

## **MONOHYBRID PROBLEMS**

(Problems dealing with one trait only ie. height or colour)

(1) Write the cross (2) Produce the gametes (3) Draw the Punnett square (4) List the phenotype and genotype ratios

1. In dinosaurs, the "factor" (as Mendel called it) or gene (S) for sharp teeth is dominant over the "factor" or gene (s) for dull teeth. Cross a heterozygous sharp toothed dinosaur with a dull-toothed dinosaur to produce the F1 (first generation) offspring.
2. Cross a homozygous sharp toothed dinosaur with a homozygous dull-toothed dinosaur to produce the F1 offspring.
3. Now cross two of the F1 generation offspring from question #2 to produce the F2 offspring.
4. In pigeons, long feathers are due to a dominant gene (F) and short feathers to the recessive gene (f). Cross a homozygous long feathered pigeon with a short feathered pigeon.
5. Repeat problem #4 if both parents are heterozygous. What percent of the offspring are long feathered?
6. In aliens, green skin is dominant over purple skin. A homozygous green-skinned alien mates with a purple-skinned alien. Choose a letter to represent the genes and solve for the F1 offspring.
7. In a batch of tarantula spiderlings, 3/4 of the spiderlings have black fangs whereas only 1/4 have brown fangs. If fang colour is genetically inherited, determine:
  - a) the genotype for black fang tarantulas and the genotype for brown fang tarantulas
  - b) the genotypes for each parent