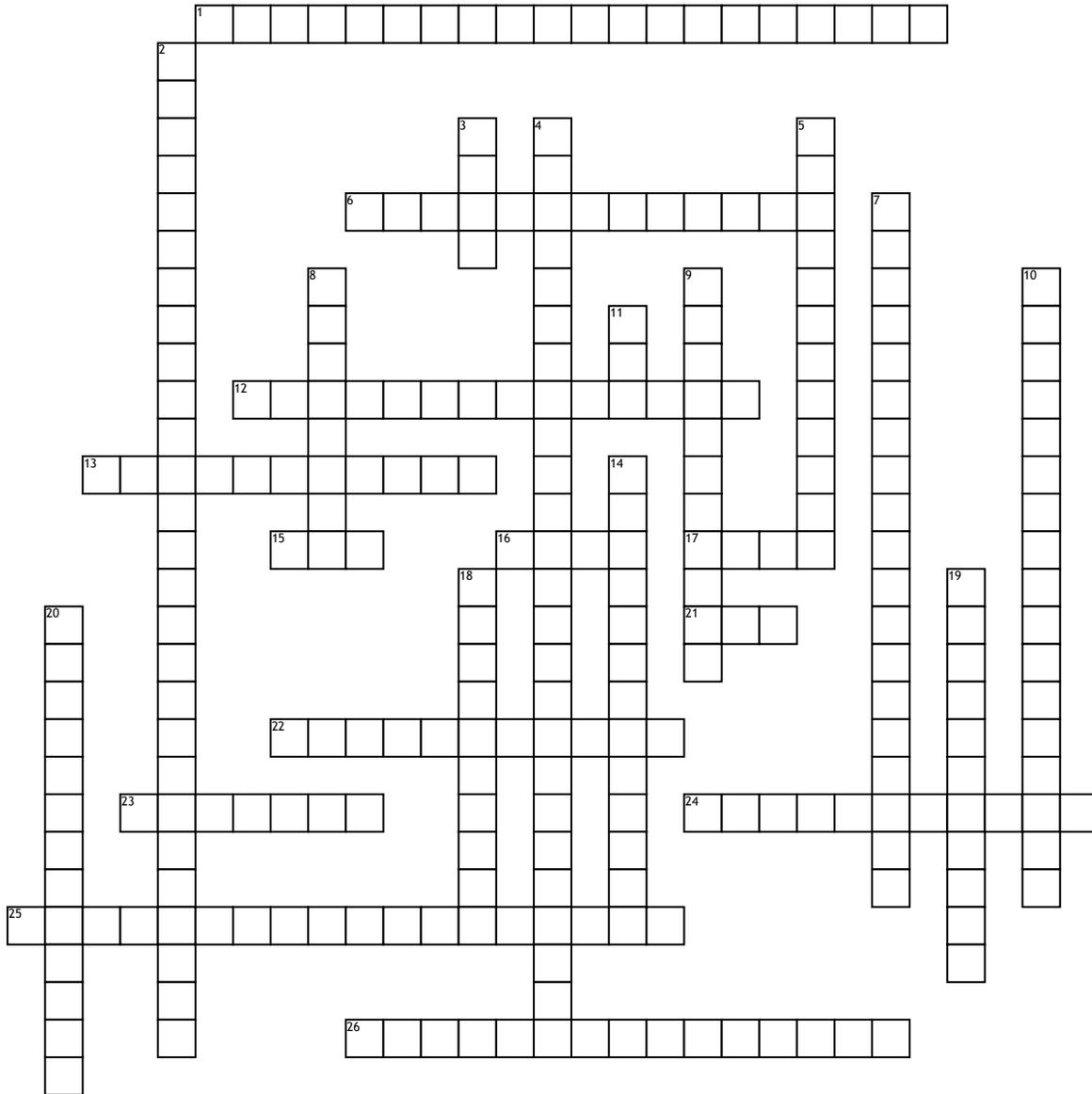


# Chapter 12 and 13 Vocab



**Across**

- 1. contains a gene or genes which have been artificially inserted instead of the organism acquiring them through reproduction
- 6. A small-scale mutation characterized by a change of only one nucleotide base in the DNA or RNA molecule
- 12. An enzyme assisting in DNA replication
- 13. an enzyme that catalyzes the energy-dependent unwinding of the DNA double helix during DNA replication
- 15. any of various nucleic acids that contain ribose and uracil as structural components and are associated with the control of cellular chemical activities
- 16. messenger RNA
- 17. A nucleic acid found in all living cells. Plays a role in transferring information from dna to the protein
- 21. A technique for amplifying DNA sequences in vitro by separating the DNA into two strands and incubating it with oligonucleotide primers and DNA polymerase.
- 22. the spiral arrangement of the two complementary strands of DNA
- 23. The process of creating an exact copy of a biological unit (e.g. a DNA sequence, cell, or organism) from which it was derived, especially by way of biotechnological methods
- 24. a complex organic substance present in living cells, Like DNA and RNA

- 25. the development and application of scientific methods, procedures, and technologies that permit direct manipulation of genetic material in order to alter the hereditary traits of a cell, organism, or population.
  - 26. are factors that could change the DNA sequence that makes up the gene. this factors could be hereditary or environmental.
- Down**
- 2. The normal process of DNA synthesis, in which the two original strands of the molecule separate, and each strand acts as a template for the synthesis of a new, complementary strand
  - 3. RNA involved in protein synthesis
  - 4. This rule states that in DNA, adenine always pairs with thymine and guanine pairs with cytosine.
  - 5. Describes a key assumption of molecular biology, namely, that each gene in the DNA molecule carries the information needed to construct one protein
  - 7. A mutation involving a long segment of dna. These mutations can involve deletions, insertions, or inversions of sections of dna. In some cases, deleted sections may attach to other chromosomes, disrupting both the chromosomes that loses the dna and the one that gains it.
  - 8. a sudden departure from the parent type in one or more heritable characteristics, caused by a change in a gene or a chromosome
  - 9. is an experimental technique that uses genes to treat or prevent disease

- 10. a technique used to compare individuals by molecular genotyping
- 11. an extremely long macromolecule that is the main component of chromosomes and is the material that transfers genetic characteristics in all life forms
- 14. The process of transcribing or making a copy of genetic information stored in a DNA strand into a complementary strand of RNA
- 18. any of a group of molecules that, when linked together, form the building blocks of DNA or RNA
- 19. is the process of making an RNA copy of a gene sequence. This copy, called a messenger RNA (mRNA) molecule, leaves the cell nucleus and enters the cytoplasm, where it directs the synthesis of the protein
- 20. is an enzyme that is responsible for making rna from a dna template