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# Dragon Genetics

*Use the table below to solve the following genetic problems.*

# Key to Dragon Trait alleles

## N = long neck R = red wings

n = short neck r = yellow wings

B = fire breathing H = horn

b = does not breathe fire h = no horn

T = spike at end of tail L = long tail

t = no spike at end of tail l = short tail

E = red eyes F = three claws

e = yellow eyes f = four claws

G = green body

g = gray body

1. What would be the phenotypic ratio if I crossed 2 dragons with short necks?

2. If I wanted to create dragons that can breathe fire (so that I can take over the world), what three combinations of parents would ensure I get fire-breathing offspring?

3. What would the genotypes of parents be if they were both green and their offspring was gray?

4. From the above cross, what is the chance that their offspring would be gray?

5. If we investigated the offspring of two dragons and found that 26 had green bodies and 24 had gray bodies, what were the genotypes of the parents? (Think…what cross would give me a 2:2 phenotypic ratio?)

6. If a homozygous dominant male dragon with a spike at the end of his tail is crossed with a female with no spike at the end of her tail, what would the genotypes of the offspring be?

7. What is the genotypic ratio and phenotypic ratio of a cross between two heterozygous red-eyed dragons?

8. A dragon has four claws and is crossed with a homozygous three-clawed dragon. What would their offspring look like?

9. Is it possible for two dragons with red wings to have a baby dragon with yellow wings? Explain why or why not.

10. What is the genotypic and phenotypic ratio of a cross between a homozygous dragon with a horn and a dragon without a horn?

11. After looking at a litter of young dragons, 75% of them can breathe fire. What are the genotypes of the parents?

12. If two dragons cannot breathe fire, what is the chance that their offspring can breathe fire?