

## Extended Mendelian Genetics

### 7.1 Chromosomes and Phenotype

## Notes

Objectives:

- 
- 

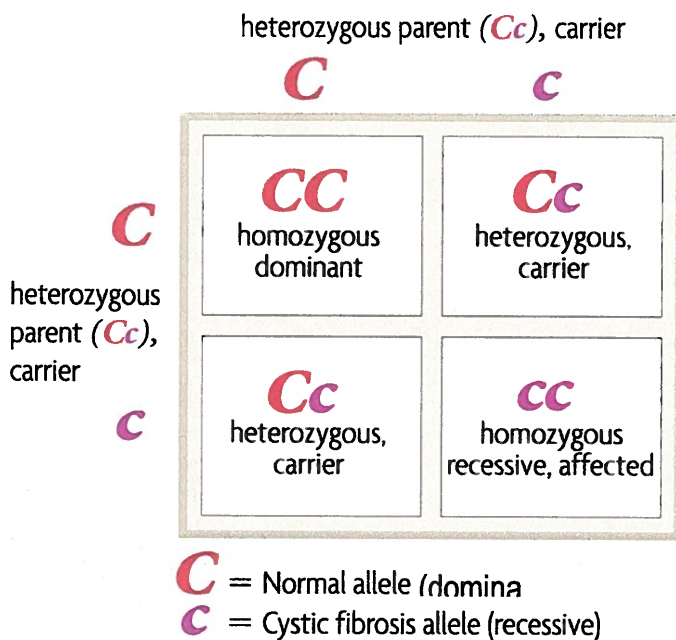
Key Concept:

The \_\_\_\_\_, on which genes are located, can affect the \_\_\_\_\_.

Vocabulary

- Carrier
- Sex-linked gene
- X chromosome inactivation

Autosomal Gene Traits



\_\_\_\_\_ copies of each gene affect \_\_\_\_\_.

- Mendel studied \_\_\_\_\_ gene traits, like \_\_\_\_\_
- Other examples of autosomal gene traits:
  - 
  - 
  -
- Mendel's \_\_\_\_\_ of \_\_\_\_\_ apply to \_\_\_\_\_ genetic disorders
  - A \_\_\_\_\_ for a recessive disorder is a \_\_\_\_\_
  - Disorders caused by \_\_\_\_\_ alleles are uncommon

**Why do you think Disorders caused by dominant alleles are uncommon?**

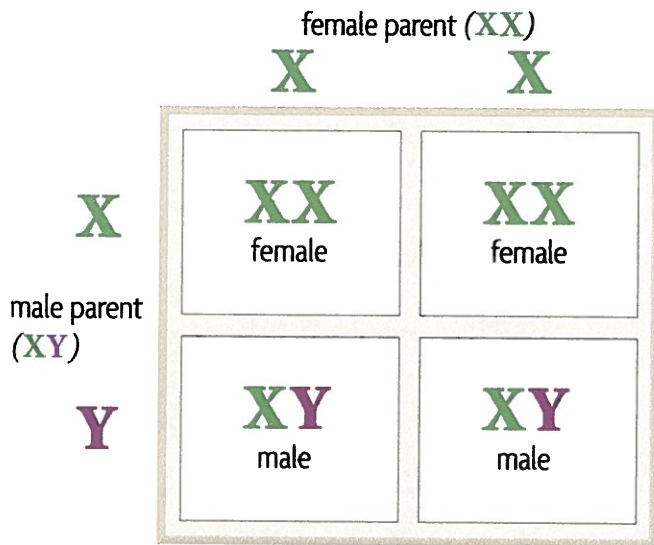
**Answer on your EXIT TICKET**

Males and females can differ in \_\_\_\_\_.

- Genes on \_\_\_\_\_ are called \_\_\_\_\_ genes
  - Y chromosome gene in mammals are responsible for \_\_\_\_\_ characteristics

Sex-linked Traits

## Sex-linked Traits continued



- X chromosomes genes in mammals affect \_\_\_\_\_ traits
- Male mammals have an \_\_\_\_\_ genotype
  - \_\_\_\_\_ of a male's sex-linked genes are \_\_\_\_\_
  - Males have \_\_\_\_\_ copies of sex-linked genes.
- Female mammals have an \_\_\_\_\_ genotype
  - Expression of sex-linked genes is similar to \_\_\_\_\_ genes in females
  - X chromosome \_\_\_\_\_ randomly "\_\_\_\_\_ " one X chromosomes.

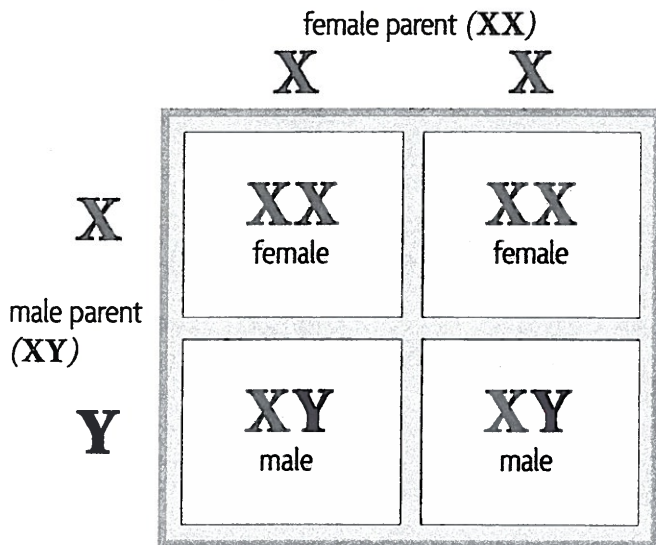
**Why do you think male Calico cats are rarely found?**

**Answer on your EXIT TICKET**

## Autosomal vs Sex-linked Disorders

Autosomal	Sex-Linked (X-linked)
<ul style="list-style-type: none"> <li>• Huntingtons Disease</li> <li>• Von Willerbrand disease</li> <li>• Cystic Fibrosis</li> <li>• Sickle cell anemia</li> </ul> <p>A Heterozygous for a recessive disorders is a carriers of that Autosomal Disorders.</p>	<ul style="list-style-type: none"> <li>• Red-Green color blindness</li> <li>• Hemophilia</li> <li>• Male pattern baldness</li> </ul> <p>Females will be carriers of X-linked disorders.</p> <p>Males will always express the X-linked disorder.</p>

## Sex-linked Traits continued



- X chromosomes genes in mammals affect \_\_\_\_\_ traits
- Male mammals have an \_\_\_\_\_ genotype
  - \_\_\_\_\_ of a male's sex-linked genes are \_\_\_\_\_
  - Males have \_\_\_\_\_ copies of sex-linked genes.
- Female mammals have an \_\_\_\_\_ genotype
  - Expression of sex-linked genes is similar to \_\_\_\_\_ genes in females
  - X chromosome \_\_\_\_\_ randomly "\_\_\_\_\_ " one X chromosomes.

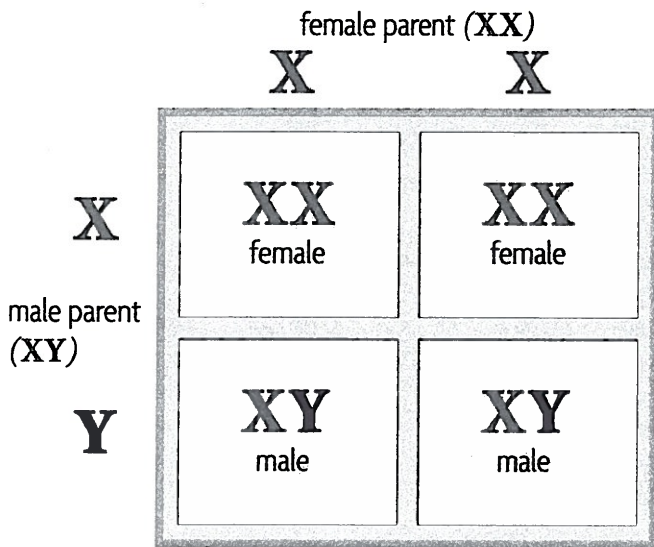
**Why do you think male Calico cats are rarely found?**

Answer on your EXIT TICKET

## Autosomal vs Sex-linked Disorders

Autosomal	Sex-Linked (X-linked)
<ul style="list-style-type: none"> <li>• Cystic Fibrosis</li> <li>• Sickle Cell Anemia</li> <li>• Huntingtons Disease</li> <li>• Von Willerbrand Disease</li> </ul>	<ul style="list-style-type: none"> <li>• Red-Green blindness</li> <li>• Hemophilia</li> <li>• Male pattern baldness</li> </ul>

## Sex-linked Traits continued



- X chromosomes genes in mammals affect \_\_\_\_\_ traits
- Male mammals have an \_\_\_\_\_ genotype
  - \_\_\_\_\_ of a male's sex-linked genes are \_\_\_\_\_
  - Males have \_\_\_\_\_ copies of sex-linked genes.
- Female mammals have an \_\_\_\_\_ genotype
  - Expression of sex-linked genes is similar to \_\_\_\_\_ genes in females
  - X chromosome \_\_\_\_\_ randomly "\_\_\_\_\_ " one X chromosomes.

**Why do you think male Calico cats are rarely found?**

**Answer on your EXIT TICKET**

## Autosomal vs Sex-linked Disorders

Autosomal	Sex-Linked (X-linked)
<p>Have student look up disorders for me + 5 extra</p>	<ul style="list-style-type: none"> <li>• Red- Green blindness</li> <li>• Hemophilia</li> <li>• Male pattern baldness</li> </ul>