O'MALEY INNOVATION MIDDLE SCHOOL **SCOPE & SEQUENCE CHART: INTENDED UNITS OF STUDY** (2018/2019)

CONTENT AREA: Science **GRADE LEVEL: 8**

UNIT/ ESSENTIAL QUESTION	APPROX. START TIME	APPROX. END TIME	TEXT/RESOURCES	TARGETED UNDERSTANDING (PURPOSE)	CONTENT STANDARD(S)	PERFORMANCE EXPECTATION
Wind Energy How can wind energy be harnessed?	9/16	10/16	Sail Car Design Program Kid Wind	Differences in air pressure can be used to engineer a solution.	Technology/Engineering 2.1,2.2,2.3,6.4	Sail Day Testing and Essay Kid Wind Challenge
Weather Patterns How can air masses create changes in weather?	9/16	10/16	Prentice Hall Science Explorer Weather and Climate	Unequal heating of Earth's surface produces air pressure differences that result in atmospheric movement.	Earth and Space Science 3,4	Weather and Climate Chapters 1, 2 and 3 tests. Heating Earth's Surface Lab Report
Climate and Change What determines climate?	10/16	10/16	Prentice Hall Science Explorer Weather and Climate Biodiesel Manufacturing Teacher Developed Investigations	The major factors that influence a region's climate are latitude, altitude, distance from large bodies of water,ocean currents, prevailing winds, the presence of mountains and seasonal winds.	Earth and Space Science 3,4,11 Physical Sciences 2,3,4	Bergen Norway Open Response Biodiesel Project
Classification What is the relationship between classification and evolution?	11/16	11/16	Prentice Hall Science Explorer From Bacteria to Plants	Organisms with similar evolutionary histories are classified more closely together.	Life Science 1	Kingdoms Brochure

Genetics How are traits passed from parent to offspring?	11/16	12/16	Prentice Hall Science Explorer Cells and Heredity MIT Lego Fish	Genes controlling traits are carried from parents to offspring on chromosomes.	Life Science 7,8,9	Family Puzzles Lab Super Hero Genetics
Evolution How can we explain the diversity among living things?	1/17	1/17	Prentice Hall Science Explorer Cells and Heredity What Darwin Never Knew -PBS	Genetic variation and environmental factors are causes of evolution and diversity of organisms.	Life Science 10,11,12	Lego Fish Natural Selection Lab Nature at Work Lab Tell Tale Molecules Lab
Properties of Matter How does matter change?	2/17	2/17	Prentice Hall Science Explorer Chemical Building Blocks STC Properties of Matter MIT Lego Atoms and Molecules	Matter changes whenever energy is added or taken away.	Physical Sciences 1,2,3,4,8,9,10,14,15, 16	Just a Phase Lab Report Chemical Building Blocks Chapter Tests
The Periodic Table What predictions can you make knowing an element's position on the periodic table?	3/17	4/17	Prentice Hall Science Explorer Chemical Building Blocks STC Properties of Matter MIT Lego Atoms and Molecules	There are more than 100 elements that combine to produce compounds. These elements and compounds make up all living and nonliving things.	Physical Sciences 5,6,7	Element Tile Project Alien Periodic Table
Bridge Over My Ice Cream Sundae How is scientific knowledge used to solve a problem?	4/17	5/17	Bridge Over My Ice Cream Sundae Teacher Designed Unit West Point Bridge-bridge design and testing software	The forces of tension, compression,torsion, bending and shear affect the performance of a bridge.	Technology/Engineering 1.1,3.2,5.2,5.3,5.4	Bridge Crossing and Video Analysis

Manufacturing What is additive manufacturing?	5/17	6/17	3d Printers Tinkercad software Chromebooks Slic3r applications	Additive manufacturing is the process of joining materials to make objects from 3D model data, as opposed to subtractive manufacturing methodologies.	Technology/Engineering Standards 4.1, 4.2, 2.1, 2.2, 7.1	Final designed and printed project.