



ENVIRONMENTAL LITERACY

Example of New High School Curriculum Map with Proposed Course Additions: Green Studies and Sustainability Curriculum Proposals

New Rochelle High School

Alan Gardner
Valerie Stecher

Joyce Kent
Kevin McIvor

We are not here to curse the darkness, but to light the candle that can guide us through that darkness to a safe and sane future.

John F. Kennedy

Introduction

The excerpt below is included in a bill currently being proposed to the New York State Assembly by Representative Adam Bradley of Westchester County and was co-authored by Katie Ginsberg who serves as the executive director of CELF (Children's Environmental Literacy Foundation) based in Chappaqua, NY. The statement succinctly and concisely describes the need for implementation of a sustainability program within schools and integration of concepts related to sustainability into curricula at all levels. This document was the main inspiration that led to the development of this curriculum proposal for New Rochelle High School.

...the best argument for implementing sustainability education in our children's schools is that it will free them from the destructive habit of pitting nature against people and of ignoring the ethical precept that everyone has an equal right to a clean and safe environment. This proposed model curriculum for sustainability education takes into account all the assets, or forms of wealth, that provide the means for our livelihoods. It encompasses the many dimensions of well-being that matter to us, and embraces the full range of activities by which we derive well-being from the assets at our disposal.

Sustainability education provides the only feasible solution to environmental degradation and economic injustice. Not only will sustainability instruction sharpen analytical and critical thinking skills, but will foster an intergenerational ethic among students, one that combines a sense of gratitude towards those who preceded us, with a sense of responsibility to those that will follow. This ethic entrenches a deep commitment by our children to the well-being of present and future generations by embracing the goal of protecting the environment because of that fundamental recognition that the fates of humans and the natural world are inextricably woven together.

BILL NO A03726, sponsored by NYS Representative Adam Bradley

GSS – Regents Sequence

Green Studies and Sustainability

NRHS

Integration of Sustainability in to Courses Required for Graduation

- Provides Exposure to Sustainability Issues to All Students
- Links Science, Social Studies, and Health to Sustainability

Living Environment (Regents)

Earth Science (Regents)

Global History 9

Global History 10 (Regents)

American History 11 (Regents)

Health

Green 9 Team (optional)

Sustainability Seminar 10 (¼ Credit)

Sustainability Seminar 11 (¼ Credit)

Green PPT 12 Project Portfolio Internship (½ Credit)

Environmental, Economic, or Social Activism Club
(Participation and/or Leadership - 2 Years Required - P/F)

Fix-It Make-It Can-It Club

GSS Electives – Students must Complete 4 Credits

Science

History

History

History

Art

Green Chemistry (Regents Option)

AP Env Sci or Env Sci

Bioethics

Food Sci

Astronomy

Gardening (Summer)

Government

Facing History

Public Policy

Economics

Entrepreneurship

World Development Goals

AP Economics Government World European

Architecture and Drawing Production or CADD

Architecture Presentation

Architecture Design

City Dynamics and Urban Planning

AP Art History

GSS Course Offerings

The Green Studies and Sustainability (GSS) sequence follows the Research program model for direct course work and employs existing courses of study to create a meaningful pathway for choice of high school courses. As well, four new elective courses and one club activity should be added to offerings to cover the spectrum of topics included in the field of Sustainability.

Existing Courses

Living Environment
 Earth Science
 Global History 9/10
 American History
 Health
 Bioethics
 Food Science
 Astronomy
 Environmental Science
 AP Environmental Science
 Government
 Economics
 Facing History
 Practicum in Public Policy
 Entrepreneurship
 AP Economics
 AP Government
 AP European History
 AP World History
 Architecture and Drawing
 Architecture Presentation
 Architecture Design
 AP Art History

Existing Clubs

Environmental Club (Fresh Air Club)
 PAWS (Animal Rights Club)
 Power of Peace
 Students for Social Justice (Human Rights Club)

New Courses

Green Team 9 (team)
 Sustainability 10
 Sustainability 11
 Green Project, Portfolio, Internship 12
 Green Chemistry
 Gardening and Agriculture
 World Development Goals
 City Dynamics and Urban Planning

Future Courses (recommended)

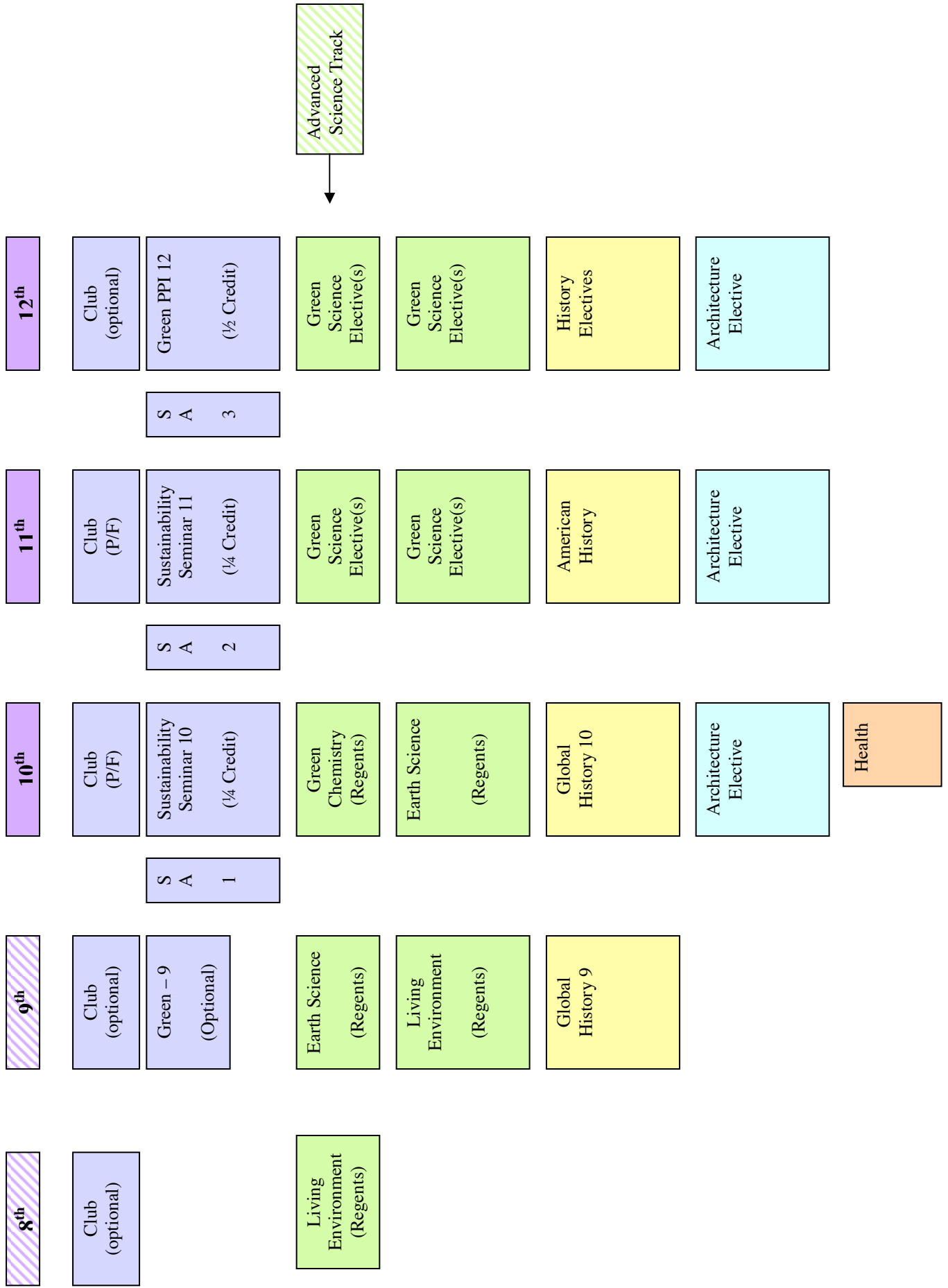
Green Home Economics
 Repair and Reuse of Technology
 Green Political Activism
 Green Investigation and Reporting
 Green Literature for a New World

New Clubs

Fix-it, Make-it, Can-it

Gardening Club
 Science Honor Society
 Entrepreneurship

GSS – Student Curriculum Plan



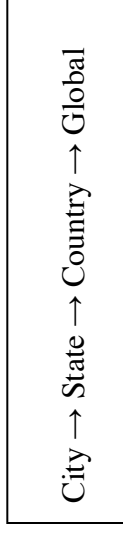
Goals of Sustainability – All NRHS High School Students

1. Students will understand how New Rochelle and other global communities will be impacted by current environmental issues.
 - Climate Change
 - Deforestation
 - Depletion of Natural Resources
 - Environmental Pollution
2. Students will understand how New Rochelle and other global communities are affected by environmental and social policies regarding sustainability.
 - Transportation
 - Energy Consumption
 - Affordable Housing
 - Waste and Storm Water Management
 - Garbage and Landfill Management
 - Drinking Water Sources
3. Students will understand issues relating to food, diet, and exercise in relation to New Rochelle and other global communities.
 - Obesity Crisis
 - Healthful Living
 - Attaining Personal Well Being
 - Eating for a Sustainable Planet
4. Students will understand that all people in the global community have specific physical/material, social/emotional, intellectual, and spiritual needs to live a fulfilling life in a sustainable world.
 - Equitable Distribution
 - Character Development
 - Decision Making
 - Responsibility to Future Generations

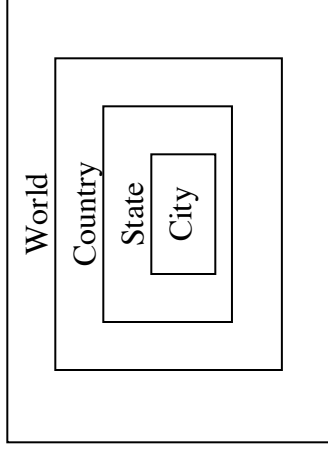
Additional Goals for Sustainability – GSS Majors at NRHS

1. Students will understand that all communities are comprised of interdependent human and non-human, biotic and abiotic elements. This creates an umbrella for interdependence from which all other outcomes can flow.
2. Students will understand that a framework for examining sustainability and interdependence of different regions within the global community exists. Ex: Students will understand that that they are citizens and members of multiple geographic/regional communities, and that these communities/regions are nested in each other.

Geographical Regions(size)



Organizational Units
(parts and whole)



3. Students will understand that interconnections exist between urban, suburban, and rural neighborhoods.
4. Students will understand that each neighborhood must have both an environment and economy that is equitable and sustainable. As the major unfolds, this outcome could be further refined and narrowed to describe more about what students will know about the environment and economy, what 'equitable and sustainable' looks like, etc. Example with an economics angle: "Students will understand that supporting local businesses is a way to support the community." (explain how/why: "Students will understand that local businesses keep more of their money within the community, and often have more accountability to the community, than big box or chain stores.")
5. Students will understand that balance, responsible use, and stewardship are essential components of sustainable human interaction with the natural environment as they participate in site visits to shoreline, woodland, park, lake, and stream regions in New Rochelle.
6. Students will understand that environmental, social, and educational policies at the local, state, national, and international levels impact sustainability of the planet. Again, as the major unfolds, this one can be more refined and narrowed to articulate what some of these key impacts are.
7. Students will understand that New Rochelle as well as other global communities can foster quality living by maintaining historic districts, sustainable recreation facilities, educational opportunities, and dialog between business, government, and community members.

Additional Goals for Sustainability – GSS Majors at NRHS *(continued)*

8. Students will understand that future population growth will impact sustainability at the local, state, national, and international levels.
9. Students will understand that New Rochelle is intimately interconnected with New York City as well as with other global communities in terms of sustainability issues as they attend sustainability conferences and seminars.
10. Students will understand that involvement, leadership, and creative thinking are important to institute change and work toward sustainability as they participate in projects within New Rochelle and/or other communities and synthesize a personal vision for a sustainability future.
(This gives an example of the ‘habits of mind’ students will need. As the major unfolds, this will want to be expanded with more specific skills students should have and how to acquire them.)

Staffing Requirements

Additional Teaching Staff - may be necessary

Lead GSS Teacher – Schedule follows Research Program Model (Two classes + Sustainability)

Sustainability 10 – 1 Evening Session per Month (8 Meetings per Year)

Sustainability 11 – 1 Evening Session per Month (8 Meetings per Year)

Green PPI 12 – Consults, Supervises, and Evaluates Student Projects, Portfolios, and Internships

GSS Teacher Coordinator – Additional Stipend and Conference Attendance

Co-ordinates integration of sustainability into all courses that are part of the Sustainability curriculum.

Maintains contact with CELF to improve, update, and expand integration of Sustainability.

Provides teacher training for curriculum development in conjunction with a standardized, school-wide model.

Supports continued updating and expansion of sustainability issues and curricula.

Organizes Sustainability related events such as Earth Day.

City Dynamics and Urban Planning – 1 Period - new elective course in Architecture.

Gardening and Agriculture – Summer School Course - new elective course in Science

Future Staffing Needs – necessary for expansion of Sustainability curriculum

Home Economics

Industrial Arts (Technology)

No Additional Staffing – needs filled by re-adjustment of existing courses

Green Chemistry – will absorb students currently taking Regents Chemistry or General Chemistry.

World Development Goals – will absorb students from other Social Studies electives.

Start-up Course Development and Teacher Training

1. Curriculum Work – Required Subjects

- | | |
|-------------------------------------|---|
| Living Environment
Earth Science | Global Studies 9/10
American History |
|-------------------------------------|---|
- Identify Appropriate Topics within Existing Curriculum
 - Develop Learning Tools or Projects to Integrate into Existing Curriculum
 - Training of all Teachers involved in Subject Area

4 Lead Teachers (20 Hours)

1 Conference Day – Staff In-service

2. Curriculum Work – Electives

- | | |
|---|--|
| AP Environmental Science
Environmental Science
Bioethics
Food Science
Astronomy | Law and Government
Entrepreneurship
Law and Government
AP Economics (post-exam) |
|---|--|
- Identify Appropriate Topics within Existing Curriculum
 - Develop Learning Tools or Projects to Integrate into Existing Curriculum

9 Subjects (10 Hours per Subject)

3. Teacher Training and Curriculum Work – Electives

- | | |
|--------------|--------|
| Architecture | Health |
|--------------|--------|
- Teacher Training or Conference in Green Issues and Sustainability
 - Identify Appropriate Topics in Courses within Existing Curriculum
 - Develop Learning Tools or Projects to Integrate into Existing Curriculum

2 Subjects (20 Hours per Subject)

Start-up Course Development and Teacher Training *(continued)*

4. New Course Development – Core GSS and Electives

Sustainability Seminar 10*	Green Chemistry
Sustainability Seminar 11*	Gardening and Agriculture
Green Project, Portfolio, Internship (PPI) 12	World Development Goals*
	City Dynamics and Urban Planning*

* Basic curriculum materials are available through CELF (Children’s Environmental Literacy Foundation)

- Teacher Training or Conference in Green Issues and Sustainability (if necessary)
- Identify Overarching Topics to Be Addressed in Curriculum
- Develop Curriculum for NRHS
- Develop Learning Tools and Projects

7 Subjects (20-40 Hours per Subject)