WHERE THE JOY OF LEARNING MEETS THE SCIENCE OF SUSTAINABILITY

NAAEE: Inspiring Climate Education and Action
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NY Sun Works, a non-profit organization that builds hydroponic farm classrooms in NYC K-12 public schools for the teaching of:

- Sustainability Science +
- Climate Education

We envision a generation of environmental innovators empowered to create solutions to global climate challenges.
13 YEARS EDUCATING STUDENTS ABOUT SCIENCE THROUGH URBAN AGRICULTURE

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GREENHOUSE MODEL
HYDROPONIC CLASSROOMS
Design Lab
Build Hydroponic Equipment
Technical + Curriculum Training
Lab Maintenance Visits
Ongoing Support

Keys and Electrical Needs:
- Sink
- Smart Board
- Seeding Cart 5 amps
- Vine Crop 10 amps
- NFT 8-4 8 amps
- Tower System 5 amps
- Compost
- Pest management

Scale: 3/16" = 1'-0"

M000 NYC School SAMPLE ROOM

Created by: NY Sun Works, Inc.

NYSunWorks, Inc., 157 Columbus Ave #432, New York, NY 10023, www.nysunworks.org
HYDROPONIC CLASSROOMS
Sharing the harvest from Hydroponic Classrooms with students and their families creates community connections and values the contributions of families to the knowledge shared in the classroom.
TEACH NY SUN WORKS' K-12 CURRICULUM

- Integrated Into Existing Classroom Science Lessons
- Connecting to Science Standards
- Comprehensive Teacher Training/PL Opportunities
- Year-round weekly maintenance support

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PEOPLE WE SERVE

SCHOOLS BY GRADE BAND

- 9-12: 25%
- K-5: 47%
- 6-8: 27%
- Higher Education: 1%

STUDENTS' ETHNICITY

- White: 17%
- Black: 21%
- Hispanic: 40%
- Other: 22%

TITLE I STATUS

- Yes: 81%
- No: 19%

The Students' Ethnicity chart was created using data from the NYC Department of Education Demographic Snapshot (SY 2021-2022), and our Title I status chart was created using data from the National Center for Education Statistics school search database (SY 2021-2022).
FOREMOST COMPREHENSIVE CLIMATE EDUCATION PROGRAM

REACHING 120,000 STUDENTS ANNUALLY

300+ PARTNER SCHOOLS

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SUPPORTING TEACHERS: WHAT WORKS FOR US
EDUCATION AT NYSW

Standards based Curriculum and Pedagogy

- Inquiry-based
- Collaborative
- Hands-on, experiential learning
- Data analysis
- Multimedia resources
- Differentiation
- Assessment

CLIMATE CONNECTIONS

EXAMPLES: GERMINATION LAB, JOURNEY OF PRODUCE, EUTROPHICATION, INTEGRATED PEST MANAGEMENT

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Supporting Teachers: Curriculum Support & Professional Learning

- **NYSW Curriculum Updates PD**
- **Election Day PD**
- **Climate Science & FF 2.0 PD; Making Learning Visible PD**
- **January 29 - PD Day**
- **YC Info Sessions**
- **YC Information Sessions & Planning**
- **Chancellor’s Day PD**

- **First Meeting w/curriculum specialist**
- **Second Meeting w/curriculum specialist**
- **Third Meeting w/curriculum specialist**
- **Fourth Meeting w/curriculum specialist**

**WEEKLY SUPPORT AND TECHNICAL TRAINING (year 2 → mentoring)**

- **Teacher Community Event October**
- **December**
- **February**
- **April**
- **May**
- **June**
SUPPORTING TEACHERS: TEACHER COLLABORATION
Curriculum complements both NGSS (green) and Amplify Science (orange)
An independent quantitative assessment of the NYSun Works program indicates that it may not only meet core science requirements, but also integrates climate change and sustainability education in a way that improves students’ understanding of science as a whole. As many states have adopted the Next Generation Science Standards as core curriculum and may be looking to integrate climate change and sustainability content into their courses, the NYSun Works program could serve as an ideal model that meets their needs.

The NYSun Works Curriculum and Science Achievement Report* concludes that students who receive the NYSun Works curriculum are more likely to score higher on the 4th grade science achievement test than students who do not receive the NYSun Works curriculum.

Actual Results (mean scaled science score)

<table>
<thead>
<tr>
<th>STUDENTS WITHOUT NY SUN WORKS CURRICULUM</th>
<th>STUDENTS WITH NY SUN WORKS CURRICULUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>76.13</td>
<td>85.14</td>
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</table>

9 Point Difference

*2016 NY Sun Works Curriculum and Science Achievement Report, Kate Gardner Burt, PhD, RD, Teachers College, Columbia University.
MODIFY AND ADAPT TO NEEDS OF STUDENTS, TEACHERS, AND SCHOOL COMMUNITY
Our program supports students’ social-emotional well-being; data show working with plants builds self-confidence and decreases stress and anxiety.

MEETING THE MOMENT: CLIMATE EDUCATION

AT NY SUN WORKS WE ARE HELPING TO BUILD A GENERATION OF ENVIRONMENTAL INNOVATORS EMPOWERED TO CREATE SOLUTIONS TO GLOBAL CLIMATE CHALLENGES.

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Kits are designed to provide scientific tools that would normally be used in classroom labs.

Students can take and measure pH, compare different seeds species and substrates with supportive materials.

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