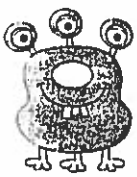
Name _____ Period _____

MONSTER MASH-UP



Have you ever wondered why some offspring resemble their parents, and other do not? In this activity we will learn how offspring may have traits that are different from their parents. We will create a family of "monsters" to explore how traits are passed on. To complete this activity, you will need to...

- Create your own unique monster with 13 different traits.
- Cross your monster with another monster to produce four monsterlings.
- Determine what traits your monsterlings have based on the genes they received from the parent monsters.

1. CREATE YOUR PARENT MONSTER.

You will have the opportunity to create your own monster. For each trait, choose one of the options. Make sure you pick a combination of dominant and recessive traits. Write down the trait you chose under the phenotype column. Then write down the possible genotypes for the trait you chose. Remember, for any dominant trait, there will be 2 possible genotypes. Finally, it's time to draw your monster. Make sure to follow the traits you chose. Do not add any extra traits onto your monster.

2. DETERMINE THE TRAITS YOUR 4 MONSTERLINGS WILL HAVE.

- We will use a coin flip to determine which gene for each trait your parent monsters will pass on to their monsterlings. Record these on the charts found on the following pages.
- Determine which parent monster will be the "mom" and which will be the "dad" and record this on your parent monster.
- Look at the genotype for the mom monsters body shape. If you chose a square shape, your genotype is **bb**. The only gene you can pass on is **b** so you can write this in the correct box for offspring one. If you chose a circular body, your genotype is **Bb**. You must flip a coin to determine which gene you will pass on. Heads will stand for the dominant gene and tails will stand for the recessive allele. If you flipped a heads, write **B** in the correct box, if your flipped tails write in **b**. Repeat this process for the dad monster.
- Follow these steps for the remaining traits for offspring one. Then repeat the entire process for offspring 2, 3 and 4.

OFFSPRING #1

TRAIT	GENE FROM "MOM"	GENE FROM "DAD"	PHENO-TYPE
Body Shape			
# of Eyes			
Eye Color			
Eyes on Stalks			
Antennae			
Teeth Shape			
Scar			
Red Spots			
Nose Shape			
Hair			
Color			
Tail			
# Legs			

OFFSPRING #2

TRAIT	GENE FROM "MOM"	GENE FROM "DAD"	PHENO-TYPE
Body Shape			
# of Eyes			
Eye Color			
Eyes on Stalks			
Antennae			
Teeth Shape			
Scar			
Red Spots			
Nose Shape			
Hair			
Color			
Tail			
# Legs			

OFFSPRING #3

TRAIT	GENE FROM "MOM"	GENE FROM "DAD"	PHENO-TYPE
Body Shape			
# of Eyes			
Eye Color			
Eyes on Stalks			
Antennae			
Teeth Shape			
Scar			
Red Spots			
Nose Shape			
Hair			
Color			
Tail			
# Legs			

OFFSPRING #4

TRAIT	GENE FROM "MOM"	GENE FROM "DAD"	PHENO-TYPE
Body Shape			
# of Eyes			
Eye Color			
Eyes on Stalks			
Antennae			
Teeth Shape			
Scar			
Red Spots			
Nose Shape			
Hair			
Color			
Tail			
# Legs			

3. CREATE YOUR BABY MONSTERS USING THE CHARTS YOU CREATED.

- Collect the four baby monster shapes that correspond to your charts above.
- Label the shapes MONSTERLING 1, MONSTERLING 2, MONSTERLING 3 and MONSTERLING 4 and draw them according to the charts above.

4. ANSWER THE FOLLOWING QUESTIONS - USE COMPLETE SENTENCES.

1. Did any of your monsterlings look EXACTLY like either parent?

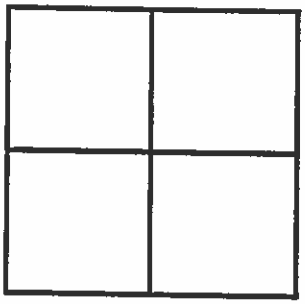
_____

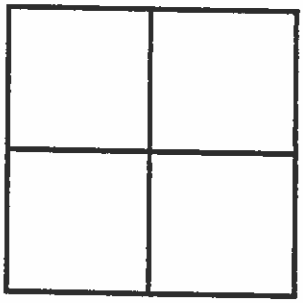
_____

2. Choose two of the traits that you flipped coins for and create a punnett square for each of these crosses.

Trait #1_____ Trait #2 _____

Parents genotypes _____ X _____ Parents genotypes _____ X _____





3. Did the results for your monsterlings match up with the punnett square for the trait #1? For example if your punnett square came out 25% for your trait, did only one of your babies show that trait? _____

_____

_____

4. Did the results for your monsterlings match up with the punnett square for the trait #2?

_____

_____

_____

5. Explain why the traits for your monsterlings did not need to match up exactly to your punnett squares. _____

_____

_____.

6. What trait would you expect to see more of in our paper monsterlings, BLUE eyes or RED eyes? Please explain why you chose your answer.

_____

_____

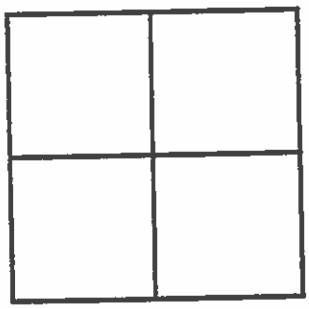
_____

7. Is it possible for two monsters without a scar to have a monsterling with a scar? Create a punnett square to help you answer this question. _____

_____

_____

_____



8. Is it possible for two square monsters to have a monsterling that is circular? Create a punnett square to help you answer this question. _____

_____

_____

_____