SUCCESS ACADEMY EDUCATION INSTITUTE

Dragon Genetics Packet

Life Science (Lower Middle)
Unit 2

Dragon Genetics Packet
Adapted from Alabama Learning Exchange's "Dragon Genetics" activity

Directions:

1. Obtain two coins from your teacher. Mark one coin F for female and the other M for male. These two coins represent the parents who are heterozygous for each of the dragon traits.

2. Flip the coins for each parent one at a time. If the coin lands heads up, it represents the dominant allele. An uppercase letter represents the dominant allele. A coin that lands tails up represents the recessive allele. The lowercase letter represents the recessive allele. Record the results in the table circling the correct letter.

3. Fill in the column for genotype and phenotype.

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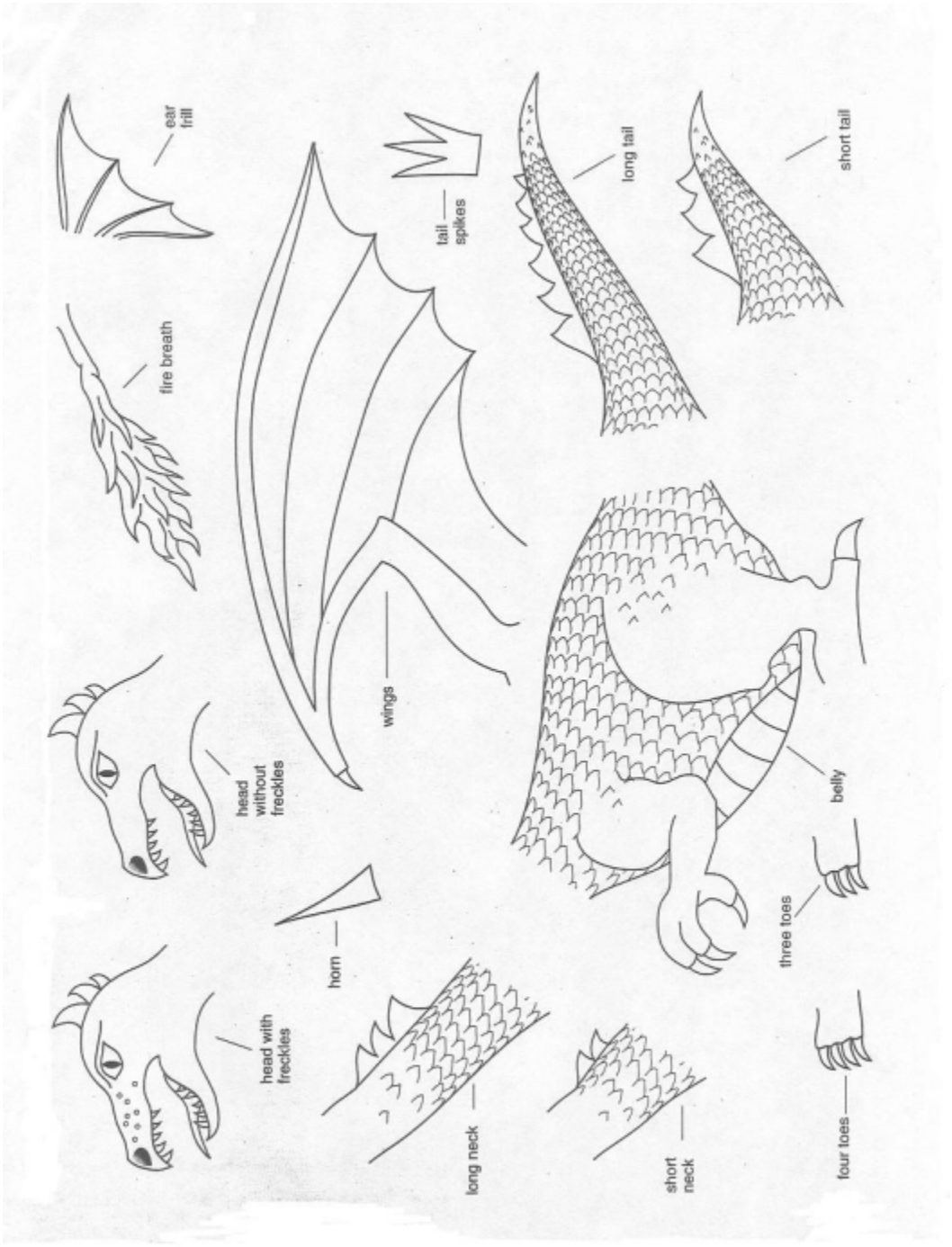
Trait	Female	Male	Genotype	Phenotype
N= Long neck n= Short neck	N or n	N or n		
G= Green body g= Gray body Gg= Green and gray colors are equally expressed	G or g	G or g		
S= Spikes on tails s= No spikes on tails	S or s	S or s		
T= Three toes t= Four toes	T or t	T or t		
B= Black tail spikes b= Red tail spikes	B or b	B or b		
E= Red eye e= White eye	E or e	E or e		
F= Fire breathing f= Not fire breathing	F or f	F or f		
L= Long tail l= Short tail	L or l	L or l		
R= Red wings r= Yellow wings Rr= Orange wings	R or r	R or r		
Y= Yellow belly y= White belly	Y or y	Y or y		
K= Freckles k= No freckles	K or k	K or k		
X= No ear frills Y= Ear fills	X	X or Y		

4. Create your dragon according to the traits inherited. Cut and color the appropriate traits and glue or tape your dragon together.



5. Give your dragon a name:

6. Compare your dragon to the ones created by your classmates (its siblings). Pick two other dragons and compare each of the traits. Indicate the phenotypes of each in the chart below.

Trait	My Dragon	Dragon By:	Dragon By:
Neck length			
Eye color			
Horn presence			
Spike presence			
Tail length			
Body color			
Wing color			
Number of toes			
Belly color			
Spike color			
Freckle presence			
Fire breathing			
Ear frills			

7. Which traits result in a simple dominant/recessive inheritance pattern? List the traits below and indicate which traits are dominant and which are recessive.

8. Which traits result in a blended inheritance pattern (a combination of the alleles are expressed in the phenotype)? List the traits below and indicate which genotypes result in a blended phenotype.

9. Which traits result in a multi-characteristic inheritance pattern (both of the alleles are expressed in the phenotype)? List the traits below and indicate which genotypes result in a multi-characteristic phenotype.

10. Which trait determines the sex of the dragon? Which parent determines the sex of the dragon? Why?