

## K-8 Loudon County Summer Scholars Guide 2019-2020

Rising Grade \_\_\_\_\_ 9th \_\_\_\_\_

School \_\_\_\_\_ Fort Loudoun Middle School (Science) \_\_\_\_\_

Curriculum covered during the previous year that requires continued retention and repetition for students:

The new State of TN Science Standards utilize the Engineering and Design Process versus the Scientific Method. It is important that students recall the process: Ask, Imagine, Plan, Create, and Improve. Students will need to understand what a prototype is as part of the Engineering & Design Process.

Students studied about many forces and their interactions. This includes the workings and factors of electromagnets, generators, electric motors, Newton's Laws and free body diagrams.

Students studied about wave parts, behaviors, and their role in communication systems.

Students studied about factors that influence and provide evidence for evolution. This topic includes natural selection, artificial selection, paleontology/fossil record, comparative anatomy, and geology.

Students studied about the origin of the universe, the beginnings of the items within it, and technologies associated with data collection (pertaining to outer space). This includes the structure and surfaces of Earth.

Curriculum for the upcoming school year of which students should be aware, and areas that might be a challenge for students, with suggestions on how students can prepare for the upcoming year:

Students will begin studying the structure and functions of living organisms starting at the genetic level and moving larger. This includes many cell organelles and cell processes. Students will use mathematical models to analyze and record data on populations and the cycling of matter. Students will spend time on heredity, biological change, human impacts on environment, and links among other scientific disciplines. Students will study chemical interactions and reactions. Understanding of the periodic table and atomic bonds is essential.

Suggested Summer Reading:

Websites like Kids National Geographic, CK-12, and NewsELA all offer free reading resources with current events, articles that explain many of the topics listed above, and wonderful illustration & graphics to elaborate the content. Other sites such as the United States Geologic Survey, NASA, Khan Academy, PhET, and Smithsonian Natural History support the repetition of curriculum helpful for high school. The app NOVA elements is helpful for practicing atomic structure and bonding.

Suggested Activities/Practice Assignments

StudyJams is a free resource that students are able to access with videos about science and math topics, as well as short assessments that help to challenge the student's understanding of the topic. If students have access to science IXLs or ALEKs, there are several modules listed for Tn Science Standards.