

Punnett Squares

Objective: _____

Research:

Punnett square: _____

allele: _____

homozygous (purebred): _____

heterozygous (hybrid): _____

Example: In flowers, the color red is dominant to the color yellow. A purebred red flower is crossed with a yellow flower. What are the genotypes and phenotypes of the offspring and in what ratios?

Steps to working out crosses:

1. Assign the traits a letter.

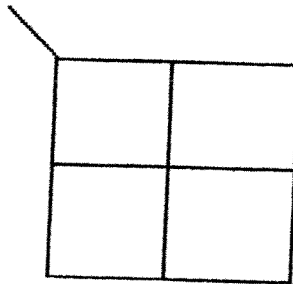
____ = dominant = _____
____ = recessive = _____

2. Determine the parental genotypes.
_____ and _____

3. Possible reproductive cells:



4. Punnett square:

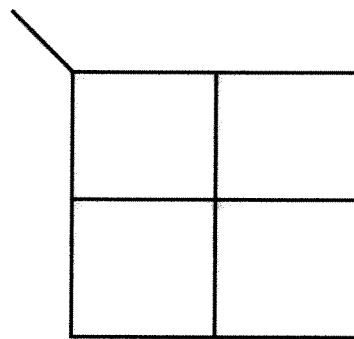
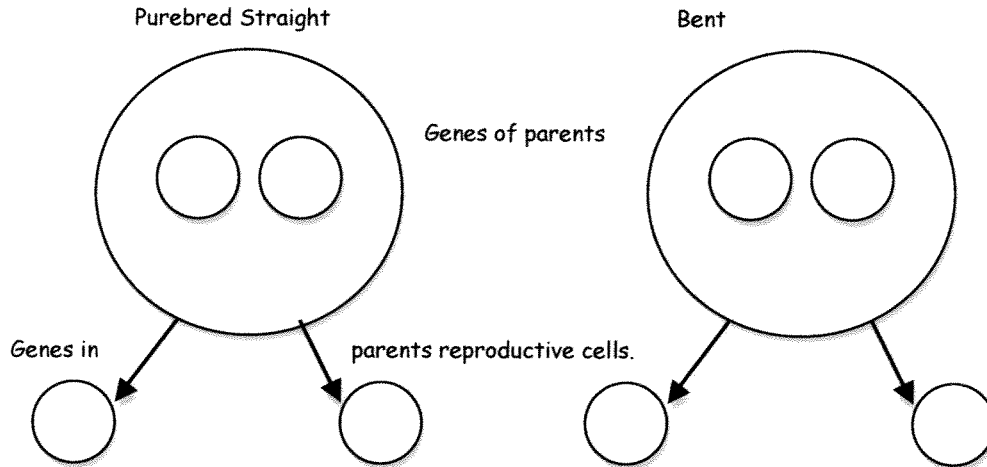


genotypes: RR : Rr : rr
_____ : _____ : _____

phenotypes: red : yellow
_____ : _____

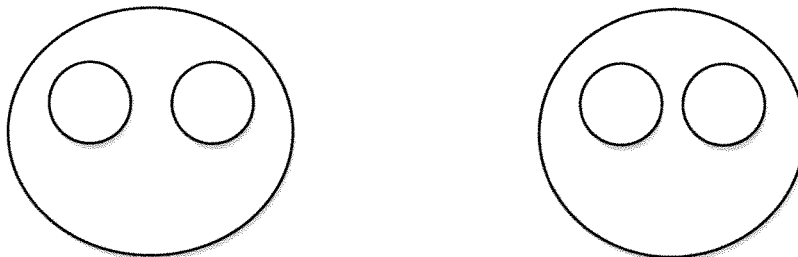
Practice Problems for Punnett Squares:

1. In chimpanzees, straight fingers (S) are dominant to bent fingers (s). Complete the following to determine what the cross between a chimpanzee who is a purebred for straight fingers with a chimpanzee who has bent fingers.



- What are the genotypes of the offspring? _____
- What are the phenotypes of the offspring? _____
- What is the genotype ratio? SS : Ss: ss
_____ : _____ : _____
- What is the phenotype ratio? Straight: Bent
_____ : _____

2. Now cross two chimpanzees who are hybrids for straight fingers. Complete all the steps to answer the following questions:



- How many of _____ the offspring from the _____ above two parents will have straight fingers? _____ How many will have bent fingers? _____
- What are the genotypes of the offspring? _____, _____, _____, _____ What is the genotype ratio?
_____ : _____ : _____
SS Ss ss