**Charleston Catholic High School**

**Teacher:  Tonya Erby             Subject:    Earth Science                   Total Time: 26 days**

Essential Question: What are the physical variations between the 6 classes of minerals? Furthermore, how does the way in which the atoms are arranged affect the physical characteristics of the mineral? Color, durability, etc…

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| **ELA Goals** | **Lesson Title** | **Skills and Activities** | **Assessments** | **Resources** | **Time** |
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|  SC 0.8.2.010.8.2.110.8.3.010.8.3.030.8.3.040.8.2.120.8.2.130.8.1.08   | Describe & differentiate the classes of minerals based upon the elements possessed. |  Read Chapter 3 (Atoms, Elements and Minerals)Prelab: Characteristics of MineralsReview exercise: Safety in the lab with chemicals (HCl, Glass slab, etc..)Class Discussion: Classes of Minerals: Similarities & Differences Lab: Mineral Composition Lab: Atomic ModelsStudents will compare physical characteristics of selected minerals.Students will construct an atomic model of a mineral.Students will compare/ contrast physical make up of selected minerals. |  Lab Reports: Mineral Characteristics Lab: Graphing Exercise: How does depth affect Mineral Formation? Pop-quiz: Classification of Minerals |  TextbookInternetSmart boardLaboratory equipmentDVDGraph Paper |  13 days |
|    SC .0.8.2.010.8.2.110.8.2.130.8.1.08  | Differentiate an atom from an element from a compound. | Reinforcement lab: Identification of minerals based upon physical characteristics.Students will end with a discussion pertaining to how an evaporate such as salt (Halite) is produced.Class discussion: From an Element to a Compound to a Mineral.Review exercise: SafetyLab: Formation of Crystals: Salt Students will compare / contrast an element and a compound. What part does the “atom” control?Virtual lab: Geology.about.com | Lab Report: Formation of SaltPop-quiz: Elements & Compounds | Textbook Smart boardLab equipment | 6 days |
|   0.8.2.130.8.1.080.8.2.120.8.2.01  | Identify the building blocks of matter . | Review Chapter 4 (Atoms, Elements & Minerals)Film: Periodic TableFilm: Bohr’s Model and DefinitionReview exercise: Safety in the labStudents will diagram subatomic particles of an atom. |  Lab Report: The Periodic TableEssay: Description of the Atom.Pop-quiz: Periodic TableLab test & Written test: Mineral composition, characteristics, and identification. | TextbookInternetSmart boardDVDToothpicks Clay |  7 days |
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CSO Plus One: Gain basic knowledge pertaining to atoms, elements, compounds and minerals. Recognize that the mineral characteristics are dependent upon the atomic arrangement of elements and compounds. Differentiate a physical bond and a chemical bond.

Formative Assessments: Several pop-quizzes covering each topic: Atoms, Elements, Compounds, and Minerals.

Summative Assessments: One summative test as well as one summative laboratory test. The summative test is worth 50 points, the lab test is worth 25 points.

 Nonfiction Selections: McGraw Hill “Earth Science” textbook

Essential Unit Vocabulary: Atom, Mineral, Element, Compound, Chemical bond, proton, electron, neutron, and physical characteristic.

Instructional Resources: Textbook, Smart board, Internet, Mineral Samples, Lab reports, DVD.

Cross Curricular:

Math: Creating graphs of mineral composition.

Theology: Recognizing that God has created a multitude of matter.

Technology: Utilize the computer for atomic model diagrams.

Visual Arts: Create diagrams of an atomic model based upon the Bohr model.

Hyperlinks: geology.about.com, Earth Revealed: Minerals (available on youtube), chemistry.com