



Statewide Strategic Plan for Science

Mission

Create a Statewide learning community to support student achievement of the learning standards in science, leading to a scientifically literate population.

Vision

Ensure the learning of science for all PreK-12 students by providing equitable access to exemplary teachers, inquiry-centered curriculum and instruction, standards-based assessment, a wealth of resources, and community support.

Curriculum

Goal: Provide opportunities for PreK-12 students to meet the New York State *Learning Standards for Mathematics, Science, and Technology* using exemplary local science curriculum programs emphasizing an inquiry-centered approach to learning science.

Objective: Provide opportunities for districts to explore research-based curriculum models.

Activities

- Support and offer technical assistance at State and local levels in the review of inquiry-centered curricula.
- Create models and templates to use in the review of science curriculum programs at the local level.
- Provide ongoing professional development for districts to replicate components of research-based science curricula on the local level.
- Promote awareness sessions and models for strategic planning and implementation.

Objective: Provide technical assistance to support the regional and local development of PreK-12 coherent curriculum aligned to science standards as included in the Core curricula.

Activities

- Identify, collect, and review current curriculum-mapping tools for use by districts.
- Make the curriculum-mapping tools available on the New York State Education Department Virtual Learning System.
- School districts examine current local PreK-12 science programs using curriculum-mapping techniques.

Objective: Incorporate technology to facilitate effective communication in the sharing of best-practices in science.

Activity

- Identify and make available a wealth of resources related to science content, pedagogy, and curricula using the New York State Education Department Virtual Learning System.

Professional Development

Goal: Design and develop a Statewide plan for sustained professional development to support scientific literacy.

Objective: Build the capacity of stakeholders in science.

Activities

- Recruit individuals from organizations of stakeholders to build awareness of the levels and breadth of professional development related to science education.
- Form a Statewide PreK-12 Focus on Science Education Advisory Committee including all stakeholders to serve as an advisory committee to the Department.
- Form a Science Task Force that develops a needs assessment, and identifies and designs professional development opportunities to meet state, regional, and local needs.
- Provide organizational structures and models for developing capacity for state, regional, and local professional development that moves through the following stages: developing awareness, building knowledge, translating into practice, practicing teaching, and reflecting.

Objective: Form a Content Area Field Advisory Committee in each science content area (elementary, intermediate, and commencement levels) that provides technical assistance at the regional level.

Activities

- Divide the State into professional development regions.
- Build capacity by developing a Content Area Field Advisory Committee to support initiatives in each science content area at the elementary, intermediate, and commencement levels across the designated regions.
- Identify, support, and train the Content Area Field Advisory Committee to provide professional development in science at the regional and local levels.
- The Content Area Field Advisory Committee will conduct sustained professional development at the regional level.
- Target appropriate professional development for various stakeholders (teachers, administrators, higher education, parents, and business and industry leaders).



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Assessment

Goal: Use State and local science assessment data to inform decisions regarding curriculum, instruction, and assessment for the improvement of student learning and achievement.

Objective: Use State science assessment data to determine professional development needs and technical assistance.

Activities

- Use State science assessment data to examine trends in student performance at the 4th grade, 8th grade, and commencement levels.
- Use performance data to identify districts that are making substantial progress in raising student achievement of the learning standards in science to determine the characteristics of effective science instruction and best practices.
- Use data to develop plans for improving student performance using research-based resources such as “Using Data/Getting Results: A Practical Guide for School Improvement in Mathematics and Science” by Nancy Love; “Science for All Children”-NSRC; Horizons Research Group (on line); and “Evaluating Professional Development.”
- An analysis of item-difficulty of questions on State assessments in science will be accessible on the New York State Education Department Virtual Learning System.

Objective: Provide technical assistance to school districts on data analysis and interpretation to make informed decisions toward professional development, curriculum, instruction, and assessment.

Activities

- Establish baseline data at state level: class registration, attendance, graduation rate, teacher certification, socioeconomic data, facilities, etc. through BEDS, LEAP (elementary), STEP (secondary), and “Standards Implementation Study.”
- Examine state assessments for students with special needs including Data Folio, Alternate Assessments, and the RCT in Science.
- Develop attitudinal surveys for teachers, administrators, and students.
- Examine the data from the Standards Implementation Study in Science and based on analysis develop a follow-up survey for teachers and administrators.
- Analyze disaggregated student achievement data for trends.

Objective: Provide models of science assessment tools and professional development to improve state and local test development.

Activities

- Develop, design, and provide models of science assessment tools and professional development to improve classroom curriculum and instruction practices.
- Assemble a Part D Advisory Committee to continue the development of the performance tasks for the commencement level Regents examinations in science.



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- Provide parallel performance tasks in each science content area at the elementary, intermediate, and commencement levels and make available on the New York State Education Department Virtual Learning System.
- Continue the development of Part D-performance components for commencement level science assessments and design a dissemination plan for implementation including professional development for all classroom teachers.

Materials Support

Goal: Support the development and implementation of inquiry-centered programs by providing models of effective systems management of science materials.

Objective: Identify existing science material centers (regional, district, school-based) and related resources to support the implementation of inquiry-centered science programs.

Activity

- Provide professional development opportunities in the management of science materials that includes the following components: work environment, space planning, equipment, expenses, and staffing.

Objective: Provide State support for the purchase, implementation, and continued support of inquiry-centered science programs.

Activity

- Investigate current fiscal regulations and policies related to curriculum programs and instructional materials in science for resource support.

Administration Support and Community Connections

Goal: Build capacity among all stakeholders.

Objective: Identify partners from school districts, higher education, professional organizations, and business and industry for each region.

Activities

- Form a Statewide PreK-12 Focus on Science Education Advisory Committee including all stakeholders to serve as an advisory committee to the Department.
- Adopt the “Developing Business and Community Partners” model for establishing partnerships.
- Support ongoing effort to sustain partnerships and science education reform.



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