COURSE PROFICIENCY OUTLINE

EARTH-SPACE SCIENCE - 382
College Prep 5 Credits

Purpose

Earth-Space Science - 382 is offered for the large majority of students whose previous achievement and aptitudes indicate standard strengths in science, reading, writing and mathematics. Using a systems approach, this course introduces the four branches of Earth Science: Astronomy, Oceanography, Geology and Meteorology, while integrating physical science topics related to Earth Science. Classroom laboratory investigations, collecting, cataloging and interpreting data and drawing conclusions form an important portion of the course work.

I. Student Outcomes 5.1, 5.2, 5.8, 5.9, 5.10

A. Students will demonstrate an understanding of the terminology, facts, concepts and applications of earth-space learning and materials and of the other sciences as related to the course content.

B. Students will demonstrate the ability to utilize science learning and materials in everyday life and in the further study of science.

C. Students will demonstrate an understanding of science and technology and the interrelationships of humankind, resources, energy and the environment.

D. Students will improve their competencies in science critical thinking skills, study and learning skills, reading, writing and listening skills, and laboratory and investigative skills.

II. Content 5.1, 5.2, 5.3,5.4, 5.6, 5.7, 5.8, 5.9, 5.10

A. The physical universe

1. Outer space and the galaxies
2. The Solar System
3. Space exploration and large distances
4. Physical principles relating to astronomy-light, time, motion, communication

B. Physical forces and our atmosphere

1. Tools of the meteorologist
2. Physical principles relating to meteorology-gasses, instrumentation
3. The atmosphere, winds, pressure, water and the Hydrologic Cycle, precipitation
4. Weather maps, interpretation and prediction
5. Climate and our earth, practical applications and environmental factors

C. Fresh water and our oceans

1. Surface water above and below our earth's surface
2. Fresh water as a limited resource and environmental factor

3. Ocean waves, currents, beaches and our shoreline
4. Ocean water composition
5. The ocean and our food chain, environmental concerns

D. The Earth's structure and forces of change
1. Rocks and minerals
2. Metrics, measurement, density
3. Basic atomic concepts and chemistry of the earth
4. Constructional and destructional forces affecting our earth's crust
5. Plate tectonics and effects on the earth's crust
6. Volcanoes, earthquakes, mountains
7. Topographic maps, interpretation and applications
8. Geologic time and fossils

E. Resources and our environment
1. Renewable and nonrenewable resources
2. Energy resources and alternate energy sources
3. Overview of environmental concerns and local issues

F. Career development, science-related careers and opportunities
1. General principles of career education - attitudes, work habits and competencies.

2. Career information related to all of the sciences, careers in science and careers utilizing science technology.

III. Activities and Materials

A. Text - Feather/Snyder - Glencoe Earth Science

B. Classwork
1. Lectures, note-taking, discussions, demonstrations, audio-visual materials and regular tests and quizzes will be utilized.
2. Basic skills such as reading, writing, math, listening, information processing and science learning will be stressed along with use of technology.

C. Laboratory activities - developing a safety attitude
1. Measurement activities and interpretation of graphic information.
2. Studies of basic principles from all of the sciences and their applications to the course content.
3. Studies of rocks and minerals - testing, classifying and identifying.
4. Studies of maps, map interpretation and topography.
5. Studies involving science critical thinking skills.

D. Assignments - to be carefully checked and reviewed by the teacher and students and to include stress on the skills of reading, writing, and science organization and thinking.

1. Readings - text and other sources, outlining and the organization of information

2. Written answers to questions

3. Laboratory and other reports utilizing varying techniques and methods
4. Science study-learning assignments commensurate with the level of instruction expected for this homogeneous group in which the student is placed.

IV. Evaluation

A. Students will bring needed materials to class and be ready to work for the full class period.

B. Students will complete classwork and homework learning assignments, laboratory work and reports on time, and make up missed work as specified by the teacher.

C. Students will demonstrate a level of proficiency commensurate with the homogeneous group expectations for this course. The evaluation of student outcomes shall consist of tests, quizzes, written assignments and reports, lab reports, and the teacher's regular observations of student involvement and achievement in classroom and laboratory activities.

D. Students will take a comprehensive final examination. This exam will count as 20% of the final grade.

E. The final grade represents the teacher's professional judgment of the student's performance and all of the aforementioned activities and/or requirements are included in the evaluative process.

Teachers in every discipline will include opportunities wherein students will reinforce writing skills through homework assignments, classwork activities, and special assignments (reports) if required, by writing in complete sentences, using correct spelling and punctuation.

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