DOBBS FERRY MIDDLE SCHOOL
Dobbs Ferry, New York 10522

COURSE OUTLINE

SUBJECT: Earth Science – Honors/Accelerated **GRADE: 8**
Offered: Full Year
Type of Course: Required unless student takes 8th grade General Science

Course Description:

Regents Earth Science is offered to 8th graders in an honors-accelerated class. The course covers the topics of Astronomy, Weather and Climate, and Geology in depth and includes subtopics of hydrology, oceanography, global warming and environmental issues. The course ends with the NYS Regents examination in Earth Science in June.

Anticipated Course Outcomes:

"Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science." (NYSED)
The course also engages the four IB Middle Years Program (MYP) learning Criteria. Criterion A – Knowing & Understanding – through classroom presentations, demonstrations, and evaluations, Criterions B and C – Inquiring & Designing and Processing & Evaluating by means of hands-on lab activities and worksheets, and Criterion D – Reflecting on the Impacts of Science through student-created presentation projects.
Successful completion of the course and a passing score on the Earth Science Regents exam result in one Regents credit on the student's high school transcript.

Basics:

Students will be able to…

- Measure and calculate within the metric system.
- Explain the three basic methods of energy transfer.
- Explain the basic make-up and observable characteristics of matter.
- Explain measure and calculate density.
- Read and interpret graphs and data tables of varying formats.

Major Understandings in Astronomy:

Students will be able to…

- Explain the origin of the universe and creation of our sun and solar system.
- Explain astronomically-based phenomena and/or develop models to describe, test and predict time measurements, the seasons, phases of the moon, eclipses, tides, planetary motion and the Big Bang Theory

Major Understandings in Weather and Climate:

Students will be able to develop models, analyze data, and interpret evidence to:

- Explain multiple weather variables and read and analyze synoptic weather maps.
- Explain the observations of weather patterns, daily and seasonal changes and extreme weather conditions through the use of maps and the concepts of density and the transfer of energy.
- Explain the causes and effects of greenhouse gasses and global climate change.
- Explain the water cycle, the water budget and the movement of water.
- Explain the origin and evolution of the Earth's atmosphere.
- Students will be able to recognize and/or use basic weather instruments.

Major Understandings in Geology:

Students will be able analyze evidence and interpret data to

- Read topographic maps and understand latitude and longitude.
- Explain the arrangement of the layers of the Earth and the forces and agents that have been changing the face of the Earth over time.
- Explain seismology and seismological activity, volcanism and the theory of Plate Tectonics.
- Explain and identify matter (rocks and minerals) from the solid portion of the Earth – by physical means and observable properties.
- Explain the history of the Earth and the geological time scale through the basic concepts of paleontology.

Recommended Course Materials and Supplies:

- Three-ring binder with paper
- Pens, pencils, erasers, basic set of colored pencils
- Scientific or graphing calculator
- Small metric ruler, protractor and compass

Grading Criteria:

- Test = 70 %
- Lab reports = 15 %
- Homework = 15 %

MYP grades are given on a scale of an 8 (highest) to 1 (lowest).