

**COURSE TITLE****EARTH SCIENCE****CURRICULUM****COURSE DESCRIPTION**

Earth and Space Science I is a course focused on the following core topics: study of the earth's layers; atmosphere and hydrosphere; structure and scale of the universe; the solar system and earth processes. Students analyze and describe Earth's interconnected systems and examine how Earth's materials, landforms, and continents are modified across geological time. Instruction should focus on developing student understanding that scientific knowledge is gained from observation of natural phenomena and experimentation by designing and conducting investigations guided by theory and by evaluating and communicating the results of those investigations according to accepted procedures.

- Recommended Grade Level: 9-10
- Credits: A two credit course
- Counts as a Science Course for the General, Core 40, Core 40 with Academic Honors and Core 40 with Technical Honors diplomas

**COURSE OBJECTIVES**

Science instruction must provide for all students the opportunity to:

1. Learn science as a process that produces a changing body of knowledge,
2. Experience science as a process through frequent hands-on laboratory activities,
3. Understand the key concepts, principles, and themes of science,
4. Learn of career possibilities in science and science-related fields,
5. Recognize how science and technology affect individuals, societies, and their environments, and use this information to make responsible decisions,
6. Use their natural curiosity and sense of wonder to explore natural phenomena,
7. Develop the foundation required for them to pursue employment and participate in continuing education opportunities in order to advance their general education and enhance their job skills, and
8. Use an understanding of science to enhance their personal lives.

**ESSENTIAL QUESTIONS:**

1. How does the dynamic geo-sphere recycle material? What Earth processes are involved in creating rocks?
2. How do geologists classify rocks?
3. How do humans depend on the different types of rocks and minerals?
4. How do processes of weathering, erosion and deposition create characteristic features?
5. How do the processes of weathering, erosion and deposition lead to soil development?
6. How do the different spheres (atmo-, geo-, hydro-, bio-, exo-) interact to create the different types of ocean motion?
7. How do humans affect water quality and how are humans affected by water quality?
8. How can an understanding of oceanography help people make good decisions regarding water quality, resource use, and safety?
9. How do the different spheres (atmo-, geo-, hydro-, bio-, exo-) interact to create the dynamic systems of weather and climate?
10. How does energy flow through the atmosphere/weather/climate system and how does the system change as a result of this energy flow?
11. How do measurable atmospheric condition work together to create what we call weather?
12. How have scientists (geologists) used the scientific method to learn about Earth's internal structure and how Earth's interior affects its surface?
13. How do the relative motions at plate boundaries create the characteristic features found there?
14. Why do we find igneous and metamorphic rocks where we do?
15. How have scientists used the scientific method to learn about Earth's history?