

Animal and Plant Genetics

Name _____

1. Define the following terms:

Genotype:

Phenotype:

Hybrid:

Crossbreeding:

2. Complete the following Punnett Squares and determine the offspring.

R-Wrinkled r-Smooth

Genotype:	% Homozygous	Results	
Phenotype:	Wrinkled	% Heterozygous	% Homozygous
		Wrinkled	Smooth

	R	R
R		
R		

	R	r
R		
R		

	R	r
R		
r		

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AFNR Biotechnology

The reason for variation in offspring is due to the process of meiosis, where the chromosomes of mother and father independently sort and produce offspring. There are many factors that may affect this variation: linked genes, crossing over, sex-linked traits, traits with multiple alleles, traits affected by the presence or absence of other traits (epistasis). Researchers are finding more and more of these “exceptions” to Mendel’s original research all the time. An activity that investigates all of these aspects can be found at [Dragon Genetics](#). Following is a simplified version.

3. Create your own animal using the choices below. Draw a picture of your animal and its environment.

Hair Color: (B-brown, b-blonde)

Spots: (N-no spots, n-spots)

Eye Color: (G-green, y-yellow)

Tail: (T-tail, t-no tail)

Scales: (N-no scales, n-scales)

Horns: (H-no horns, h-horns)

Feet: (W-not webbed, w-webbed)

Teeth: (F-pointed fangs or f-flat surfaced)

Next, choose a partner and cross your animals to see what the offspring will look like. Write one paragraph describing the offspring, then draw a picture of the offspring.