Mackay Elementary School

Grade Level: 5th Grade Date: August 2011

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SUBJECT INFORMATION

Science

COMMON CORE / STATE CONTENT STANDARDS/VOCABULARY OBJECTIVES

- compare & contrast between plant and animal cells.
- dentify the parts of a cell: *cell membrane, nucleus, cytoplasm, vacuoles, mitochondria, chloroplasts, cell wall.*
- identify the processes that take place in plant and animal cells *(photosynthesis, diffusion, osmosis, mitosis, meiosis, regeneration)*
- connect relationships between cell, tissue, organ and system
- understand organisms can be one-celled, or many cells.
- name the stages of incomplete and complete. describe how food is transported in plants.
- compare life cycles of plants and animals.
- explain how people use plants.
- explain the process of photosynthesis
- observe and record plant responses to light and gravity.
- become familiar with reproductive structures in plants and differentiate betweengymnosperms and angiosperms.
- compare different ways plants reproduce.
- recognize how body systems are interdependent.
- describe how the nervous system carries messages throughout the body.
- explain the reproductive system.
- explain how each body system is important to our body.
- recognize matter is anything that has mass and takes up space.
- know that physical properties can be used to identify an object.
- compare the 3 states of matter.
- distinguish between and measure mass, weight, density, and volume of liquids and solids.
- identify changes in state.
- know melting and boiling points.
- compare and differentiate between physical and chemical changes.
- understand matter is neither created or destroyed.
- distinguish between mixtures and solutions.
- separate components of mixtures by solubility and density

- differentiate between element, molecule, and compounds
- identify, locate, and explain the parts of an atom such as: orbit, nucleus, neutrons, electrodes, and protons
- categorize properties of common elements and apply to periodic table
- describe what forces are and what they do
- explain how the forces of friction, magnetism, and gravity act in our everyday lives
- describe balance and unbalanced forces
- compare the effects of balanced and unbalanced forces on moving or stationary objects
- calculate net force when more than one force acts on an object
- define acceleration
- define work and explain how it is measured
- define power and explain how it is measured
- describe what machines do
- demonstrate the use of simple and compound machines
- recognize and describe the relationships among speed, velocity, acceleration, and momentum
- describe how speed, velocity, acceleration, and momentum are measured.
- analyze, explain and apply the three laws of motion.
- describe how inertia and gravity interact to make an orbit.
- explain the law of universal gravitation
- describe potential and kinetic energy.
- provide examples of various forms of energy. *mechanical, thermal, chemical, light, electric, sound, gravitational, elastic)*
- describe the characteristics of light energy and sound energy, including reflection, refraction and concave lenses
- identify and compare the characteristics of light waves and sound waves.
- describe thermal energy.
- explain how thermal energy moves.
- describe chemical energy.
- differentiate between parallel and series circuits.
- differentiate between renewable, reusable and nonrenewable resources.
- identify various natural resources and fossil fuels such as petroleum, coal, and natural gas
- demonstrate and explain processes that change the surface of the earth such as: *weathering, erosion, deposition, mass movement.*
- identify various types of landforms such as: *mountains, volcanoes, glaciers, valleys.*
- identify Earth's parts: *crust, mantle, core, plates.*
- recognize that continental drift is a theory.
- compare Pangea to the world today with fossil movement.
- predict how landforms originated

Vocabulary:

analyze
concept
control
data
evidence
experiment
form and function

hypothesis
inference
investigation
measure metric
model
Observations
predications
procedures
scientific explanation
SI system
Systems
U.S. customary system of measurement
variable
Compounds
Elements
gas
liquids
mixtures
physical change
physical properties
solids
cells
compare and contrast
energy photosynthesis
traits
atmosphere
classification
climate
continental drift
erosion
rock cycle
tectonics
environment
nonrenewable
renewable
technology

INSTRUCTIONAL MATERIALS

Harcourt Science Text Book
Student Edition on
Audiotext (CD)
Transparencies
www.harcourtschool.com/science

Harcourt Science Reader Books
Student Lab and Assessments
Challenge Book
Teacher Resources

UNITS WITH INSTRUCTIONAL DATES

Unit A: Processes of Living Things Chapter 1—Cells, to Body Systems Chapter 2—Classifying Living Things Chapter 3—Plant Growth and Reproduction Chapter 4—Animal Growth and Heredity	**August/September** Identify major body systems and their functions, including the circulatory system, respiratory system, excretory system, and reproductive system.. Identify common parts of plant and animal cells, including the nucleus, cytoplasm, and cell membrane
Unit B: Interactions Among Living Things Chapter 5—Energy and Ecosystems Chapter 6—Ecosystems and Change	**October/November** Identify major body systems and their functions, including the circulatory system, respiratory system, excretory system, and reproductive system Describing the relationship between food chains and food webs
Unit C: Processes that Change Earth Chapter 7—The Rock Cycle Chapter 8—Fossils Chapter 9—Changes to Earth's Surface Chapter 10—Usin g Resources	**November/December** Describing the rock cycle Identify spheres of earth, including the geosphere, atmosphere, and hydrosphere Describing technology used to investigate Earth Examples; sonar, radar, seismograph, weather balloons, satellites
Unit D: Cycles on Earth and in Space Chapter 11—Weather and the Water Cycle Chapter 12—Earth's Ocean Chapter 13—Earth, Moon, and Beyond	**January/February** Compare effects of gravitational force on earth, on the moon and within space. Identify spheres of earth, including the geosphere, atmosphere, and hydrosphere Compare distances from the sun to planets in our solar system.
Unit E: Matter and Energy Chapter 14—Properties of Matter Chapter 15— Energy Chapter 16— Electricity Chapter 17—Sound and Light	**February/March** . Identify evidence of chemical changes through color, gas formation, solid formation, and temperature change Define mass, volume, and density.
Unit F: Forces and Motions Chapter 18—Forces Chapter 19—Motion	**April/May** Identifying types of potential and kinetic energy Contract ways in which light rays are bent by concave and convex lenses

ASSESSMENTS / TESTS

Chapter & Unit Assessments
Student/group projects, reports, presentations, role playing, models, demonstrations
Science fairs/contests
Performance Tasks
Assessments should utilize Grade 5 Level Science ISAT questions

GRADING PROCEDURES

Percentage Values:

99-100—A+	94-98—A	90-93—A-
86-89—B+	83-85—B	80-82—B-
76-79—C+	73-75—C	70-72—C-
66-69—D+	63-65—D	60-62—D-

59↓-- F

*Students will be able to correct errors on homework for additional points to increase their scores

CLASS RULES

Students are expected to arrive prepared for class with homework complete and items required for class.
Students are expected to actively participate in discussions and engage in activities related to class assignments.
Students are expected to treat one another with respect and the same courtesy they need to complete assignments quietly and cooperatively.

MISCELLANEOUS

Active Participation is Essential to Success.
Ask Questions and Challenge Yourself
Syllabus is open to review and changes as needed.

	GRADING PROCEDURES	

	CLASS RULES	

	MISCELLANEOUS	