

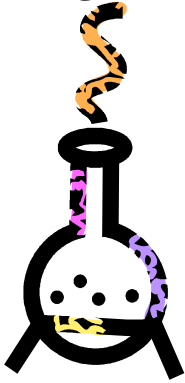
Middlesex County School Curriculum Map

Science 6 2011-2012

Mrs. Rainier

Semester Block

Using 2010 Objectives as they were revised from 2003



Scientific Investigation, Reasoning, and Logic

Time Frame: 5 days (major concepts and vocabulary introduced) this is ongoing all semester)

Sol: 6.1 a-j – The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations.

6.1- Scientific, Investigation, Reasoning, and Logic

- a) Observations are made involving fine discrimination between similar objects and organisms
- b) Precise and approximate measurements are recorded
- c) Scale models are used to estimate distance, volume, and quantity
- d) Hypotheses are stated in ways that identify the independent and dependent variables
- e) A method is devised to test the validity of predictions and inferences
- f) One variable is manipulated over time, using many repeated trials
- g) Data are collected, recorded, analyzed, and reported using metric measurements and tools
- h) Data are analyzed and communicated through graphical representations
- i) Models and simulations are designed and used to illustrate and explain phenomena and systems
- j) Current applications are used to reinforce science concepts

Force, Motion, and Energy

Time Frame: 6 days

Sol: 6.2 a-e

Force, Motion, and Energy- The student will investigate and understand basic sources of energy, their origins, transformations, and uses.

- a) Potential and kinetic energy
- b) The role of the sun in the formation of most energy sources on Earth
- c) Nonrenewable energy sources
- d) Renewable energy sources
- e) Energy transformations

Force, Motion, and Energy

Time Frame: 6 days

Sol: 6.3 a-e

Force, Motion, and Energy- The student will investigate and understand the role of solar energy and in driving most natural processes within the atmosphere, the hydrosphere, and on Earth's surface.

- a) Earth's energy budget
- b) The role of radiation and convection in the distribution of energy
- c) The motion of the atmosphere and the oceans
- d) Cloud formation
- e) The role of thermal energy in weather-related phenomena including thunderstorms and hurricanes

Matter

Time Frame: 8 Days

Sol: 6.4 a-g Matter- The student will investigate and understand that all matter is made up of atoms.

- a) Atoms consist of particles, including electrons, protons, and neutrons
- b) Atoms of a particular element are alike but are different from atoms of other elements
- c) Elements may be represented by chemical symbols
- d) Two or more atoms interact to form new substances, which are held together by electrical forces (bonds)
- e) Compounds may be represented by chemical formulas
- f) Chemical equations can be used to model chemical changes

- g) A limited number of elements comprise the largest portion of the solid Earth, living matter, the oceans, and the atmosphere

Matter

Time Frame: 9 Days

Sol: 6.5 a-f- Matter- The student will investigate and understand the unique properties and characteristics of water and its roles in the natural and human-made environment

- a) Water as the universal solvent
- b) The properties of water in all three phases
- c) The action of water in physical and chemical weathering
- d) The ability of large bodies of water to store thermal energy and moderate climate
- e) The importance of water for agriculture, power generation, and public health
- f) The importance of protecting and maintaining water resources

Time for Benchmark - 45 days (days used- 34 days) Mid- semester Benchmark

Second Half of Semester – Next Exam will be cumulative with all objectives covered on test

Matter

Time Frame: 9 Days

Sol: 6.6 a-f Matter – The student will investigate understand the properties of air and the structure and dynamics of Earth’s atmosphere

- a) Air as a mixture of gaseous elements and compounds
- b) Pressure, temperature and humidity
- c) Atmospheric changes with altitude
- d) Natural and human-caused changes to the atmosphere and the importance of protecting and maintaining air quality
- e) The relationship of atmospheric measures and weather conditions
- f) Basic information from weather maps, including fronts, systems, and basic measurements

Living Systems

Time Frame: 8 Days

Sol: 6.7 a-g Living Systems- The student will investigate and understand the natural processes and human interactions that affect watershed systems.

- a) The health of ecosystems and the abiotic factors of a watershed
- b) The location and structure of Virginia's regional watershed systems
- c) Divides, tributaries, river systems, and river and stream processes
- d) Wetland
- e) Estuaries
- f) Major conservation, health , and safety issues associated with watersheds
- g) Water monitoring and analysis using field equipment including hand-held technology

Earth Resources

Time Frame: 6 Days

Sol: 6.9 a-d – Earth Resources- The student will investigate and understand public policy decisions relating to the environment.

- a) Management of renewable resources
- b) Management of nonrenewable resources
- c) The mitigation of land-use and environmental hazards through preventive measures
- d) Cost/benefit tradeoffs in conservation policies

Interrelationships in Earth/Space Systems

Time Frame: 11 Days

Sol: 6.8 a-i – Interrelationships in Earth/Space Systems - The student will investigate and understand the organization of the solar system and the interactions among the various bodies that comprise it.

- a) The sun, moon, Earth, other planets and their moons, dwarf planets, meteors, asteroids, and comets
- b) Relative size of and distance between planets
- c) The role of gravity
- d) Revolution and Rotation
- e) The mechanics of day and night and the phases of the moon
- f) The unique properties of Earth as a planet
- g) The relationship of Earth's tilt and the seasons

- h) The cause of tides
- i) The history and technology of space exploration

Second half of semester days used: 34 days

Semester Benchmark Test will be cumulative including all objectives covered during the year.