

## VOCABULARY LIST

## GENETICS

**amino acid** (*noun*): a chemical building block of proteins.

- Amino acids are present in all living organisms.

**DNA** (*noun*): the molecule found in cells that carries instructions for cell structure and processes in the body.

- DNA contains genes that are passed on from parents to offspring and give living things their inherited characteristics. The letters DNA stand for **deoxyribonucleic acid**.

**encode** (*verb*): to be responsible for producing a substance or behavior (when referring to a gene).

**gene** (*noun*): a small section of DNA that contains instructions, usually for making a specific protein.

**genome** (*noun*): the complete set of genes in an organism.

**messenger RNA** (*noun*): a molecule that delivers genetic instructions from DNA so the cell can produce a specific protein.

- Also known as mRNA, it is naturally found in every cell in the body. The letters RNA stand for **ribonucleic acid**.

**sequence** (*noun*): a particular order (such as, among the base components that make up DNA or RNA; different sequences form different genes).

## IMMUNOLOGY

**antibody** (*noun*): a protein the immune system produces in response to a foreign substance.

**antigen** (*noun*): the part of an infectious organism that the immune system recognizes as foreign, such as an outer piece of a virus.

**lipid nanoparticle**: a tiny particle (smaller than one-billionth of a meter!) made up of lipids—or fats. In medicine, they're used to deliver drugs or nucleic acids like mRNA to certain parts of the body. Their outer lipid layer works like a protective shell to guard their contents until delivery.

**memory cell** (*noun*): a type of white blood cell that “remembers” antigens as well as which antibodies the immune system should produce to defend against those specific antigens.

**muscle cell** (*noun*): A type of cell that groups together to form muscles. Muscles attached to bones can help the body move.

**vaccine** (*noun*): a substance that helps protect against certain diseases by helping the immune system recognize and destroy specific microbes.

## SCIENTIFIC RESEARCH

**clinical trial** (*noun*): a research study involving human participants to gather data on the safety and effectiveness of a health treatment.

**cryo-electron microscope** (*noun*): a type of microscope that blasts a beam of electrons into a frozen specimen, such as a virus. A specialized camera detects how the electrons interact with the atoms in the specimen, which tells scientists where the atoms are located.

- This technology allows scientists to determine the 3D structure of specimens that are too tiny to be seen with light.

**machine learning** (*noun*): an approach to artificial intelligence in which a computer algorithm (a set of rules and procedures) is developed to analyze and make predictions from data that is fed into the system.

- Machine learning-based technologies are routinely used every day, such as personalized news feeds and traffic prediction maps.

## TAKE IT FURTHER

Choose five vocabulary words that you think will be hardest to remember, and then write a paragraph with them (nonfiction or fiction).