

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

### Genetics Basics

Like any other language, the language of genetics consists of symbols and rules for using these symbols. When a trait being studied shows dominance, it is observed in nature much more frequently than if it is a recessive form. The capitalized letter of the dominant form becomes its symbol (Ex. R stands for round seeds). For the recessive form of the same trait (the recessive allele); the symbol remains the same but not capitalized (Ex. r stands for wrinkled seeds). Complete the following chart using these rules of symbols.

**Dominant:** tall stems, colored seed coats, green pods, yellow seeds, round seeds, axial flowers

**Recessive:** short stems, white seed coats, yellow pods, green seeds, wrinkled seeds, terminal flowers

|            | height | coats | pods | seed color | shape | flower |
|------------|--------|-------|------|------------|-------|--------|
| Dominant:  |        |       |      |            |       |        |
| Recessive: |        |       |      |            |       |        |

1. Using the symbols from the above chart, write the allele symbols that would be present in the following homozygotes. Next, indicate whether they are going to express the dominant or recessive trait.

tall stemmed plants      \_\_\_\_\_      \_\_\_\_\_  
 terminal flowers      \_\_\_\_\_      \_\_\_\_\_  
 white seed coats      \_\_\_\_\_      \_\_\_\_\_  
 yellow seeds      \_\_\_\_\_      \_\_\_\_\_  
 yellow pods      \_\_\_\_\_      \_\_\_\_\_

2. Write the symbols for the following heterozygotes

yellow seeded peas      \_\_\_\_\_      colored seed coats      \_\_\_\_\_  
 axial flowers      \_\_\_\_\_      round seeds      \_\_\_\_\_  
 green podded peas      \_\_\_\_\_      tall stemmed plants      \_\_\_\_\_

3. The following letters represent pairs of alleles. Indicate whether each pair is a heterozygote or homozygote. Then indicate whether each pair would display a dominant or recessive phenotype.

a. DD \_\_\_\_\_      b. Dd \_\_\_\_\_  
 c. ss \_\_\_\_\_      d. Rr \_\_\_\_\_  
 e. Tt \_\_\_\_\_      f. yy \_\_\_\_\_