

Name: Key Hour: _____

Genetics Test Review

1. In humans, brown eyes are dominant over blue eyes. Draw a Punnett square that shows the cross between a heterozygous woman and a homozygous recessive man.

	B	b
b	Bb	bb
b	Bb	bb

- a. What percentage of their children will have brown eyes? 50%
- b. What is the ratio of dominant to recessive for the offspring? 2:2
- c. What are the alleles of the two parents?
 mom - B, b (Brown)
 dad - b, b (blue)

2. In cats, long fur is dominant over short fur. Draw a Punnett square that shows the cross between a hybrid female and a purebred dominant male.

	F	f
F	FF	Ff
F	FF	Ff

- a. What percentage of their offspring will have short fur? 0%
- b. What is the ratio of short fur to long fur in the offspring? 0:4
- c. What are the alleles of the two parents?
 mom - F, f (long)
 dad - F, F (long)

3. In dogs, a long tail is dominant over a short tail. Draw a Punnett square that shows the cross between a short tailed parent and a homozygous dominant parent.

	l	l
L	Ll	Ll
L	Ll	Ll

- a. What percentage of their offspring will have short tails? 0%
- b. What percentage of their offspring will be heterozygous? 100%
- c. What are the alleles of the two parents?

Parent 1 ~ l, l (short)
 Parent 2 ~ L, L (long)

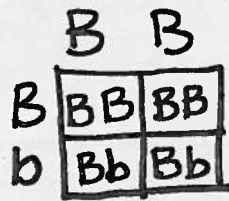
4. A pet store's customers prefer pet mice with black fur over mice with white fur. With this in mind, the owner crossed a female with black fur and a male with black fur. When the mice were born, she was surprised that three of the ten offspring had white fur. She did not know that the parents were heterozygous for fur color.

a. Which letters represent the alleles of the female parent?
 a. BB **b. Bb** c. B d. bb

b. Which letters represent the alleles of the male parent?
 a. BB **b. Bb** c. B d. bb

c. How could the pet store owner breed a litter of only white mice?
 a. by making sure that either the mother or the father has white fur
b. by making sure that both the mother and the father have white fur
 c. by making sure that at least one of the grandparents has white fur
 d. she could not breed a litter of only white mice

d. If the pet storeowner were to cross one homozygous black mouse with a heterozygous black mouse, what percentage of the mice would you expect to have white fur?
a. 0% b. 25% c. 50% d. 75%



5. Give the name of a genetic disorder and two facts about the disorder.

See notes from presentations!

6. Who is the Father of Genetics and what did he study?
 Gregor Mendel - pea plants

Key Words

Match the Key Word to the correct definition

- 10. Characteristics
- 11. Genes
- 12. Genetics
- 13. Hereditary
- 14. Inherited
- 15. Trait

B
~~D~~
~~E~~
~~F~~
A
~~C~~

- ~~A.~~ Genes you get from your parents.
- ~~B.~~ Features of your body.
- ~~C.~~ Describes your characteristics.
- ~~D.~~ The DNA that decides what you look like.
- ~~E.~~ The study of genes.
- ~~F.~~ The study of inherited traits.

Fill in the definition for each key word

Asexual reproduction – Mitosis: what type of organisms reproduce asexually? *single-celled organisms*

Sexual Reproduction – Meiosis: what type of organisms reproduce sexually? *multi-celled organisms.*

Mutation – *Sudden change in a characteristic caused by a change in a gene or chromosome.*

Dominant –

A gene that is a visible trait & masks a recessive trait.

Recessive –

A gene that is not a visible trait & only shows up when there are two recessive traits.

Homozygous –

Made up of like gene combinations. Ex: HH or hh

Heterozygous –

Made up of unlike gene combinations Ex: Hh

Carrier-

an organism that has inherited a genetic trait or mutation, but displays (shows) NO SYMPTOMS.

If I gave you a list of numbers, how do you figure out the ratio of the numbers? For example, if I give you a list of blue tail numbers and a list of orange tail numbers. What would you do to calculate the ratio of blue to orange?

There are a lot of punnett square information and chart reading on this test, be prepared!

* You should also study Activities. Review Warm up questions, key words, stop to think questions, and experiment notes. Start studying now, don't wait until the last minute!