

I. Curriculum Area
 Science

II. Courses

<p>Biology 6200 – Biology 6201 – Biology Honors 6202– Biology Lab 6203 – Applied Biology 6230 – AP Biology 6240 – IBHL Biology 1 6241– IBHL Biology 2 6256– Human Biology 6903- EE Biology 6950- CE Biology 6951- CE Biology Lab</p> <p>Chemistry 6400– Chemistry 6401– H Chemistry 6402- Lab Chemistry 6430– AP Chemistry 6440– CE 1010 Chemistry 6952- CE 1010 Lab Chemistry 6450– CE 1110 Chemistry 6451- CE 110 Lab Chemistry 6460– CE 1120 Chemistry 6461- CE 1120 Lab Chemistry 6470– IBSL Chemistry 1 6471– IBSL Chemistry 2 6480- Organic Chemistry 6904- EE Chemistry</p> <p>Earth 6300 – Earth Science 6301 – Earth Science Honors 6304– Applied Earth Science 6902- EE Earth</p>	<p>Physics 6500 – Physics 6501– H Physics 6502– Conceptual Physics 6510– IB Conceptual Physics 6512– IBSL Physics 6530– AP Physics 1 Algebra 6531- AP Physics 2 Algebra 6532- AP Physics C Mechanics 6533- AP Physics C Electricity 6540- CE Physics 6530– AP Physics 1 6531– AP Physics 2 6540– CE Physics 6905- EE Physics</p> <p>Electives 6250– Wildlife Biology 6252- Microbiology 6254- Ecology 6258– Human Physiology 6260– Genetics 6262- Zoology 6264– Marine Biology 6265- ADV Marine Biology 6266- Aquaculture 6267– Botany 6268- Honors Botany 6269- Botany 2 6270- Ornithology 6271- ADV Ornithology 6272- Forensics 6273– Food Science 6310- Lab Science 9 6320– Geology 6322– Environmental Science</p>	<p>Electives Cont. 6323- Advanced Environmental Science 6324– Meteorology 6326– Astronomy 6327- Astronomy 2 6330– AP Environmental Science 6600- Hacking STEM 6602- Hacking STEM 2 6609- STEM Explorations 6610- Science Investigations MHS 6630- Science Olympiad</p>
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III. Goal Summary Statement

Students in all 9th through 12th grade science courses will demonstrate measurable progress in carrying out scientific investigations. They will design and conduct controlled experiments to test their hypothesis and then communicate significant components of their experimental design and results including the connection between evidence and conclusion.

IV. Full Goal Description

Students in all 9th through 12th grade science courses will demonstrate measurable progress in carrying out scientific investigation of a testable hypothesis based on observations and questions. They will design and conduct controlled experiments to test their hypothesis and then communicate significant components of their experimental design and results including the connection between evidence and conclusion. Students will demonstrate their proficiency in the use of science process and thinking skills by planning and conducting experiments in which they:

- form research questions and testable hypotheses;
- discuss possible outcomes of investigations;
- predict results of investigations based upon prior data;
- identify variables and describe the relationships between them;
- plan procedures to control independent variable(s);
- collect data on the dependent variable(s);
- select appropriate format and use it to summarize the data obtained;
- analyze data, check it for accuracy, and construct reasonable conclusions;
- and communicate the results of their investigations.

In order to demonstrate measurable progress, students will need to plan and conduct a minimum of two content-appropriate scientific investigations during the course of the school year. This may require scaffolding and differentiated instruction. To assess these scientific investigations, educators may utilize the Davis Science Processing Rubric or an educator-designed assessment tool. Students should be assessed on all of these science process and thinking skills; however, they do not necessarily need to be assessed simultaneously.

V. Connection to DESK Standards

The goal of science education is to provide experiences with concepts that students can explore and understand in depth to build a foundation for future science exploration and investigation of phenomena. Science encourages students to gain knowledge through scientific processing and thinking skills: observing, questioning, exploring, making and testing hypotheses, comparing predictions, evaluating data, and communicating conclusions. The Intended Learning Outcomes (ILOs) of the DESK standards describe the skills and attitudes students should learn as a result of science instruction. Educators use the ILOs as the beginning point for planning instruction, where practice of science skills takes place in the context of the DESK standards. Science investigations provide experiences to build from concrete concepts to more abstract understandings, allowing for student growth. Science teaching and learning should encourage students working in cooperative groups and connect lessons with students' daily lives. This requires continuous practice and use of inquiry based instruction by the teacher and the student. The intended learning outcomes develop and build from kindergarten to 12th grade and beyond.

VI. Assessment Tool/Rubric/Evidence

There should be at least a pre- and post-assessment of the goal. It is recommended that the pre-assessment will be performed during the first semester and the post-assessment during the second semester.

-See attached rubric