Groton Public Schools
Curriculum Map

INTRODUCTION

Course Title: Science 9-10
Curriculum Area and Grade:

Course Purpose:
To Teach Special Education Students Foundational Skills in the Area of Earth Science. Science 9-10 will be based on the high school Earth and Space Science. This course will have a variety of learning experiences including discussion and hands on will be emphasized.

Major Learning Goals and Understandings:
Student Learning Expectation(s): **Learning Sequence 1: Intro to Studying the Earth:** ● Fields of Earth Science ● Understanding Maps ● Exploring Earth's Surface ● Describing the Earth **Learning Sequence 2: Weathering and Soil Formation** ● Rocks and Weathering ● How Soil Forms ● Earth's Changing Surface ● Erosion

Learning Sequence 3: The Earth Atmosphere

- Layers of the Atmosphere
- Weather and Climate
- Clouds and Wind

Learning Sequence 4: The Earth's Water

- The Water Cycle
- Properties of Salt Water
- Properties of Fresh Water

Year 2

Learning Sequence 5: Forces in the Earth

- Plate Tectonics
- Earthquakes
- Volcanoes

Learning Sequence 6: Minerals and Rocks

- Identifying Minerals
- Physical Properties
- Common uses
- Rock Types
- Rock Cycle

Learning Sequence 7: The Earth and Moon System

- Gravity
- Earth's Movement in Space
- Moon's Movement in Space
- Moon's Surface

Learning Sequence 8: The Solar System

- Objects in the Solar System

- Inner Planets
- Outer Planets
- Stars and Galaxies

Units/Theme/Concept and # of Weeks Quarter = 9 weeks, Semester=18 weeks, Trimester= 12 weeks, Year=36 weeks --- usually spread over 40 weeks	
1. Learning Sequence 1 Quarter 1 (1st year)	2. **Learning Sequence 2 Quarter 2 (1st year)**
3. Learning Sequence 3 Quarter 3 (1st Year)	4. **Learning Sequence 4 Quarter 4 (1st year)**
5. Learning Sequence 5 Quarter 1 (2nd Year)	6. **Learning Sequence 6 Quarter 2 (2nd year)**
7. Learning Sequence 7 Quarter 3 (2nd Year)	8. **Learning Sequence 8 Quarter 4 (2nd year)**

Mappers/Authors:
Date Approved:

Part 1 - Unit/Theme/Concept			
Grade: 9-10	**Subject:** **Learning Sequence 1: Intro to Studying the Earth:** ● Fields of Earth Science ● Understanding Maps ● Exploring Earth's Surface ● Describing the Earth **Learning Sequence 2: Weathering and Soil Formation** ● Rocks and Weathering ● How Soil Forms	**Course:** Earth Science	**Length of Unit:** (# of weeks) 2 years

	• Earth's Changing Surface • Erosion **Learning Sequence 3: The Earth Atmosphere** • Layers of the Atmosphere • Weather and Climate • Clouds and Wind **Learning Sequence 4: The Earth's Water** • The Water Cycle • Properties of Salt Water • Properties of Fresh Water **Year 2** **Learning Sequence 5: Forces in the Earth** • Plate Tectonics • Earthquakes • Volcanoes **Learning Sequence 6: Minerals and Rocks** • Identifying Minerals • Physical Properties • Common uses • Rock Types • Rock Cycle **Learning Sequence 7: The Earth and Moon System**		

	• Gravity • Earth's Movement in Space • Moon's Movement in Space • Moon's Surface **Learning Sequence 8: The Solar System** • Objects in the Solar System • Inner Planets • Outer Planets • Stars and Galaxies		

Common Core State Standards
Supporting Standards
Connecticut State Standards

Part 2 – Standards		
Key (GLE) Content Knowledge and Concepts/Skills		**Bloom's Taxonomy Levels** Creating, Evaluating, Analyzing, Applying, Understanding and Remembering
The students will know: 1. Learn about the Earth/Rocks/Atmosphere/Weather/Forces in the Earth.	The students will be able to: 1. Identify Earth Science vocabulary and answer questions about each subtopic. 2. Students will be able to show knowledge of each section through answering questions, taking tests, and writing down vocabulary for each section.	We will use most levels of Bloom's Taxonomy in all units for a variety of understanding.

7 & 8. The Solar System	3. **Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.** [Clarification Statement: Emphasis is on how the appearance of land features (such as mountains, valleys, and plateaus) and sea-floor features (such as trenches, ridges, and seamounts) are a result of both constructive forces (such as volcanism, tectonic uplift, and orogeny) and destructive mechanisms (such as weathering, mass wasting, and coastal erosion).] [*Assessment Boundary: Assessment does not include memorization of the details of the formation of specific geographic features of Earth's surface.*] **Developing and Using Models** Modeling in 9–12 builds on K–8 experiences and progresses to using, and developing models to predict and show relationships among variables between systems and their components in the natural and designed world(s). ● Use a model to provide information for all to understand. Communicate scientific ideas (e.g. about phenomena and/or the process of development and the design and performance of a proposed process or system) in multiple formats (including orally, graphically, textually, and mathematically). See NGSS Standards.	We will use most levels of Bloom's Taxonomy in all units for a variety of understanding.

Big Idea and Essential Questions

- **Big Ideas: Earth Science, Weathering and Rocks, Atmosphere, Water Cycle, Solar System, Forces of the Earth.**

- **Essential Questions. The students will be able to explain, discuss, work collaboratory, work in groups and individually to learn Earth Science,**

Part 3 – Common Unit Assessments

Includes description of what students must produce/perform as indicators of mastery of this unit. Either **literacy** (reading, writing, listening, speaking, viewing and presenting) or **numeracy skills** should be required in the task. Students should apply age-appropriate content-specific technologies and **technology applications**. Assessments must be common to teachers of this unit.

Concept maps- being able to understand and read maps.
Formative assessments- discussions in class, answering of questions to go along with the reading.

Summative assessments- Chapter/unit tests after each section.
Oral presentations- Students will be able to state in front of the class about diffe cycles in Earth Science, Planets, Solar System, etc.
Written report- Students will be able to write down information about the Solar System and Planets while being about to discuss them.

Part 4 – Common/Assured Learning Experiences

Students will Read sections of Science together, answer questions that go along with the section, and write down vocabulary in a Vocabulary book (either hard copy or on the computer). They will take a Unit Test when the sections are complete. Each Unit will have a project with some being visual (Google Slides etc.) or oral presentations. Discussion is the key to most sections to make the understanding is there from each participant. Students will draw pictures of different sections (Water Cycle, solar systems, galaxies, etc.) and be able to explain what is happening in their drawing.