NORTH MAC MIDDLE SCHOOL
CURRICULUM GUIDE

Teacher Kelly Sonneborn

Grade Level: 6

Course: Earth Science

Course: Aims
1.) Student will understand the concept of the scientific method as a means of inquiry.
2.) Student will understand the rock cycle and characteristics, composition, identification and uses of rocks and minerals.
3.) Student will understand that the surface of the Earth is always changing; students will understand the processes that cause these changes, such as plate tectonics, earthquakes, and volcanoes.
4.) Students will analyze the structure of Earth's atmosphere, understand the water cycle, and identify factors that influence weather.
5.) Students will understand the development of water, currents, waves and tide
6.) Students will explore instruments for collecting data about our solar system, understand the rotation and revolution of the Earth and Moon, understand the makeup of our solar system and be able to describe how stars and galaxy formed.

Course Description Earth Science focuses on the study of earth and space science. The topics covered include: the materials that make up the earth, the changing surface of the earth, earth's internal processes, earth's air and water, astronomy and the scientific method.

Textbook:
Title: Earth Science
ISBN: 078-0-07-877803-2
Authors: Feather, Ralph, PhD, Snyder, Susan, Zike, Dinah
Publisher: McGraw Hill Glencoe
Publication Date: 2008

Assessment
There will be a minimum of 300 points scored each quarter. These points will be obtained from assignments, writing, quizzes, chapter tests, and projects. The points will be distributed from each category from the range of percents given below.

Example

- Assignments/writing 45- 55%
- Quizzes 5 – 15%
- Tests 25 - 35%
- Projects 5- 15%

QUARTER: 1 COURSE: EARTH SCIENCE

Minerals – Students will be able to: 1.) identification and uses of minerals 2.)characteristics all minerals share 3.) how minerals form 4.) describe physical properties used to identify minerals 5.) Identify minerals using physical properties such as hardness and streak 6.)characteristics of gems that make them more valuable than other minerals 7.)identify useful minerals that are contained in minerals	Teacher observation, participation, worksheets, writing, quizzes, chapter tests	MS-ESS2-1, MS-ESS1-4	*What minerals and products made from them do you use every day. *What is a crystal? *How can identifying minerals help you recognize valuable mineral resources. *Why is hardness sometime referred to as scratchability? *When is mineral an ore? *How do fluids move through rocks?	Mineral, crystal, magma, silicate, hardness, luster, specific gravity, streak, cleavage, fracture, gem, ore,
Rocks – Students will be able to: 1.) describe the rock cycle and changes that a rock could undergo 2.) types of rocks 3.)distinguish between a rock	Teacher observation, participation, worksheets, writing, quizzes, chapter tests	MS-ESS2-1, MS-ESS1-4	*What are the 3 types of rocks? *Using the rock cycle as a guide, how are rocks transformed into one another? *What is a rock?	Rock, rock cycle, igneous rock, lava, intrusive, extrusive, basaltic, granitic, metamorphic rock, foliated, nonfoliated, sediment, sedimentary rock,

and a mineral 4.) recognize magma and lava as the materials that cool to form igneous rocks 5.) contrast the formation of intrusive and extrusive igneous rocks 6.) contrast granitic and basaltic igneous rocks 7.) describe the conditions in Earth that cause metamorphic rocks to form 8.) classify metamorphic rocks as foliated or nonfoliated 9.) how sedimentary rocks form from sediments 10.) classify sedimentary rocks as detrital, chemical, or organic in origin			* What controls the grain size of an igneous rock? *What ways are igneous rocks classified? *How can one type of rock change into several different metamorphic rocks? *What type of metamorphic rock is composed of mineral grains arranged in parallel layers? *Why are some sedimentary rocks, like coal, important sources of energy *How do rocks form through compaction? *How do chemical sedimentary rocks form?	compaction, cementation,

QUARTER: 2 COURSE: EARTH SCIENCE

CONTENT	ASSESSMENT	NGSS	ESSENTIAL QUESTIONS	VOCABULARY
Plate tectonics- Students will be able to: 1.) process the hypothesis of continental drift	Teacher observation, participation, worksheets, writing, quizzes, chapter tests	MS-ESS1-4, MS-ESS2-2, MS-ESS2-3, MS-ESS3-2	*How do Mesosaurus fossils support the past existence of Pangaea?	Continental drift, Pangaea, seafloor spreading, plate tectonics, plate, lithosphere, asthenosphere,

2.) identify evidence supporting continental drift 3.) explain seafloor spreading 4.) recognize how age and magnetic clues support seafloor spreading 5.) compare and contrast different types of plate boundaries 6.) explain how heat inside Earth causes plate tectonics			*How does seafloor spreading help explain how continents moved apart? *How does new seafloor form at mid-ocean ridges? *What are some general ways that plates interact? *What happens when seismic energy is released as rocks in Earth's crust break and move? *What features occur where plates converge?	convection current
<u>Chick Embryology</u>	Teacher observation, participation, worksheets, quizzes	Life Sciences	*What is the job of the albumen? *When does the chick take its first breathe? *How long is the incubation period for the chick to develop?	Air cell, albumen, calazae, egg, fertilization, shell, shell membrane, yolk, chick tooth, embryo, incubator, pip, germ spot, blood vessels
<u>Earthquakes</u> – Students will be able to: 1.) explain how earthquakes result from the buildup of energy in rocks 2.) describe how compression, tension, and shear forces make rocks	Teacher observation, participation, worksheets, writing, chapter tests	MS-ESS3-2	*How do earthquakes form? *Why do most earthquakes occur near plate boundaries? *What is a strike-slip fault? *Why do surface waves damage buildings?	Fault, earthquake, normal fault, reverse fault, strike-slip fault, seismic wave, focus, primary wave, secondary wave, surface wave, epicenter, seismograph, magnitude,

convection 6.) explain why different latitudes on Earth receive different amounts of solar energy 7.) describe the Coriolis effect			exosphere or in the troposphere? *How much sun is absorbed by the Earth's surface and atmosphere? *How much sun is reflected back into the atmosphere? *How does the Sun warm your skin? *How can the Sun continue to heat the atmosphere at night? *What are doldrums? *How does a sea breeze form? *Why would it take longer to fly from east to west than it would from west to east?	

QUARTER: 4 COURSE: EARTH SCIENCE

CONTENT	ASSESSMENT	NGSS	ESSENTIAL QUESTIONS	VOCABULARY
Weather - students will be able to: 1.) explain how clouds form and how they are classified 2.) describe how rain, hail, sleet,	Teacher observation, participation, worksheets, writing, quizzes, chapter tests *Cloud project- illustrate 6	MS-ESS2-5, MS-ESS2-6,	*What are the major factors of weather and how do they affect everyday life? *What happens to the water vapor when it	Weather, humidity, relative humidity, dew point, fog, precipitation,

and snow develops 3.) discuss how weather changes affect your daily life 4.)	clouds of choice along with description, altitude, and weather associated *Brochure of one weather disaster. Must have illustrations, facts on safety precautions		reaches the dew point? *How are clouds classified? * What are the three main cloud types? *Why can more water vapor be present in warm air than in cold air?	
Ocean motion	Teacher observation, participation, worksheets, writing, quizzes, chapter tests	MS-ESS2-6, MS-ESS2-4, MS-ESS3-1	*What resources do we obtain from the oceans? *How do waves and tides form? *How do they affect life and property?	Basin, salinity, surface current, Coriolis effect, upwelling, density current, wave, crest, trough, breaker, tide, tidal range
The Sun-Earth-Moon System	Teacher observation, participation, worksheets, quizzes *Build your own rocket then are able to launch at the end of the year	MS-ESS1-1 MS-ESS1-2 MS-ESS1-3 MS-ESS1-4	*Why does the sun seem to rise and set? *What is an ellipse? And why do solar and lunar occur? *What are the phases of the Moon and their cause? * What does the surface of the moon reveal about its history? * differentiate between rotation and revolution.	Sphere, axis, rotation, revolution. Ellipse, solstice, equinox, moon phase, new moon, waxing, full moon, waning, solar eclipse, lunar eclipse, maria, impact basin