

DOBBS FERRY MIDDLE SCHOOL
Dobbs Ferry, New York 10522

COURSE OUTLINE

SUBJECT: Science 8

GRADE: 8

Offered: Full Year

Type of Course: Required unless student takes honors/accelerated Earth Science

COURSE DESCRIPTION:

This course covers the basic concepts within **Astronomy, Weather and Climate, Geology** and **Chemistry**. It is the final academic year of the NYS Intermediate Level Science Core Curriculum sequence. The students will take the NYS 8th Grade Science Exam given towards the end of the school year. The course accommodates the following NYSED standards:

Standard 1 - “Students will use mathematical analysis, scientific inquiry, and engineering design, as appropriate, to pose questions, seek answers, and develop solutions.”

Standard 4 – “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.

Standard 6 - “Students will understand the relationships and common themes that connect mathematics, science, and technology and apply the themes to these and other areas of learning.”

Standard 7 - “Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions.”

ANTICIPATED OUTCOMES:

By June of this year, students in this class will be able to do the following:

During the course, students will use these Process Skills based on Standard 4:

1. Follow safety procedures in the classroom and laboratory
2. Safely and accurately use the following measurement tools:
 - metric ruler
 - balance
 - stopwatch
 - graduated cylinder
 - thermometer
3. Use appropriate units for measured or calculated values
4. Recognize and analyze patterns and trends
5. Classify objects according to an established scheme and a student-generated scheme
6. Develop and use a dichotomous key
7. Sequence events
8. Identify cause-and-effect relationships

During the course, students will perform the following Physical Setting skills:

1. Indicate a position on a map given the latitude and longitude. Determine the latitude and longitude of a given location on a map.
2. Use identification tests and a flow chart to identify mineral samples.
3. Use a diagram of the rock cycle to determine geological processes that led to the formation of a specific rock type.
4. Plot the location of recent earthquake and volcanic activity on a map and identify patterns of distribution.
5. Use a magnetic compass to find cardinal and ordinal directions.
6. Measure the angular elevation of an object, using appropriate instruments.
7. Interpret field maps including topographic and weather maps.
8. Predict the characteristics of an air mass based on the origin of the air mass.
9. Identify and measure weather variables such as wind speed and direction, relative humidity, barometric pressure, etc.
10. Determine the density of liquids, and regular- and irregular-shaped solids.
11. Determine the volume of a regular- and an irregular-shaped solid, using water displacement
12. Use the periodic table to identify an element as a metal, nonmetal, or noble gas.
13. Determine the identity of an unknown element, using physical and chemical properties
14. Use appropriate methods to separate the parts of a mixture.

MATERIALS:

- Three-ring binder with paper and spiral bound notebook
- Pens, pencils, erasers, basic set of colored pencils
- scientific or graphing calculator
- small metric ruler, protractor and compass

CRITERIA FOR ASSESSMENT:

- Test = 60 %
- Lab reports = 25 %
- Homework = 15 %

Outline developed by: Science Department

Date: Spring 2016