General Science Course Overview

Content Area: **Science**
Course(s):
Time Period:
Length:
Status: **Published**

School Mission Statement

The mission of Chartertech is to provide artists the opportunity to blend principles of artistic expression with cutting-edge technology, so artists will excel in academic, career, and civic pursuits and contribute to the harmony and productivity of the 21" century.

Artistic integration: Performing arts will be accessible to all artists as a skill and content area and will serve as a vehicle for imparting, enlivening, and motivating excellence in all academic topics, as well as providing a platform for learning multicultural appreciation and empathy, not just tolerance.

Technological integration: Technology will serve as the foundation for instructional delivery systems leading to knowledge acquisition, concept understanding, and skill mastery in all academic subjects. Technology will not be studied as a separate entity but infused into the very fabric of educational pursuits, exactly as it occurs in the business world. Artists will be prepared to compete in the modern workplace or post-secondary institution.

"Education has always been torn between vocational and utilitarian purposes on one hand and creative and holistic purposes on the other... We are rapidly entering a world that is hard to imagine. By developing the problem-solving skills, creativity, and discipline required in the arts, artists can prepare for life in the 21st century."

From Understanding How the Arts Contribute to Excellent Education

National Endowment for the Arts, 1991

School Goals

Goals for Arts Education:

Artists will learn the knowledge, skills, and abilities necessary to turn their passions and gifts in the arts into vocations or serious avocations.

Objective 1: Each year, each artist will take two semesters (10 credits) of career-oriented training (80 minutes per day) in their artistic major.
Objective 2: Each marking period, each artist will perform or produce frequently, in diverse settings and for diverse audiences.

Objective 3**:** Artistic instruction will be integrated into the study of all academic subjects.
Objective 4: Each year, each artist will complete at least twenty after-school "lab" hours in their artistic major. These will constitute career-oriented service to the school and/or community, and demonstrate accomplishment of the NJCCCS crosscutting workplace readiness standards.

Goal for Technology:
Chartertech will model the technology-intense workplace and artists will be able to compete successfully and perform well in a technology-intense workplace.

Objective 5: Each artist will routinely use technology in a workplace-like manner to acquire, analyze, communicate, and present information in every subject.
Objective 6: Each artist will have access to a computer every day, every class so that automated sources will be the main conduit for educational content.
Objective 7: All administrative and instructional functions of the school will be supported by the most modern technology available.

Goals for Academic Achievement:
Artists will apply themselves in the serious pursuit of knowledge and skills, especially skills in critical thinking, problem solving, decision making, and communication.

Objective 8: Each year, and to be promoted to the next grade each artist will pass five credits in English, Health, Social Studies, Science, Mathematics, and PE/Health. Between grades 9-12 artists will also complete 1year of Spanish.

Objective 9: In each academic subject, each year, each artist will complete a significant project that involves critical thinking, problem solving, decision making, and communication skills, and which demonstrates cross-content workplace readiness skills.

Objective 10: Each year artists will develop a artist resume to guide his/her academic and artistic studies and to document his/her academic and artistic accomplishments. This work will be done under the mentorship of the faculty in the artist's artistic major.

Objective 11: Academic instruction in all subjects will be highly cross-curricular, in accordance with curricula design and continuously improved by teachers, in compliance with the New Jersey Artist Learning Standards.

Course Description

8th grade science

Course Title:	General Science and Honors General Science
Department:	Science
Prerequisite:	8th grade science
Number of Credits:	5
Grade Level(s):	9th

Standards:	Aligned to NJSLA Science Standards
Description of Course	This course is designed as a comprehensive and interdisciplinary introduction to Earth and Physical Sciences for 9th-grade students. Fully aligned with the New Jersey Student Learning Standards for Science (NJSLS-S), it also helps prepare students for success on state science assessments. Students will explore core scientific concepts through real-world applications, hands-on experiments, virtual simulations, and collaborative projects. Emphasis is placed on developing critical thinking, quantitative reasoning, and scientific communication skills. The curriculum incorporates the principles of scientific inquiry and engineering design, enabling students to design experiments, analyze data, and model phenomena. Students will also connect scientific concepts to their artistic disciplines, examining how physical science and the behavior of matter influence their creative work. Arts integration is emphasized through project-based learning, performances, and reflective presentations, fostering creativity and reinforcing content mastery across both academic and artistic contexts.

Overview & Pacing

Unit #	Major Content	Expected Time
Unit I: Scientific Methods and Measurements	a. Experimental Process b. Metric system c. Measurement	10 Instructional Days
Unit II: Meteorology	a. Weather b. atmosphere c. Formation of storm systems d. Climate Climate change	15 Instructional Days
Unit III: Composition of Earth	a. Rocks b. Minerals c. Rock Cycle	15 Instructional Days
Unit IV: The Dynamic Earth	a. Plate Boundaries b. Techtronic plate movement c. Volcanoes d. Earthquakes Mountains	15 Instructional Days
Unit V: Geologic Time	a. Geologic Time b. Dating methods c. Fossils Earth's History	15 Instructional Days
Unit VI: Beyond Earth	a. Planetary interactions b. Big Bang c. Studying Space	15 Instructional Days

Unit VII: Motion in One Dimension	a. Speed b. Time c. Velocity Acceleration	15 Instructional Days
Unit IIX: Newtons Laws	a. Newtons 2nd Law b. Balanced and unbalanced forces Friction	15 Instructional Days
Unit IX: Momentum and Collisions	a. Momentum equation b. Inertia c. Impulse Conservation of momentum	15 Instructional Days
Unit X: Waves and Sound	a. Wave movement b. Types of waves c. Interference Sound vibrations	15 Instructional Days
Unit XI: Electric Charges and Flows	a. Positive, negative, neutral charges b. Electrons c. Electric force fields Current electricity	15 Instructional Days
Unit XII: Magnetism	a. North and south poles b. Magnetic fields	15 Instructional Days