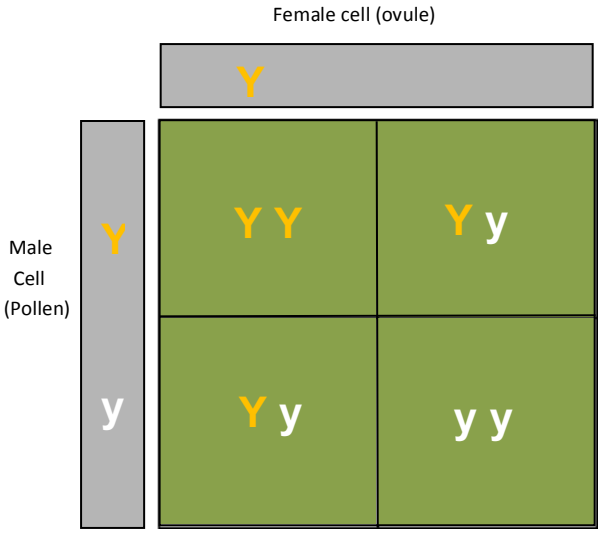
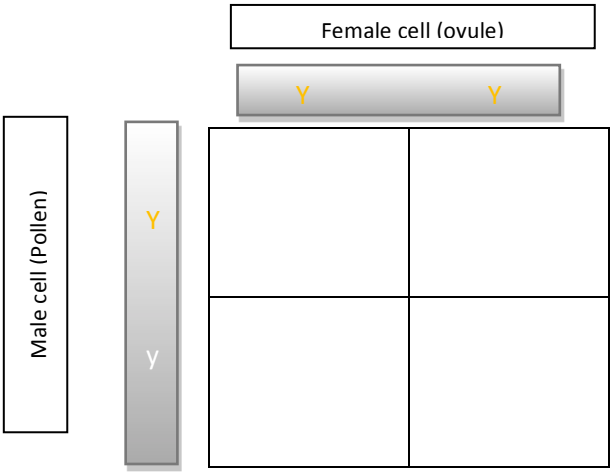
Probability and Genetics

A Punnett square is a tool that links the laws of probability with the science of genetics. Scientists use Punnett squares to show all of the possible outcomes of a genetic cross. The Punnett square below shows yellow and white corn seed color alleles from two plants. Both genotypes have one dominant (upper case Y)and one recessive allele (lower case **y**).



This cross has a 75% probability (3 out of 4 chances) that the offspring will produce corn ears with yellow kernels. Thus, only a 25% probability (1 out of 4 chance) exists for the offspring to produce corn ears with white kernels.



Above, fill in the Punnett Square. What is the probability that the offspring will produce corn ears with yellow kernels? ___Phenotype- 100%_ Genotype YY- 50% and Yy- 50%_____

For other side of card:
Suggested websites for more Punnett square information:
This website offers the basics of Punnett square construction using eye color alleles.
http://www.youtube.com/watch?v=prkHKjfUmMs
This website offers more advanced Punnett square crosses.
http://www.youtube.com/watch?v=Y1PCwxUDTl8
Monsanto has a great website about modern breeding techniques.
http://www.monsanto.com/improvingagriculture/pages/modern-