

**Groton Public Schools
Curriculum Map**

INTRODUCTION

Course Title: General Science
Curriculum Area and Grade: Grades 11-12

Course Purpose:

To Teach Special Education Students Foundational Skills in the Area of General Science.

Major Learning Goals and Understandings:

Student Learning Expectation(s):

Learning Sequence 1: The Basic Unit of Life

- Plant Cells
- Animal Cells
- Cell Functions
- Basic Life Activities

Learning Sequence 2: Organizing Living Things

- Living and Nonliving things
- How organisms are classified
- Classifying Animals

- Photosynthesis and Respiration
- Cell Division
- How Plants are Classified
- Seed Plants
- Seedless Plants

Learning Sequence 3: Genetics

- Mendel's Work (Pea Plants)
- Heredity
- Chromosomes
- The Cell and Inheritance
- Human Genetic Disorders

Learning Sequence 4: Human Body System

- Bones, Muscles, and Skin
- Food and Digestion
- Food and Energy
- Circulation
- Respiration and Excretion
- Nervous System, Endocrine System
- Fighting Disease

Year 2: General Science:

Learning Sequence 5: The Metric System

- How Scientist Measure
- Metric Units to Measure Length
- Volume
- Mass
- Scientific Method

Learning Sequence 6: The Structure of Matter

- Properties of Matter (Solid, Liquid, Gas)
- States of Matter and how they can change
- Gas Behavior
- Chemical/Physical Change

Learning Sequence 7: Elements and the Periodic Table

- Introduction to Atoms
- Organizing Elements
- Periodic table
- Metals/No- Metals/Metalloids
- Compounds and Molecules
- Symbols

Learning Sequence 8: Chemical Interactions

- Acids, Bases, and Solutions
- Chemical Reactions
- Atoms and Bonding
- Carbon Chemistry

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: 11-12	Subject: Learning Sequence 1: The Basic Unit of Life <ul style="list-style-type: none"> ● Plant Cells ● Animal Cells ● Cell Functions ● Basic Life Activities Learning Sequence 2: Organizing Living Things <ul style="list-style-type: none"> ● Living and Nonliving things ● How organisms are classified ● Classifying Animals ● Photosynthesis and Respiration ● Cell Division 	Course: General Science	Length of Unit: (# of weeks) 2 years

- How Plants are Classified
- Seed Plants
- Seedless Plants

Learning Sequence 3: Genetics

- Mendel's Work (Pea Plants)
- Heredity
- Chromosomes
- The Cell and Inheritance
- Human Genetic Disorders

Learning Sequence 4: Human Body System

- Bones, Muscles, and Skin
- Food and Digestion
- Food and Energy
- Circulation
- Respiration and Excretion
- Nervous System, Endocrine System
- Fighting Disease

Year 2: General Science:
Learning Sequence 5: The
Metric System

- How Scientist Measure
- Metric Units to Measure Length
- Volume
- Mass
- Scientific Method

Learning Sequence 6: The
Structure of Matter

- Properties of Matter (Solid, Liquid, Gas)
- States of Matter and how they can change
- Gas Behavior
- Chemical/Physical Change

Learning Sequence 7: Elements
and the Periodic Table

- Introduction to Atoms
- Organizing Elements
- Periodic table

	<ul style="list-style-type: none"> ● Metals/No-Metals/Metalloids ● Compounds and Molecules ● Symbols <p>Learning Style 8: Chemical Interactions</p> <ul style="list-style-type: none"> ● Acids, Bases, and Solutions ● Chemical Reactions ● Atoms and Bonding ● Carbon Chemistry 		
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Common Core State Standards: See NGSS Standards for 9,10,11th grade
Supporting Standards: See NGSS Standards for 9,10,11th grade
Connecticut State Standards: See NGSS Standards for 9, 10, 11th grade

Part 2 – Standards		
Key (GLE) Content Knowledge and Concepts/Skills		Bloom’s Taxonomy Levels
The students will know:	The students will be able to:	Creating, Evaluating, Analyzing, Applying, Understanding and Remembering
1. Basic Unit of Life, Classifying living things, Genetics,	1. Identify General Science vocabulary and answer questions about each subtopic.	1. Understanding and Remembering, Applying

The Human body, The Metric System, Matter, Periodic Table, Chemical Interactions		
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Big Idea and Essential Questions

- **Big Ideas: How does General Science impact our lives everyday.**
- **Essential Questions:**
 - What are the basic building blocks of life?
 - How is Earth Science connected to Biology and Chemistry?

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.

Authentic assessment
Concept maps
Formative assessments
Portfolio / rubric
Self-assessment
Peer assessment

Summative assessments
Oral presentations/rubric
Written report/rubric
Performance assessment/rubric
Case study/ seminar/ mathematical thinking/ rubric

Part 4 – Common/Assured Learning Experiences

Includes a description of what all students will have experienced in this unit district-wide, such as critical projects, readings, field trips, or experiments. Learning activities must: promote higher order thinking, use learning and technology, and respect learner differences.

The effective teaching strategies and 21st century learning skills listed below should be used as a reference when developing the common assured learning experiences. After completing the descriptions of the learning experiences, please check the appropriate boxes.