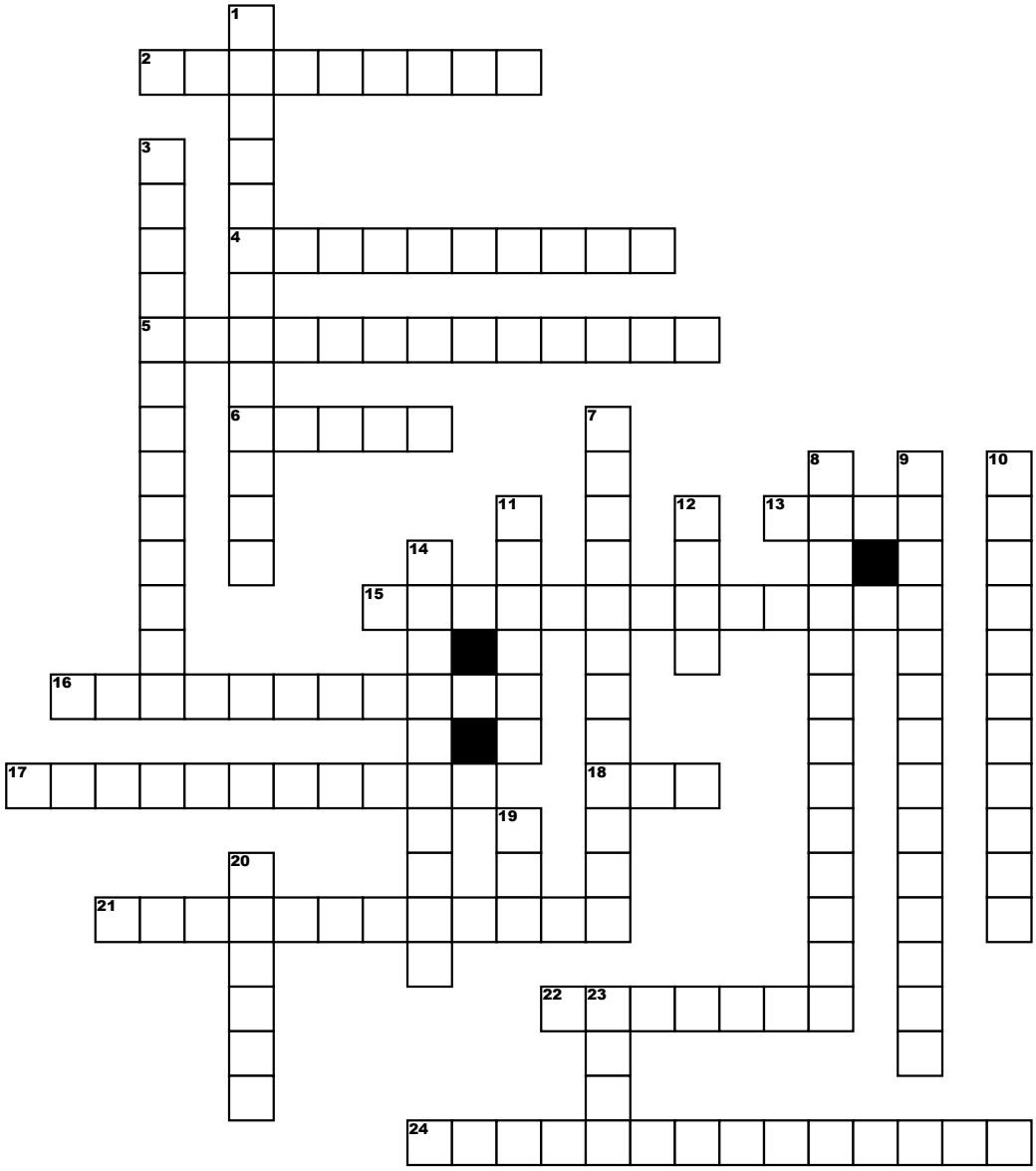
Name: _____

12.1 12.3



Across

2. the material of which the chromosomes of organisms other than bacteria (i.e., eukaryotes) are composed. It consists of protein, RNA, and DNA.

4. a threadlike structure of nucleic acids and protein found in the nucleus of most living cells, carrying genetic information in the form of genes.

5. is an enzyme that produces primary transcript RNA. In cells, RNAP is necessary for constructing RNA chains using DNA genes as templates, a process called transcription.

6. a unit of heredity that is transferred from a parent to offspring and is held to determine some characteristic of the offspring.

13. RNA consisting of folded molecules that transport amino acids from the cytoplasm of a cell to a ribosome.

15. a weak bond between two molecules resulting from an electrostatic attraction between a proton in one molecule and an electronegative atom in the other.

16. is the process in which ribosomes in a cell's cytoplasm create proteins, following transcription of DNA to RNA in the cell's nucleus In translation

17. a pair of parallel helices intertwined about a common axis, especially that in the structure of the DNA molecule.

18. ribonucleic acid, a nucleic acid present in all living cells. Its principal role is to act as a messenger carrying instructions from DNA for controlling the synthesis of proteins, although in some viruses RNA rather than DNA carries the genetic information.

21. nitrogen containing molecule that has the same chemical properties as a base. They are particularly important since they make up the building blocks of DNA and RNA: adenine, guanine, cytosine, thymine and uracil.

22. any of a class of nitrogenous organic compounds that consist of large molecules composed of one or more long chains of amino acids and are an essential part of all living organisms, especially as structural components of body tissues such as muscle, hair, collagen, etc., and as enzymes and antibodies.

24. lack a distinct cell nucleus and their DNA is not organized into chromosomes. They also lack the internal structures bound by membranes called organelles, such as mitochondria.

Down

1. Discovered the chargaff rule

3. is a conserved mechanism that restricts DNA replication to only once per cell cycle. Eukaryotic DNA replication of chromosomal DNA is central for the duplication of a cell and is necessary for the maintenance of the eukaryotic genome.

7. The rule that in DNA there is always equality in quantity between the bases A and T and between the bases G and C. (A is adenine, T is thymine, G is guanine, and C is cytosine.)

8. is the process by which the information in a strand of DNA is copied into a new molecule of messenger RNA (mRNA). DNA safely and stably stores genetic material in the nuclei of cells as a reference, or template.

9. The two twentieth-century biologists (James D. Watson of the United States and Francis H. C. Crick of England) who discovered the double helix of DNA.

10. a compound consisting of a nucleoside linked to a phosphate group. Nucleotides form the basic structural unit of nucleic acids such as DNA.

11. a colorless crystalline compound with basic properties, forming uric acid on oxidation.

12. is a subtype of RNA. An mRNA molecule carries a portion of the DNA code to other parts of the cell for processing. mRNA is created during transcription. During the transcription process, a single strand of DNA is decoded by RNA polymerase, and mRNA is synthesized.

14. a colorless crystalline compound with basic properties.

19. Deoxyribonucleic acid is a molecule that carries the genetic instructions used in the growth, development, functioning and reproduction of all known living organisms and many viruses

20. a compound found in living tissue as a constituent base of RNA. In DNA its place is taken by thymine.

23. a molecular component of a ribosome, the cell's essential protein factory. Strictly speaking, ribosomal RNA (rRNA) does not make proteins. It makes polypeptides (assemblies of amino acids) that go to make up proteins.

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