



6th Grade Science

Willows Preparatory School 2019-20

Subject Aims

- Understand and appreciate science and its implications
- Consider science as a human endeavor with benefits and limitations
- Cultivate analytical, inquiring and flexible minds that pose questions, solve problems, construct explanations and judge arguments
- Develop skills to design and perform investigations, evaluate evidence and reach conclusions
- Build an awareness of the need to effectively collaborate and communicate
- Apply language skills and knowledge in a variety of real-life contexts
- Develop sensitivity towards the living and non-living environments
- Reflect on learning experiences and make informed choices

Keys to Class

- Textbook - iScience McGraw Hill – The two main textbooks are the Physical iScience as well as the Life iScience textbooks. An online subscription is provided to students.
- OneNote - OneNote is used to distribute course assignments, readings, laboratory investigations, inclass notes, and the assignment log. We also use OneNote as means of collaboration and project work.
- Homework – Science homework is intended to guide students through the course readings and build familiarity with relevant vocabulary terms.
- Projects and Lab Work – Students will learn lab safety and work collaboratively during lab investigations where they are encouraged to consider multiple points of view and engage in argumentation in processing scientific concepts. During their last trimester they will also work on a longer-term hands-on project in conjunction with their design class (STEAMD project).

Objective Criterion

<p>Objective A: Knowing and understanding</p>	<p>Are students able to explain scientific knowledge using the appropriate language? Can students apply their scientific knowledge to solve problems in new and unfamiliar situations? Can students use and evaluate information to make scientifically supported judgements?</p>
<p>Objective B: Inquiring and designing</p>	<p>Can students explain a problem or question that can be tested by a scientific investigation? Can students formulate a testable hypothesis that can identify independent and dependent variables as well as a logical justification for their relationship?</p>
<p>Objective C: Processing and evaluating</p>	<p>Can students present collected data and transform data to reflect meaningful analysis? Are students able to evaluate a hypothesis based on experimental results as well as the validity of the experimental method?</p>
<p>Objective D: Reflecting on the impacts of science</p>	<p>Are students able to connect scientific topics and relate them to specific real-world issues? Are students able to discuss the implications of scientific breakthroughs or discoveries and their relevance? Can students document the work of others and sources of information used?</p>

Content Brief

Trimester 1	Trimester 2	Trimester 3
<p>Scientific Problem Solving – Scientific Inquiry Process, Measurement and Scientific Tools, Safety in the Lab Chemistry – Classifying Matter, Physical Properties and Changes, Chemical Properties and Changes, Forms of Energy, Energy Transformations and Resources</p>	<p>Physics – Position and Motion, Speed and Velocity, Acceleration, Gravity and Friction Newton's Laws of Motion, Work and Power, Using Machines, Simple Machines</p>	<p>STEAMD Project Life Science – Characteristics of Life, Classifying Organisms, Exploring Life The Cell, Main Systems of the Body</p>