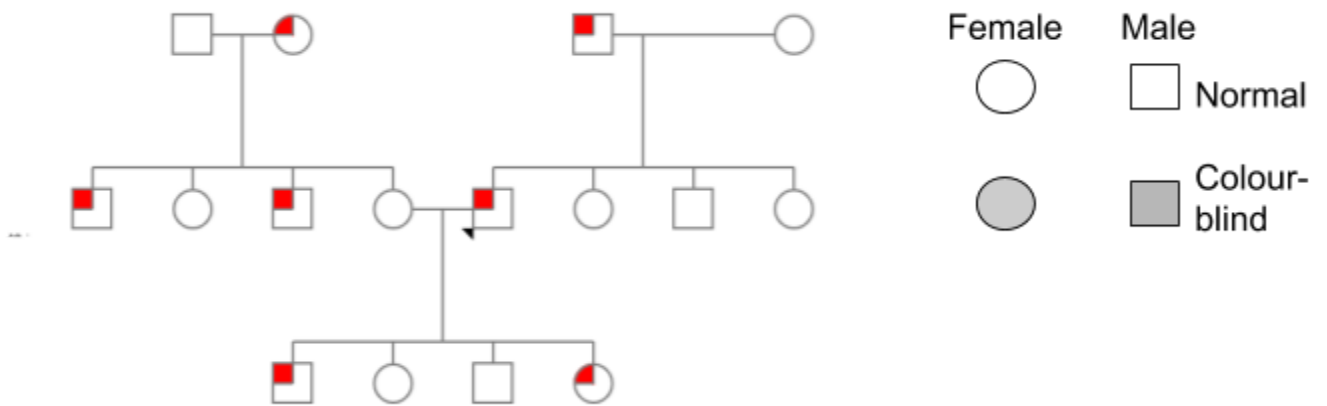
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Pedigree Activity

3. List the possible genotypes of the following hemophilia pedigree chart below. REMEMBER hemophilia IS a SEX LINKED TRAIT caused by a recessive allele, therefore you must denote the individuals sex chromosomes ($X^N X^n$ and $X^n Y$) as well as the hemophilia allele (n).



4. Examine the following pedigree chart of colour-blindness. In humans, colour blindness is caused by a RECESSIVE SEX LINKED allele. On the diagram, label the genotypes of the individuals 1-16.



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Pedigree Activity

5. Create a pedigree in which you follow a trait over at least three different generations. Decide on what kind of trait it is, the species this trait can be traced in, and if it's dominant or recessive, and sex linked? Write the genotypes and phenotypes for all individuals.