NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What is the most basic living or structural unit of all life?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Which cell structure is responsible for coordinating cell activities and is also responsible for reproduction?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Which structure allows materials to enter and leave the cell? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Diffusion is when molecules \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
5. All living things are made of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
6. What is the clear, jelly-like substance that is found inside plant and animal cells called?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. What is a plant cell structure in which food is made? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. The part of plant cells that is normally green is the\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
9. What component of a cell serves as a temporary storage center?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. The diffusion of water across a membrane from an area of higher concentration to an area of lower concentration is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. Plant cells have chloroplast and a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that animal cells do not.
12. What part of the cell does photosynthesis occur in? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. Which structure that serves as the cell information center can be found in *both* plant and animal cells?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
14. Why are vacuoles smaller in animal cells than in plant cells? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
15. Which structures provide shape to plant cells and allow plants to store food and water?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
16. Which picture shows a *plant* cell?
	1.  B C  D
17. List the two organelles you would expect to find only in a plant cell?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What type of bacteria has a spherical or rounded shape? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. True or false – Protists are classified in the animal kingdom? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. How are the euglena different from other protists? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. What is the foot like structure that allows some protists to move by being extended forward and then pulling the body forward as well?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. What structure is used by the Euglena to move and pull themselves around? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. List the three types of protists. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. What body structure helps the paramecium move through water?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Rod shaped bacteria are also known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What term is used to define the ability of an organism to keep conditions inside its body constant, even though conditions in its external environment may change? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What process converts light energy to chemical energy that is then stored in sugars?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What cellular process is needed for growth, replacement, and asexual reproduction?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Which individual is best known for his work in the field of heredity or genetics?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (he studied pea plants)
2. What is a trait that is the “weaker” of two traits called? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Any trait that can be observed in an organism, such as a structure or a particular function, is part of the organism’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. The internal stored *information* (two letters) that deals with all aspects of the heredity of an organism is called its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
5. An allele is represented by Hh. Does the H represent the dominant or recessive trait?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Any one of several alternate forms of a gene, the letter that occupies a given position on a chromosome, is called a/an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
7. Each species of organism has a characteristic number of these. For example, cats have 19 pairs, for a total of 38. What are being described? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are strands of tightly woven DNA.
9. The Punnett squares below show the results of mating peas that have traits for a round shape or a wrinkled shape.

The gene for the round shape is dominant.

|  |  |  |  |
| --- | --- | --- | --- |
| Generation 1: Both parents purebred |  | R | R |
| r | Rr | Rr |
| r | Rr | Rr |

In the first generation, what portion of the peas is rounded? \_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. When using Punnett squares to show inherited probability, what does a capital letter stand for?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. When purebred tall plants are crossed with hybrid tall plants, what will the offspring look like?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



This Punnett Square shows the genetic cross between a black and a white rabbit. Use this diagram below to answer the next 2 questions.

1. In the purebred black rabbit, what term is used when the two alleles are BB? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Would the first generation offspring of a white rabbit and a black rabbit be heterozygous or homozygous?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. List the three types of mutations, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Two hybrid fruit flies each have a dominant gene for brown eyes (B) and a recessive gene for red eyes (b). They are mated. What percent of the offspring have brown eyes? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. In squirrels, the gray fur gene (G) is dominant and the gene for black fur (g) is recessive. If 50% of a squirrel litter is black, what parental cross probably produced this result? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. If “S” stands for a dominant form of the “smooth” gene in a plant (producing smooth leaves), and “s” stands for a recessive form of the “smooth” gene (producing wrinkled leaves), what gene structure would a hybrid plant have? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Each row and column in a Punnett square is labeled with a letter. What does each letter (allele) stand for?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_