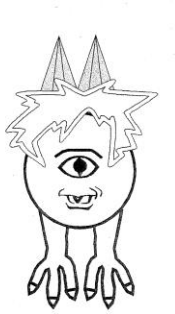
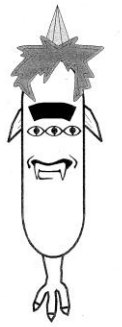


Zork Genetics



Characteristic	Dominate Gene	Recessive Gene
Height	Tall (T)	Short (t)
Eye Number	One (E)	Three (e)
Lip Color	Purple (L)	Green (l)
Fang Number	One (F)	Two (f)

USE YOUR KNOWLEDGE OF GENETICS TO COMPLETE THIS WORKSHEET.

1. Use the information for a Zork's traits to write the **phenotype** (physical appearance) for each item.

a) TT _____ c) ee _____

b) lL _____ d) Ee _____

2. Use the information in the chart to write the **genotype(s)** for each trait below.

a) One eye _____ c) Two Fangs _____

b) Short _____ d) Purple Lips _____

3. Determine the **genotypes** for each using the information in the chart.

a) Heterozygous purple lips _____ c) Homozygous one eye _____

b) Hybrid one fang _____ d) Purebred tall _____

4. A tall Zork named George met and fell in love with a tall Zork named Marge. Use your knowledge of genetics to answer the questions below.

   a. If Marge's father is a heterozygous tall Zork and her mother is a short Zork, what is Marge's genotype? Complete the Punnett square to show the possible genotypes that would result to help you determine Marge's genotype.

   What is Marge's genotype? _____

   b. George is heterozygous for this height. What is his genotype? _____

   c. Complete the Punnett square to show the possibilities that would result if George and Marge had offspring.

   d. List the possible **genotypes** and **phenotypes** for the kids.

   e. What is the probability of tall Zork kids? _____%

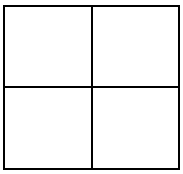
   f. What is the probability of short Zork kids? _____%

5. George's aunt and uncle, Zit and Zilla have the most beautiful set of purple lips on the planet. Zilla is believed to be heterozygous for her lip color. Zit's family brags that their blood line is pure. Complete the Punnett square to show the possibilities that would results if Zit and Zilla have offspring.

    a. Give the genotype of each zork. Zit _____ Zilla _____

    b. Complete the Punnett square to show the possibilities that would result if they had children.

    c. List the possible genotypes and phenotypes for the Zork babies.

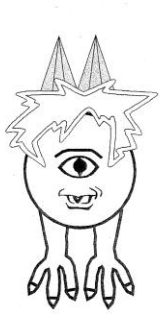


    d. What is the probability that the kids will have purple lips? _____%

    e. What is the probability that the kids will have green lips? _____%

6. Commander Shlob is famous for his three eyes. He recently found a good looking female Zork who also has three eyes. In order to a Zork to be a commander it must have three eyes. Would it be possible for them to have a Zork baby with only one eye? Why or why not? Create a Punnett square to help you answer this question.

7. Zorks with two fangs make more money than Zorks with one fang. Commander Shlob (from question 6) is heterozygous for one fang, but wants to have a Zork baby with two fangs. Is it possible for him to have a Zork baby with two fangs? What type of female Zork would he need to marry in order to give him the best chance at having an offspring with two fangs? Create a Punnett square to help you answer this question.



Zork Genetics Answer Key

Characteristic	Dominate Gene	Recessive Gene
Height	Tall (T)	Short (t)
Eye Number	One (E)	Three (e)
Lip Color	Purple (L)	Green (l)
Fang Number	One (F)	Two (f)

USE YOUR KNOWLEDGE OF GENETICS TO COMPLETE THIS WORKSHEET.

8. Use the information for a Zork's traits to write the **phenotype** (physical appearance) for each item.

a) TT Tall

b) lL Purple Lips

c) ee Three Eyes

d) Ee One Eye

9. Use the information in the chart to write the **genotype(s)** for each trait below.

a) One eye EE or Ee or eE

b) Short tt

c) Two Fangs ff

d) Purple Lips LL or Ll or lL

10. Determine the **genotypes** for each using the information in the chart.

a) Heterozygous purple lips Ll or lL

b) Hybrid one fang Ff or fF

c) Homozygous one eye EE

d) Purebred tall LL

11. A tall Zork named George met and fell in love with a tall Zork named Marge. Use your knowledge of genetics to answer the questions below.

a. If Marge's father is a heterozygous tall Zork and her mother is a short Zork, what is Marge's genotype? Complete the Punnett square to show the possible genotypes that would result to help you determine Marge's genotype.

What is Marge's genotype? Tt or tT

	T	t
t	Tt	tt
t	Tt	tt

b. George is heterozygous for this height. What is his genotype? Tt or tT

c. Complete the Punnett square to show the possibilities that would result if George and Marge had offspring.

	T	t
T	TT	Tt
t	Tt	tt

d. List the possible **genotypes** and **phenotypes** for the kids.

TT= Tall, tt = short, Tt= Tall

e. What is the probability of tall Zork kids? 75%

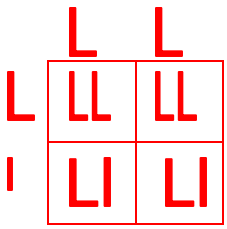
f. What is the probability of short Zork kids? 25%

12. George's aunt and uncle, Zit and Zilla have the most beautiful set of purple lips on the planet. Zilla is believed to be heterozygous for her lip color. Zit's family brags that their blood line is pure. Complete the Punnett square to show the possibilities that would results if Zit and Zilla have offspring.

    a. Give the genotype of each zork. Zit LL Zilla Ll

    b. Complete the Punnett square to show the possibilities that would result if they had children.

    c. List the possible genotypes and phenotypes for the Zork babies.
    LL = Purple Lips
    Ll or lL = Purple Lips

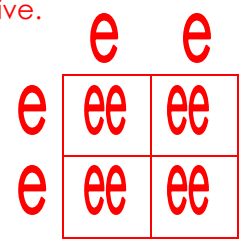


    d. What is the probability that the kids will have purple lips? 100%

    e. What is the probability that the kids will have green lips? 0%

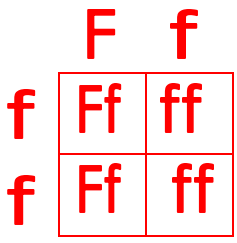
13. Commander Shlob is famous for his three eyes. He recently found a good looking female Zork who also has three eyes. In order to a Zork to be a commander it must have three eyes. Would it be possible for them to have a Zork baby with only one eye? Why or why not? Create a Punnett square to help you answer this question.

It is not possible for them to have a Zork baby with only one eye. There is a 100% chance of passing on the recessive trait since both parents are recessive.



14. Zorks with two fangs make more money than Zorks with one fang. Commander Shlob (from question 6) is heterozygous for one fang, but wants to have a Zork baby with two fangs. Is it possible for him to have a Zork baby with two fangs? What type of female Zork would he need to marry in order to give him the best chance at having an offspring with two fangs? Create a Punnett square to help you answer this question.

Commander Shlob should marry a female who has the recessive trait of two fangs for the best chance.



Name: _____ Date: _____ Period: _____

Heredity Practice #1

On planet A273 Quiddlers are a popular type of pet bird. Use the information provided and your knowledge of heredity to complete the practice problems below.

1. Write the correct **genotype(s)** for each pet bird. G represents green, and g represents blue.

   Green- _____ Blue- _____

2. What would happen if a heterozygous green Quiddler and a blue Quiddler mated? Complete the Punnett square to determine the chances of each bird color.

   a. What is the probability the bird offspring would be green?

   _____ %

   b. What is the probability the bird offspring would be blue?

   _____%

Name: _____ Date: _____ Period: _____

Heredity Practice #1

On planet A273 Quiddlers are a popular type of pet bird. Use the information provided and your knowledge of heredity to complete the practice problems below.

1. Write the correct **genotype(s)** for each pet bird. G represents green, and g represents blue.

   Green- _____ Blue- _____

2. What would happen if a heterozygous green Quiddler and a blue Quiddler mated? Complete the Punnett square to determine the chances of each bird color.

   a. What is the probability the bird offspring would be green?

   _____ %

   b. What is the probability the bird offspring would be blue?

   _____%

Heredity Practice #1
Answer Key

On planet A273 Quiddlers are a popular type of pet bird. Use the information provided and your knowledge of heredity to complete the practice problems below.

1. Write the correct **genotype(s)** for each pet bird. G represents green, and g represents blue.

Green- GG, Gg, gG____ Blue- gg_____

2. What would happen if a heterozygous green Quiddler and a blue Quiddler mated? Complete the Punnett square to determine the chances of each bird color.

	G	g
g	Gg	gg
g	Gg	gg

c. What is the probability the bird offspring would be green? 50%

d. What is the probability the bird offspring would be blue? 50%