

## Complex Traits

### 1) Incomplete dominance

Let's assume that dragons show incomplete dominance for fire breathing. The F allele provides lots of fire and the F' allele gives no fire. If a dragon that has very strong fire is crossed with a dragon that has moderate fire, what will their offspring be like? Under what conditions can a baby dragon be born that never has fire? Justify your answer with Punnett Squares.

### 2) Codominance

Let's say that the color of merpeople's tail is controlled by a codominant gene and the alleles are blue (B) and green (G). Show a cross between two merpeople who have bluish-green tails (BG). Give the offspring phenotypes with percentages.

### 3) Multiple alleles

The human blood cell surface protein has three alleles: A, B, and O. Could a person with B type blood and a person with A type blood ever have a baby with O type blood? Use Punnett squares to justify your answer.

### 4) Regulatory genes

If boggarts' ears are affected by a regulatory gene that silences (turns off) the expression of ears and if this silencing gene is dominant, what are possible genotypes of a baby boggart whose mom has ears but dad doesn't?