

Name _____

Date _____ Block _____

Genetics "Golden Ticket" Scavenger Hunt

Directions: Complete the following *Scavenger Hunt* by placing a **check mark** in each box as you complete each step. Utilize the Genetics "Golden Ticket" to guide you through your hunt. You will need a highlighter, *pen/pencil*, and **colored pencils**. Make sure to answer all questions **thoroughly**, and follow the directions **carefully**.

- 1) Why is having a "Golden Ticket" for this Unit Important? How will you use it?

- 2) Highlight ALL **bold** words.

- 3) Find the "Gregor Mendel" Section and answer the following questions:

a. What types of plants did Mendel work with?

b. Explain "true-breeding".

c. How are hybrids created?

d. Give some examples of heritable traits in plants?

- 4) Find "Mendel's Law of Segregation" and answer the following questions:

a. List the patterns of inheritance

i. _____

v. _____

ii. _____

vi. _____

iii. _____

vii. _____

iv. _____

- b. Color the dominant flowers **Purple**.

- c. How are dominant traits represented? Give an example.

- d. How are recessive traits represented? Give an example.

- e. Who is the F2 generation?

- f. Describe the Law of Segregation

- g. Egg and sperm combine to create a fertilized egg called a _____
- h. What is a gene? _____
- i. True-breeding plants are homozygous. What does "homo" mean?

- j. Give two examples of homozygous combinations.
i. _____
ii. _____
- k. Hybrids are heterozygous. What does "hetero" mean? _____
- l. Give an example of a heterozygous combination. _____
- m. Create a mnemonic (memory trick using words that sound the same) to remember the meaning of:
iii. Phenotype _____
iv. Genotype _____
- 5) Find the "*Pedigree: family tree*" Section and answer the following question.
a. What are autosomes? _____
b. For the pedigree on the right, color in all affected females **orange**.
c. Outline all unaffected females **orange**.
d. For the pedigree on the right, color in all affected males **yellow**.
e. Outline all unaffected males **yellow**.
- 6) Find the "Autosomal Recessive" traits. Answer the following questions.
a. How is it possible for affected children to have unaffected parents?

b. Give an example of a familiar Autosomal recessive disorder.

- 7) Find the "Autosomal Dominant" traits. Answer the following questions:
a. What type of parents do shaded children have? _____

b. Complete the following punnett square for two heterozygous (Hh x Hh) parents:

c. Give an example of an Autosomal Dominant trait. _____

8) Flip over the paper and find the "*Incomplete Dominance and Codominance*" Section and answer the following questions:

a. What does incomplete dominance mean? _____

b. Give an example of phenotypes showing incomplete dominance. _____

c. Color all the red snapdragon flowers **red**.

d. Color all the pink snapdragon flowers **pink**.

e. Describe the Codominant pattern of inheritance.

f. What is the genotype of a roan cow? _____

g. What does ROAN look like? _____

9) Find the "*Blood Types*" Section and answer the following questions:

a. What type of inheritance do blood types show?

b. List all possible human blood types:

i. _____

ii. _____

iii. _____

iv. _____

c. In the punnett square, color all A blood types **Yellow**

d. Color all AB blood types **orange**.

e. Color all B blood types **red**.

f. Two Genotypes for A type blood:

i. _____

ii. _____

g. Two Genotypes for B type Blood:

i. _____

ii. _____

h. If a person has type AB blood, what type of blood did each of their parents have?

10) Find the "Multiple Allele Traits" section and answer the following questions:

a. What are multiple alleles? _____

b. What familiar trait shows multiple alleles? _____

c. If four different alleles exist in a population, how many could an one individual have? _____

11) Find the "Polygenic Trait" and answer the following questions:

a. How are Polygenic traits different from Multiple alleles?

b. Give examples of familiar polygenic traits

i. _____

ii. _____

iii. _____

12) Find the "Sex-Linked Traits" section and answer the following question:

a. What sex chromosomes do females have? _____

b. What sex chromosomes do males have? _____

c. Write the genotype for a heterozygous female. _____

d. Can males be heterozygous? _____

e. Give a familiar trait that follows a Sex-linked pattern of inheritance.

f. Outline the squares that contain females **green**.

g. Outline the squares that contain males **blue**.

Great Work! You have completed the **Genetics "Golden Ticket" Scavenger Hunt!**

You are now the Master of Genetics!!!