



## 7<sup>th</sup> 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

- **iScience** McGraw Hill – *Life, Physical, and Earth/Space* –
  - Classroom sets of hardcopy textbooks
  - PDFs made available through OneNote
  - LearnSmart© access for each textbook
  - eBook availability
- **OneNote** – Content Manager
  - Course assignments, readings, laboratory investigations, supplementary material and reflections.
  - Primary location for collaboration and project work.
- **21st Century Learning Design within the IB Framework** – Students assessed through IB criteria; Assessments designed with 21st Century Learning principles.
  - Collaboration
  - Communication
  - Knowledge Construction
  - Self-Regulation
  - Real-World Context
  - Applying Technology

## Objective Criterion

<b>Objective A: Knowing and Understanding</b>	<ul style="list-style-type: none"> <li>• Are students able to explain scientific knowledge using the appropriate language?</li> <li>• Can students apply their scientific knowledge to solve problems in new and unfamiliar situations?</li> <li>• Can students use and evaluate information to make scientifically supported judgements?</li> </ul>
<b>Objective B: Inquiring and Designing</b>	<ul style="list-style-type: none"> <li>○ Can students explain a problem or question that can be tested by a scientific investigation?</li> <li>○ Can students formulate a testable hypothesis that can identify independent and dependent variables as well as a logical justification for their relationship?</li> </ul>
<b>Objective C: Processing and Evaluating</b>	<ul style="list-style-type: none"> <li>▪ Can students present collected data and transform data to reflect meaningful analysis?</li> <li>▪ Are students able to evaluate a hypothesis based on experimental results as well as the validity of the experimental method?</li> </ul>
<b>Objective D: Reflecting on the Impacts of Science</b>	<ul style="list-style-type: none"> <li>❖ Are students able to connect scientific topics and relate them to specific real-world issues?</li> <li>❖ Are students able to discuss the implications of scientific breakthroughs or discoveries and their relevance?</li> <li>❖ Can students document the work of others and sources of information used?</li> </ul>

## Content Brief

Trimester 1	Trimester 2	Trimester 3
<p><b>Plate Tectonics</b> – Continental Drift Hypothesis, Theory of Plate Tectonics</p> <p><b>Earthquakes &amp; Volcanoes</b> – Wave Propagation, Cone Formation</p> <p><b>Earth's Atmosphere</b> – Layers, Energetics, Climate Change</p>	<p><b>Optics</b> – Electromagnetism, Reflection, Refraction, Optical Devices</p> <p><b>Electricity</b> – Circuits: Series and Parallel, Electromagnets</p> <p><b>Magnetism</b> – Paramagnets, Induced magnetic fields</p>	<p><b>Genetics</b> – Pedigrees, Inheritance Patterns, Genomes, DNA, Translation, Transcription</p> <p><b>Evolution</b> – Darwin, Mimicry, Camouflage, Natural Selection, Tree of Life</p>