

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Genetics Summative Assessment 7<sup>th</sup> Grade

1. Demetrius looks very similar to his father. Did he receive more genetic information from his father than from his mother? Support your decision.

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- 2.a. Use the genes/alleles from the mother and father to determine a possible genetic make-up of one offspring. Fill in the blank chromosomes for the genetic make-up of one offspring.

Mother			Father			Offspring Genetic Make-up	
Chromosome 1			Chromosome 1			Chromosome 1	
A	a		A	a			
B	b		B	B			
D	d		D	d			
E	E		E	e			
F	F		F	f			
Chromosome 2			Chromosome 2			Chromosome 2	
X	X		X	Y			

- b. List a complete description of your offspring's phenotype in the table below.

Gene Key			
Allele	Allele	Dominant Trait	Recessive Trait
A	a	Straight antennae	Curly antennae
B	b	One body segment	Two body segments
D	d	Has dots	No dots
E	e	Square eyes	Round eyes
F	f	Webbed feet	Non-webbed feet

Offspring's Genotype	Offspring's Phenotype

3. A male and female human with 46 chromosomes each had 4 children (ages 1, 3, 6, and 12). Are any of their offspring identical? Explain your answer.

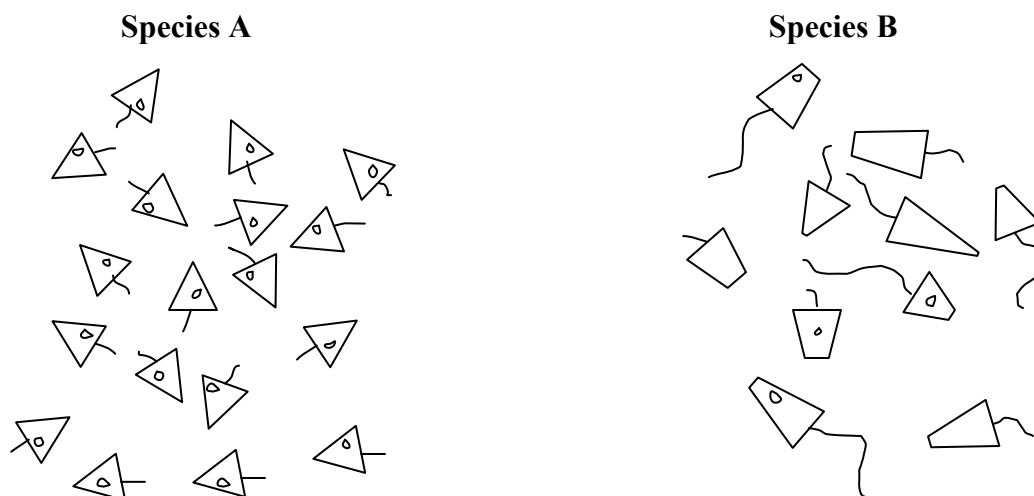
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4. The shapes below represent two different species: A and B. Both species live in the same small puddle and compete for the same food source.



- a. Which species, A or B, reproduces asexually? What observation(s) support your answer?

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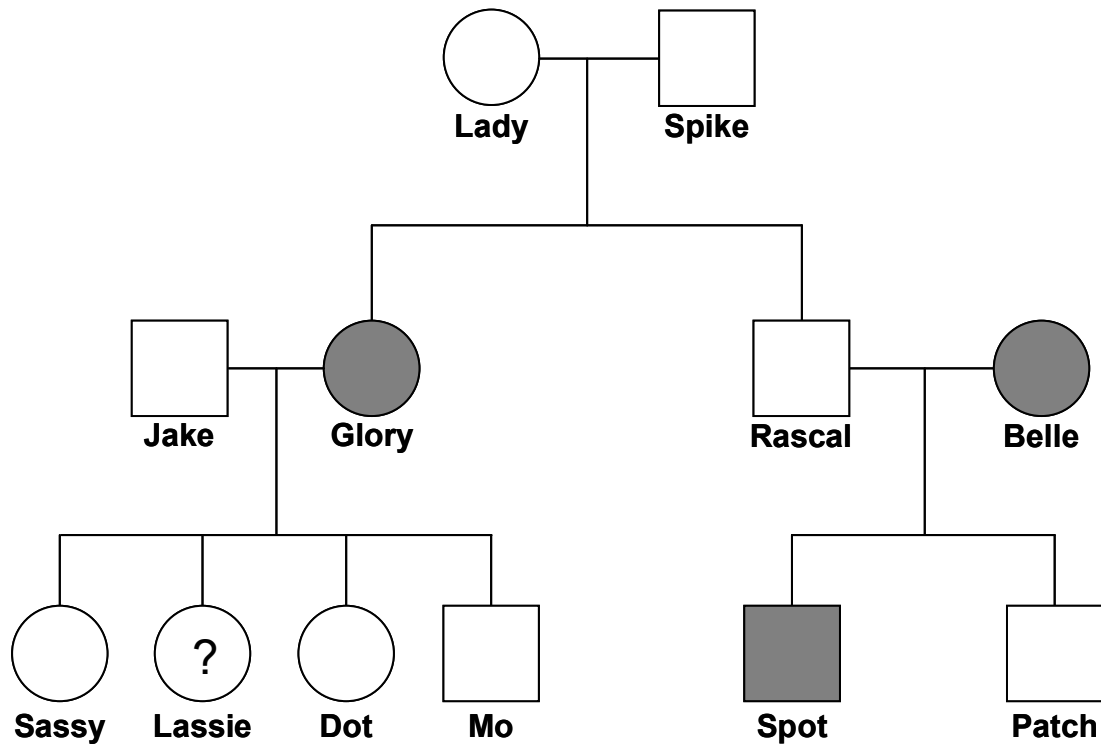
- b. The puddle floods and the food source washes away to another part of the puddle. Describe one advantage *EACH* species has in this environment to allow survival and reproduction for several generations?

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5. This pedigree shows a family of fictional organisms that have either plain or spotted noses. Glory, Belle, and Spot have spotted noses. Use this pedigree to answer the following questions.

- a. Are spotted noses the result of a dominant or recessive gene? Genetically, how do you know?

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- b. What are the genotypes of Lady and Spike? (Hint: You may want to use a Punnett Square).

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- c. If Jake's father has a spotted nose, what is the chance that Lassie has a spotted nose? Use a Punnett Square to help answer your question.

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- d. Rascal and Belle are expecting a third offspring. What is the chance that the offspring will be male? Support your answer.

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