Noble Middle School

Our mission is to foster a school with academic rigor supported by excellent instructional strategies. We believe that every student can learn and should be challenged to achieve his/her potential. We strive to ensure that students feel safe in an atmosphere of mutual support, respect, and consideration of the rights of others. Students, staff, parents, and the community of Noble Middle School will work with passion and persistence toward our goals.

Grade 7 Science Year at a Glance

Next Generation Standards Key:

PS=Physical Science **ESS=Earth and Space Science**
LS=Life Science **ETS=Engineering, Technology, and Applications of Science**

Semester 1

Time Duration: September - December	Unit 1: Our Changing Earth	Proficiency in Infinite Campus: Plate Motions and Boundaries Earthquakes and Volcanoes	Next Generation Standards: ESS2-2, ESS2-3, ESS3-2 ETS1-4
Time Duration: December - February	Unit 2: Cells	Proficiency in Infinite Campus: Cells	Next Generation Standards: LS1-1, LS1-2, LS1-6, LS1-7

Semester 2

Time Duration: February-April	Unit 3: Life Over Time	Proficiency in Infinite Campus: Evolution Geologic Time Scale	Next Generation Standards: LS1-4, LS4-1, LS4-2, LS4-3, LS4-6, ESS1-4
Time Duration: April-June	Unit 4: Forces of Energy	Proficiency in Infinite Campus: Newton's Laws of Motion Kinetic and Potential Energy	Next Generation Standards: PS2-1, PS2-2, PS3-1, PS3-2, ETS1-1, ETS1-4

Important Note: Students are expected to be at a Secure in a proficiency by the time the unit assessment has be administered. Assessments are administered the last few days of each unit.

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Unit 1:
Our Changing Earth

Focus Standards

ESS2-2 Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.

ESS2-3 Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.

ESS3-2 Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.

ETS1-4 Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

Unit 2:
Cells

Focus Standards

LS1-1 Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.

LS1-2 Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.

LS1-6 Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.

LS1-7 Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.

Unit 3:
Life Over Time

Focus Standards

LS1-4 Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.

LS4-1 Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.

LS4-2 Apply scientific ideas to construct an explanation for the anatomical similarities and differences among

modern organisms and between modern and fossil organisms to infer evolutionary relationships.

LS4-3 Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.

LS4-6 Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.

ESS1-4 Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history.

Unit 4:
Forces of Energy

Focus Standards

PS2-1 Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.

PS2-2 Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.

PS3-1 Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.

PS3-2 Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.

ETS1-1 Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

ETS1-4 Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.