**Reading Guide 11-1** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Every living thing has a set of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ inherited from its parents.
2. Define **genetics**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. After becoming a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, Mendel spent several years studying \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and mathematics at the University of Vienna.
4. During sexual reproduction, male and female reproductive cells join, a process known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
5. Pea flowers are normally \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which means that sperm cells in pollen fertilize the egg cells in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ flowers.
6. Define **true-breeding**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
7. When Mendel crossed plants with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ characters for the same trait, the resulting offspring had only one of the characters.
8. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a specific characteristic, such as seed color or plant height, that varies from one individual to another.
9. *Filius* and *filia* are the Latin words for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
10. The offspring of crosses between parents with different traits are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
11. To Mendel’s surprise, all of the offspring had the character of only \_\_\_\_\_\_\_\_\_\_ of the parents.
12. Mendel’s first conclusion was that biological inheritance is determined by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from one generation to the next.
13. Scientist calls the chemical factors that determine traits \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
14. Define an **allele**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
15. Mendel’s second conclusion is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
16. The principle of dominance states that some alleles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and others are

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. When Mendel allowed the F1 plants to reproduce by self-pollination the traits controlled by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ alleles reappeared in about \_\_\_\_\_\_\_\_\_ of the F2 plants in each cross.
2. Define **segregation**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. A gamete is a \_\_\_\_\_\_\_\_\_\_ cell.
4. A capital letter T represents a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ allele.

**Section 11-2 Probability and Punnett Squares**

1. Mendel realized that the principles of probabilities could be used to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the results of genetic crosses.
2. The likelihood that a particular \_\_\_\_\_\_\_\_\_\_\_\_\_\_ will occur is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. That individual probabilities are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ together illustrates an important point – past outcomes do not affect \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ones.
4. Punnett squares can be used to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and compare the genetic variations that will results from a cross.
5. Organisms that have two identical alleles are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Organisms that have two different alleles for the same trait are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_is a physical characteristic.
8. A plant with the genotype Tt will have what phenotype? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. A plant with the short phenotype will have what genotype? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. Probabilities predict the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ outcome of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ number of events.
11. Probability cannot predict the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ outcome of an individual event.