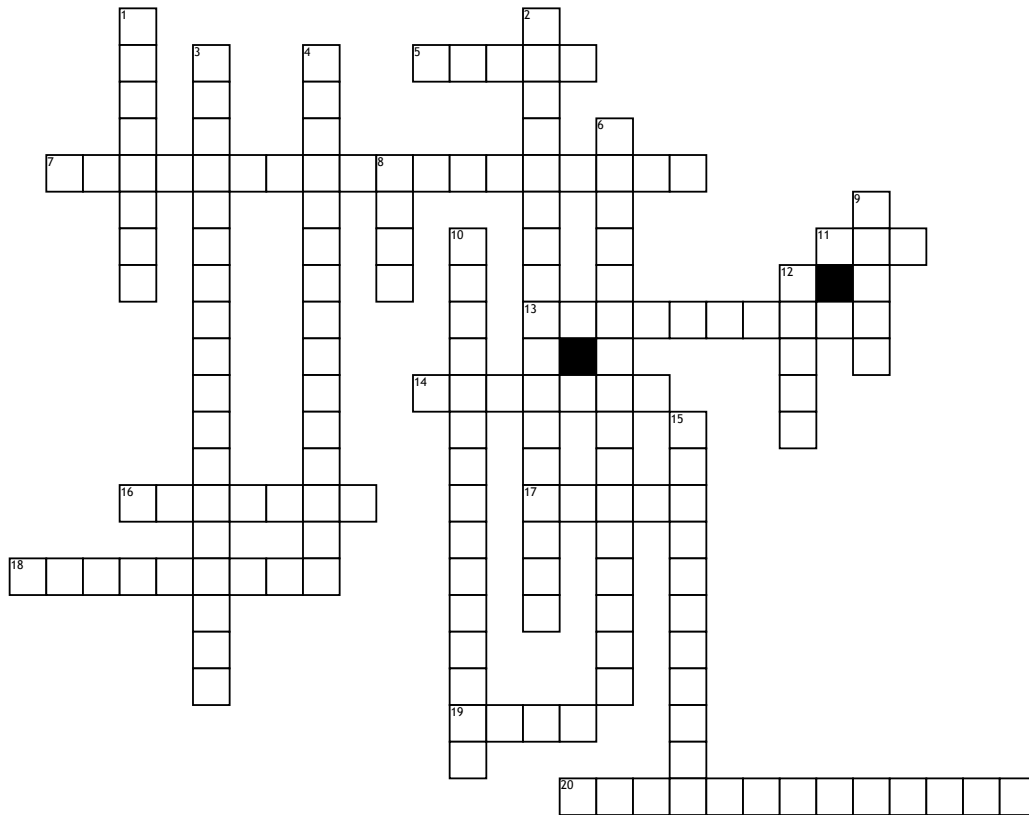


# CRISPR



**Across**

- 5. a molecular
- 7. the deliberate modification of the characteristics of an organism by manipulating its genetic material.
- 11. a 2-6 base pair DNA sequence immediately following the DNA sequence targeted by the Cas9 nuclease in the CRISPR bacterial adaptive immune system.
- 13. is one of the structural components, or building blocks, of DNA and RNA.
- 14. a mature haploid male or female germ cell which is able to unite with another of the opposite sex in sexual reproduction to form a zygote.
- 16. a small, circular, double-stranded DNA molecule that is distinct from a cell's chromosomal DNA.
- 17. molecule that helps decode a messenger RNA (mRNA) sequence into a protein.
- 18. occurs when a DNA gene is damaged or changed in such a way as to alter the genetic message carried by that gene.

- 19. a protein which plays a vital role in the immunological defense of certain bacteria against DNA viruses, and which is heavily utilized in genetic engineering applications.
- 20. The process of transcribing or making a copy of genetic information stored in a DNA strand into a complementary strand of RNA (messenger RNA or mRNA) with the aid of RNA polymerases.

**Down**

- 1. a creature such as a plant, animal or a single-celled life form, or something that has interdependent parts and that is being compared to a living creature.
- 2. A set of theories that attempts to explain inheritance and biological diversity
- 3. facts consist of unintended point mutations, deletions, insertions inversions, and translocations.
- 4. a method in molecular genetics that is used to help understand the function of a gene by analyzing the phenotypic effects of specific engineered gene sequences.

- 6. a complex of ribonucleic acid and RNA-binding protein.
- 8. living organisms whose genetic material has been artificially manipulated in a laboratory through genetic engineering.
- 9. restriction enzymes that can be engineered to cut specific sequences of DNA
- 10. used to identify genes (or set of genes) responsible for a particular phenotype of an organism.
- 12. a small infectious agent that replicates only inside the living cells of an organism.
- 15. the process of translating the sequence of a messenger RNA (mRNA) molecule to a sequence of amino acids during protein synthesis.

**Word Bank**

- |                    |                  |                      |                     |
|--------------------|------------------|----------------------|---------------------|
| transcription      | ribnucleoprotein | talen                | gametes             |
| cas 9              | virus            | off target mutations | genetic engineering |
| indel              | forward genetics | trRNA                | reverse genetics    |
| plasmid            | organism         | translation          | mutations           |
| Mendelian genetics | GMO's            | PAM                  | nucleotide          |