Biology 1

***Monohybrid Cross Practice***

***Group Worksheet***

Complete these crosses on a single answer sheet***.***

***A.***

1. Sort these into two groups, homozygous and heterozygous (create a “t” chart): AA Aa Cc AB Tt Rr CC dd TT aa Dd Ww II Ii ii

***B.*** Show all of your Punnett squares.

1. Tall pea plants are dominant over short pea plants. T = tall t = short Cross a heterozygous tall female with a heterozygous tall male. Show the genotypic and phenotypic ratios.

2. Cross a pure tall pea plant female with a pure short male. Show the genotypic and phenotypic ratios.

3. Cross the F1 generation from the previous problem. What is the ratio of tall to short in the F2 generation? Show the genotypic and phenotypic ratios.

4. Round peas are dominant to wrinkled peas. R = round r = wrinkled. Show a punnett square for each of the following:

a. a heterozygous round female and a wrinkled male

b. a wrinkled male and a homozygous round female

c. a homozygous wrinkled male and a homozygous wrinkled female

d. a heterozygous round male and a heterozygous round female

5. Show the offspring (F2) of the F1 generation in problem #4 b. Show the genotypic and phenotypic ratios.

6. Yellow peas are dominant over green peas. B = yellow b = green. Tell the genotypes of the parents.

a. 68% are heterozygous yellow peas, 10% have green, and 22% have homozygous yellow peas.

b. All offspring have green peas.

c. 87 offspring have yellow peas, 10 have green peas.

***C.*** Punnett Practice

Black eyes in fruit flies (Drosophila) is dominant over red eyes. N = black n = red.

1. Cross a red eyed female with a heterozygous black eyed male.

2. What parents would produce 100% red eye offspring?

3. Cross a pure line, black eyed female with a red eyed male.

4. Select two of the F1 generation from the previous problem. Show their possible offspring. Please include their genotypes and phenotypes.

5. The offspring of a cross included 50% red eyed and 50% black eyed fruit flies. What were the parent’s genotypes?

6. The offspring of another fruit fly cross include 50% heterozygous black eyed and 50% homozygous black eyed fruit flies. What were the parent genotypes?

7. What was the parental genotype of a cross that produced 100% red eyed fruit flies?

Biology 1 Name: Name:

***Monohybrid Cross Practice***  Name: Name:

***Group Worksheet - ANSWERS*** Hour: Date:

***A. Homozygous Heterozygous***

***B.***

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1. 2. 3.

G: G: G:

P: P: P:

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4a. 4b.

4c.

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4d.

5. G:

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P:

6a. \_\_\_\_\_ \_\_\_\_\_ X \_\_\_\_\_ \_\_\_\_\_ 6b. \_\_\_\_\_ \_\_\_\_\_ X \_\_\_\_\_ \_\_\_\_\_ 6c. \_\_\_\_\_ \_\_\_\_\_ X \_\_\_\_\_ \_\_\_\_\_

***C.***

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3. 4. G:

P:

5. \_\_\_\_\_ \_\_\_\_\_ , \_\_\_\_\_ \_\_\_\_\_

6. \_\_\_\_\_ \_\_\_\_\_ , \_\_\_\_\_ \_\_\_\_\_

7. \_\_\_\_\_ \_\_\_\_\_ , \_\_\_\_\_ \_\_\_\_\_