

Genetics

Name: _____

Fur Phenotypes

Period: _____

By now, you should understand that genes affect traits. Offspring inherit their genes from their parents. Among other things, the genes decide what an organism looks like. Different versions of the genes are called **alleles**. It is the combination of particular alleles that determine if the organism will show dominant or recessive traits. A **Punnett square** is a little diagram that you can use to look at alleles, and predict the chances of dominant or recessive traits showing up in offspring. In a Punnett square, the alleles are represented by capital letters for dominant traits, and by lowercase letters for recessive traits.

Imagine that for a certain kind of bear, the allele for black fur (B) is dominant over brown fur (b). Write the alleles from each parent on the outside of the Punnett squares, and then fill in the squares themselves with the appropriate combinations of alleles that are possible. Color in the pictures of the bears to show how many are possible with colored pencils: brown for brown fur, black for black fur.

Cross #1—Both parents pass on Bb alleles.

	B	b
B		
b		

genotypes: _____ could have black fur (BB)

_____ could have black fur (Bb)

_____ could have brown fur (bb)

phenotype of black fur: 

phenotype of brown fur: 

Cross #2—One parent passes on BB alleles, while the other passes on bb alleles.

genotypes: _____ could have black fur (BB)

_____ could have black fur (Bb)

_____ could have brown fur (bb)

phenotype of black fur: 

phenotype of brown fur: 

turn this page over for two more...

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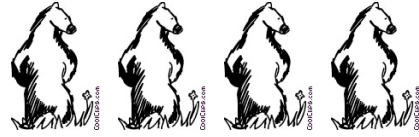
Cross #3—One parent passes on Bb alleles, while the other passes on bb alleles.

genotypes: _____ could have black fur (BB)

_____ could have black fur (Bb)

_____ could have brown fur (bb)

phenotype of black fur:



phenotype of brown fur:



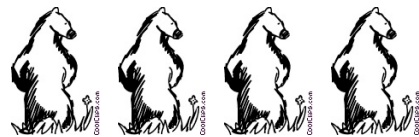
Cross #4— Both parents pass on bb alleles.

genotypes: _____ could have black fur (BB)

_____ could have black fur (Bb)

_____ could have brown fur (bb)

phenotype of black fur:



phenotype of brown fur:

