

**Biology Extra Credit**

**Dihybrid Cross Worksheet**

Name \_\_\_\_\_ Due Date \_\_\_\_\_

Information regarding dihybrid crosses (practice and instructions) can be found linked to the following URL:  
<http://local.brookings.k12.sd.us/biology/WORKSHEETS/ch%2011%20genetics/fl1%20dihybridcrossinfo%20extracredit.pdf>

Refer to the following information for problems 1-5. Use the assigned letters as recorded in the chart below.

*In pea plants...*

Tall is dominant over short.	T = tall	t = short
Yellow is dominant over green peas	G = yellow	g = green
Purple is dominant over white flowers	F = purple	f = white
Round is dominant over wrinkled peas	R = round	r = wrinkled

**1. homozygous tall round X homozygous short wrinkled**

What is the genotype for a parent pea plant that is homozygous tall and round? \_\_\_\_\_

What is the genotype for a parent pea plant that is homozygous short and wrinkled? \_\_\_\_\_

What are the possible gamete combinations?  
 \_\_\_\_\_

What are the possible gamete combinations?  
 \_\_\_\_\_

Complete the cross. Use different colors to circle the offspring with the same genotype.


What is the probability that the offspring will be tall and round? \_\_\_\_\_

What is the probability that the offspring will be tall and wrinkled? \_\_\_\_\_

What is the probability that the offspring will be short and round? \_\_\_\_\_

What is the probability that the offspring will be short and wrinkled? \_\_\_\_\_

**2. homozygous tall, heterozygous purple X homozygous short, heterozygous purple**

What is the genotype for a parent pea plant that is homozygous tall and heterozygous purple? \_\_\_\_\_

What is the genotype for a parent pea plant that is short and heterozygous purple? \_\_\_\_\_

What are the possible gamete combinations?  
 \_\_\_\_\_

What are the possible gamete combinations?  
 \_\_\_\_\_

Complete the cross. Use different colors to circle the offspring with the same genotype.


What is the probability that the offspring with be tall and purple? \_\_\_\_\_

What is the probability that the offspring with be tall and white? \_\_\_\_\_

What is the probability that the offspring with be short and purple? \_\_\_\_\_

What is the probability that the offspring with be short and white? \_\_\_\_\_

**3. homozygous tall, heterozygous yellow X heterozygous tall, heterozygous yellow**

What is the genotype for a parent pea plant that is homozygous tall and heterozygous yellow? \_\_\_\_\_

What is the genotype for a parent pea plant that is heterozygous tall and heterozygous yellow? \_\_\_\_\_

What are the possible gamete combinations? \_\_\_\_\_

What are the possible gamete combinations? \_\_\_\_\_

Complete the cross. Use different colors to circle the offspring with the same genotype.


What is the probability that the offspring with be tall and yellow? \_\_\_\_\_

What is the probability that the offspring with be tall and green? \_\_\_\_\_

What is the probability that the offspring with be short and yellow? \_\_\_\_\_

What is the probability that the offspring with be short and green? \_\_\_\_\_

**4. heterozygous tall, heterozygous yellow X heterozygous tall, heterozygous yellow**

What is the genotype for a parent pea plant that is heterozygous tall and heterozygous yellow? \_\_\_\_\_

What is the genotype for a parent pea plant that is heterozygous tall and heterozygous yellow? \_\_\_\_\_

What are the possible gamete combinations? \_\_\_\_\_

What are the possible gamete combinations? \_\_\_\_\_

Complete the cross. Use different colors to circle the offspring with the same genotype.


What is the probability that the offspring with be tall and yellow? \_\_\_\_\_

What is the probability that the offspring with be tall and green? \_\_\_\_\_

What is the probability that the offspring with be short and yellow? \_\_\_\_\_

What is the probability that the offspring with be short and green? \_\_\_\_\_

5. heterozygous round and white X wrinkled and white

What is the genotype for a parent pea plant that is heterozygous round and white? \_\_\_\_\_

What are the possible gamete combinations?  
\_\_\_\_\_

What is the genotype for a parent pea plant that is wrinkled and white? \_\_\_\_\_

What are the possible gamete combinations?  
\_\_\_\_\_

Complete the cross. Use different colors to circle the offspring with the same genotype.


What is the probability that the offspring with be round and white? \_\_\_\_\_

What is the probability that the offspring with be round and purple? \_\_\_\_\_

What is the probability that the offspring with be wrinkled and white? \_\_\_\_\_

What is the probability that the offspring with be wrinkled and purple? \_\_\_\_\_

**6. Brad and Angelina are expecting a baby.**

Brad's rich uncle promised Brad and Angelina 1 million dollars if the baby born is a boy with blue eyes to carry on the family name (and genes...rich uncle has blue eyes). Brown eyes are dominant over blue eyes. Brad unfortunately has brown eyes, but is heterozygous for the trait. Angelina has blue eyes.

According to the information

Brad's genotype is **BbXy**

Angelina's genotype is **bbXX**

What are the possible gamete combinations for Brad?

What are the possible gamete combinations for Angelina?

What genotype must the baby have to be a blue eyed boy? \_\_\_\_\_

**Complete the Punnett Square to show the possible genotypes for the baby.**


What is the probability that Brad and Angelina's baby will be a boy with blue eyes and they will get the \$1 million? \_\_\_\_\_

