Name KEY Period _____ Date _____

Monohybrid Crosses Practice

For all of the following questions, use these facts: the trait is fur color (f). Black fur is dominant over gray fur.

1. Write the letter of the dominant allele. F
2. Write the letter of the recessive allele. f
3. Write out the homozygous dominant genotype (2 alleles). FF
4. Write out the heterozygous genotype (2 alleles). Ff
5. Write out the homozygous recessive genotype. ff
6. Write the genotype for gray fur. ff
7. Write the genotype for Black fur. FF or Ff
8. Write the phenotype for #3. Black fur
9. Write the phenotype for #4. Black fur
10. Write the phenotype for #5. Gray fur

Still using fur color, do the following monohybrid cross problems. (Remember: Black fur is dominant over gray)

	F	F
f	Ff	Ff
f	Ff	Ff

1. If the **mother is homozygous recessive** and the **father is homozygous dominant**.

   a) Write the genotype ratio

   4 Ff

   b) Write the phenotype ratio

   4 Black fur

	F	f
F	FF	Ff
f	Ff	ff

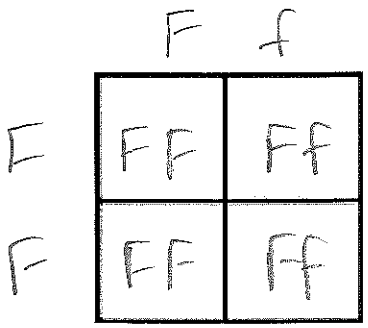
2. If the **mother is heterozygous**, and the **father is heterozygous**.

   a) Write the genotype ratio

   1 FF 1 ff
   2 Ff

   b) Write the phenotype ratio

   3 Black fur
   1 Gray fur



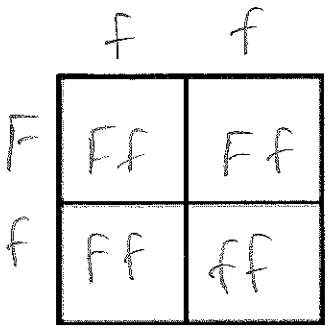
3. If the **mother is heterozygous**, and the **father is homozygous dominant**.

a)Write the genotype ratio

2 Ff
2 Ff

b) Write the phenotype ratio

100% Black fur



4. If the **mother is homozygous recessive**, and the **father is heterozygous**.

a) Write the genotype ratio

2 Ff 2 ff

b) Write the phenotype ratio

2 Black fur
2 Gray fur

Word Problems using Monohybrid Crosses

1. Purple flowers (P) are dominant to white flowers (p). Perform the following crosses. For each cross, give the phenotype and genotype of all offspring.

A. PP x pp
B. Pp x Pp
C. PP x Pp

A.

	P	P
p	Pp	Pp
p	Pp	Pp

G: 100% Pp
P: 100% Purple

B.

	P	p
P	PP	Pp
p	Pp	pp

G: 1 PP 2 Pp 1 pp
P: 3 Purple 1 white

C.

	P	P
P	PP	PP
P	Pp	Pp

G: 2 PP 2 Pp
P: 4 Purple

2. In pea plants, yellow seed color is dominant to green seed color. If a heterozygous pea plant is crossed with a plant that is homozygous recessive for seed color, what is the probability that the offspring will have green seeds?

Yy x yy

	Y	y
y	Yy	yy
y	Yy	yy

50%

3. If all of the offspring of a particular cross have the genotype Gg, what must the genotype of the parents be?

GG and gg

4. In fruit flies normal wings (W) is dominant over vestigial wings (w). The results of a cross, of two fruit flies, give the following results:
Normal wing 793
Vestigial wing 811

What are the genotypes of the parents of the F1 generation offspring? Use a Punnett square to prove your answer.

Ww x ww

	W	w
w	Ww	ww
w	Ww	ww

50% Normal wings

50% vestigial wings

5. Red eyes (R) in fruit flies are dominant over white eyes (r). Using Punnett squares, find the possible eye colors of the F1 generation for each of the following crosses.

A. Rr x rr
B. rr x RR
C. Rr x Rr

A.

	R	r
r	Rr	rr
r	Rr	rr

50% Red
50% white

B.

	R	R
r	Rr	Rr
r	Rr	Rr

100% Red

C.

	R	r
R	RR	Rr
r	Rr	rr

75% Red
25% white

6. The result of a cross is 3 purple flowers and 1 white flower. Using a cross, determine whether a plant with purple flowers is heterozygous (Pp) or homozygous dominant (PP).

	P	p
P	PP	Pp
p	Pp	pp

Pp x Pp