

CONNECTICUT STATE DEPARTMENT OF EDUCATION
Office of Academics
Bureau of Standards, Curriculum and Instruction

EDUCATION REFORM DISTRICT
K-8 SCIENCE IMPROVEMENT
GRANT APPLICATION

2013-2015



STATUTE: PA 13-184: AN ACT CONCERNING EXPENDITURES AND REVENUE FOR THE BIENNIUM ENDING JUNE 30, 2015

PURPOSE: Opportunity for Educational Reform Districts to undertake initiatives to improve the teaching and learning of science in Kindergarten through Grade 8.

Published: September 13, 2013

Applications Due: October 15, 2013

Projected Award Notification: October 31, 2013

RFP 403

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AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER.

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Educational Reform District Science Grant Program

Opportunity for Educational Reform Districts to undertake initiatives to improve the teaching and learning of science in Kindergarten through Grade 8.

I. PURPOSE

Public Act (P.A.) 13-184: An Act Concerning Expenditures and Revenue for the Biennium Ending June 30, 2015, authorizes the Commissioner of Education to award grants to Educational Reform Districts (ERDs) for the purpose of improving student academic performance in science, science literacy and science numeracy in kindergarten to grade 8.

II. ELIGIBLE APPLICANTS

The 10 ERDs, as defined in Section 10-262u and set forth below, are eligible to submit proposals to the Connecticut State Department of Education (CSDE) for this grant. The following ERDs may submit K-8 science improvement proposals. If approved, the ERDs will maintain responsibility for the programming, monitoring and fiscal operations of the science improvement project:

Educational Reform Districts
2013-2014

Bridgeport
East Hartford
Hartford
Meriden
New Britain
New Haven
New London
Norwich
Waterbury
Windham

Enhanced teaching practices are one of many factors that can contribute to improved student science learning. For measurable school-wide science improvement to occur, several important elements of a science education program must be in place. Teachers and students should have:

- ample **time** and **support** for learning science;
- a **curriculum** that contextualizes state standards in investigations that are relevant and interesting to students; and
- high quality instructional **materials**, science **supplies** and **equipment**.

Therefore, ERD leaders should select schools to participate in this grant based on the principals' overall commitment to all elements of a science education program as described above (see Attachment 1 – District Requirements).

The enhanced teaching practices and student learning activities funded by this grant should be embraced and implemented by a **sufficient number of faculty members** so as to achieve measurable school impacts.

III. DEFINITIONS

Science improvement interventions funded with an ERD science grant are aimed at measurably improving student learning in science and engineering content and practices, including scientific literacy and numeracy.

SCIENTIFIC LITERACY: The knowledge and understanding of scientific concepts and practices required for personal decision making, participation in civic and cultural affairs, and economic productivity. A scientifically literate person has the capacity to:

- understand, explain, and apply core scientific ideas;
- recognize, generate and pursue answers to scientific questions derived from curiosity and observations;
- understand the nature of scientific research methods to collect and interpret empirical evidence;
- read and critique science-related information in books, newspapers, magazines, web sites and other popular media;
- identify scientific issues underlying personal, social and civic decisions and express positions that are scientifically and technologically informed; and
- evaluate the quality of scientific information on the basis of its source and the methods used to generate it.

SCIENTIFIC NUMERACY: The knowledge and understanding of mathematics concepts, skills and practices required to participate in and interpret results of scientific investigations. Examples of scientific applications of mathematics include, but are not limited to, the capacity to:

- use numbers to analyze and represent patterns and relationships in hands-on investigations;
- make and understand large-scale, small-scale and fractional measurements;
- understand the meaning and use of calculations that express quantities such as area, perimeter, distance, location, volume, or density;
- display and use data in charts and graphs to determine conclusions, develop explanations, and make predictions or generalizations; and
- understand and use probability and statistical methods to test hypotheses and support claims.

IV. SCIENCE IMPROVEMENT PROJECT OPTIONS

Proposed science improvement interventions under this grant must provide **professional learning for teachers** (“Primary Project”); and may also provide **enrichment experiences for students** (“Supplemental Project”), as described more fully below. Both Primary and Supplementary interventions should be described within a single proposal. The Primary and Supplementary interventions may be related to each other, but it is not required that they be interdependent.

PRIMARY PROJECT: TARGETED IMPROVEMENT IN TEACHING PRACTICES. Proposed intervention programs will address up to two of the six focus areas listed below to improve teaching in K-2, 3-5, or 6-8 grade bands:

- 1) Enhancement of **teacher content knowledge** needed to confidently teach selected science core ideas in [Connecticut K-8 Science Curriculum Standards](#) or [Framework for K-12 Science Education](#) (National Research Council, 2012);
- 2) Research-based [elements of effective science instruction](#) - see Appendix A;
- 3) Effective **implementation** of CSDE [curriculum-embedded performance tasks](#) and inquiry feedback rubrics (Gr. 3-8);

- 4) Pedagogy for integration of selected **Science and Engineering Practices** (NRC [Framework for K-12 Science Education, Ch. 3](#)) **with Core Ideas** specified in option 1 above;
- 5) Pedagogy for integration of **Common Core English language arts standards within standards-based science lessons**, including, but not limited to, CSDE curriculum-embedded tasks;
- 6) Pedagogy for integration of **Common Core Mathematics standards within standards-based science lessons**.

Primary Project interventions are intended to lead to observable and sustainable changes in science teaching practices. Its purpose is to **build school capacity for long-term, sustainable enhancement of science instruction**. Effective teaching methods and strategies addressed in the teacher training should be explicitly identified, broadly applicable in the classroom, and should not be limited to instruction in how to use a specific set of instructional materials.

A variety of Primary Project teaching improvement interventions may be supported with this grant. Examples include, but are not limited to, professional learning communities and/or Lesson Study groups facilitated by science education experts; on-line learning modules; inquiry pedagogy institutes; instructional coaches, etc.

SUPPLEMENTARY PROJECT: ENRICHMENT EXPERIENCES FOR STUDENTS. Such programs will provide **sustained and purposeful** science enrichment experiences for students. Sustained interventions are those that engage students in an on-going series of regularly-scheduled in-school and/or out-of-school experiences with specific, planned outcomes. These experiences may be designed to accomplish **up to 3** of the following goals (adapted from the National Science Foundation [Framework for Evaluating Informal Science Education Programs](#)).

Outcomes should be selected based on their appropriateness for K-2, 3-5 **or** 6-8 grade bands:

- 1) **INTEREST:** Raise student interest in science and science-related community issues;
- 2) **ATTITUDE:** Encourage self-confidence and positive image of scientists and scientific endeavors;
- 3) **CONTENT KNOWLEDGE:** Deepen and expand existing knowledge and abilities;
- 4) **REASONING:** Engage in investigation and experimentation; make connections between concepts and their real world applications; and
- 5) **CAREER AWARENESS** (only for Gr 6-8): Understand how academic science and engineering transfer to career and work experiences, especially for subgroups traditionally underrepresented in STEM fields.

A variety of Supplementary Project student enrichment experiences may be supported with this grant. Examples include, but are not limited to, after-school environmental or engineering clubs; summer science camps; science and engineering exhibitions; family STEM events; school- or community-service projects; job-shadowing or mentoring relationships; etc. Student experiences may take place during the school day (i.e., traditional or extended day); or after school, on weekends, during school vacations, or during the summer.

Student enrichment experiences may not include one-time field trips or activities.

V. **PROJECT DESIGN**

Proposed science improvement interventions should address the unique needs and goals of the participating school(s) and should:

- address an **issue or problem** related to science teaching specific to the participating school(s);
- propose **observable and measurable changes in teaching practices** that contribute to resolving the identified issue and improving science teaching and learning;
- be based on trends in **relevant** student achievement data; and
- be linked to the district's improvement goals specified in its Alliance District Plan.

The professional learning and student activities funded with this grant should be **sufficiently sustained and robust** (i.e., not one-time events) so they are likely to result in achievement of observable changes to teaching and learning. The enhanced teaching practices proposed should be explicit and should be embraced by a **sufficient number of faculty members within a school** so as to achieve measurable impacts within an entire grade, grade band or the school.

The **applicant school principal(s) and a district science leader** should participate fully in the planning, implementation and evaluation of the science improvement initiatives. Other school personnel, such as literacy and mathematics coaches, special educators, technical educators and school counselors are encouraged to participate in the professional learning and student engagement initiatives. **Preference will be given to science improvement projects that demonstrate evidence of significant involvement of the school principal(s) and/or other school leader.**

Note that impact on teaching practices and student learning is an essential indicator of success; simply providing teacher or student activities that are enjoyable or well-received is not sufficient. Therefore, it is important that proposed projects have focused, achievable and measurable goals.

VI. ELIGIBLE PARTNERS

ERDs may choose to draw upon the expertise of individuals or organizations that have demonstrated success in facilitating teacher learning, changing teaching practice and engaging students in learning science and scientific practices.

Providers of professional learning and student experiences may include, but are not limited to, university faculty, RESC specialists, museum, aquarium and nature center educators, after-school science programs, state agencies, nonprofits, private vendors, independent consultants, and others. ERDs are responsible for selecting partners that provide evidence of having facilitated K-8 science improvement interventions that **have resulted in documented changes in teaching practices and improvements in student learning, attitude or aspiration.**

Specifically, professional learning providers should offer documentation of their expertise in the following areas:

- Connecticut K-8 Science Curriculum Standards;
- Framework for K-12 Science Education (National Research Council, 2012);
- Common Core State Standards for English Language Arts and Mathematics;
- Research-based pedagogy specific to K-8 science and the integration of engineering, literacy and mathematics instruction; and
- Challenges and solutions for K-8 teachers of science.

Preference will be given to ERDs that partner with providers who (a) have a record of working with schools that have low academic performance in science and (b) whose after-school elementary science programs have a record of improving student academic performance in science.

VII. ALLOWABLE USES OF GRANT FUNDS

Funds under this grant are used to **supplement, not supplant**, existing science programming expenditures. Generally, funds may be used to:

- Support more effective use of science teaching materials currently in use in the district;
- Expand opportunities for students to learn science; or
- Augment the impact of initiatives funded with other federal and state grants.

Funds may NOT be used to purchase new textbooks, science kit programs, or equipment (unless such equipment is directly related to the identified issue and proposed intervention.) Payments to program

providers for services must fall within customary limits. Restrictions or limits on uses of funds may be applicable at the discretion of the Commissioner.

VIII. GRANT AWARD INFORMATION AND TIMELINE

ERDs will develop and describe a **2-year planned intervention**. The Year 1 Budget will be submitted with this application. A Continuation Application, including a Year 2 Budget, will be submitted on or about June 30, 2014. **Year 2 funding will be contingent upon:** (a) allocation of funds in the State Budget for the Education Reform District K-8 Science Improvement Grant Program; (b) effectiveness and impact of Year 1 interventions; and (c) responsible fiscal management of funds.

- Total program funds available 2013-14: \$455,000.
- Total program funds available 2014-15: \$455,000.
- Project period Year 1: 2013-14 School Year, including Summer 2014.
- Project period Year 2: 2014-15 School Year, ending June 30, 2015.
- Year 2 Continuation Application due to CSDE: June 30, 2014.
- Fiscal management: All Year 1 funds received under this grant must be encumbered no later than June 30, 2014 and expended no later than August 31, 2014. All Year 2 funds received under this grant must be encumbered no later than June 30, 2015 and expended no later than August 31, 2015. **Year 1 funds must be fully expended prior to encumbering or spending any Year 2 funds.**

Grantees must complete program activities by June 30. They must fully encumber funds by June 30, but can liquidate encumbrances through July 30. This grant cannot be carried over and cannot be amended after June 30. No payments can be made in a subsequent year to cover prior year activities. Unexpended funds must be refunded and cannot be reallocated in a subsequent year.

- Number of applications to be funded: 10 Education Reform Districts are eligible to submit proposals. Award amounts depend on the number, quality and scope of proposals submitted.
- Award amounts are payable in monthly draws, as needed for upcoming expenses.

IX. EVIDENCE OF IMPACT AND PROJECT EVALUATION

Interventions funded with this grant should produce measurable improvements in the teaching and learning of K-8 science. The proposal will include a **project evaluation plan** describing various indicators that will serve as evidence of impact, as well as methods for collecting such evidence. In addition to Science Connecticut Mastery Test scores, other examples of impact evidence include, but are not limited to, classroom observations with criteria specific to the intervention; annotated videotaped lesson segments; scored student work, interviews, surveys, etc.

Throughout the project period, project coordinators will closely monitor both the quality of the interventions and their impact on teaching practice and student learning.

- A **Year 1 progress report** will be submitted to CSDE as part of the Year 2 Continuation Application due **August 31, 2014**.
- A summative **impact evaluation report** will be submitted to CSDE by the ERD within 30 days after the conclusion of the 2-year intervention (July 31, 2015).

Both reports will include quantitative and qualitative evidence of the extent to which the grant-funded intervention(s) resolved the problem or issue described in Question 2 of the proposal.

X. **PROPOSAL EVALUATION CRITERIA**

Project proposals will be evaluated based on the following criteria. CSDE reserves the right to negotiate modifications to proposed project designs and budgets:

1. Clarity of purpose and evidence of commitment to K-8 science program improvement;
2. Clarity and measurability of goals, intended outcomes and evidence indicators;
3. Alignment of project goals with other district improvement initiatives;
4. Alignment of project design with principles of effective adult and/or student learning;
5. Quality of the planned intervention(s) and of the service provider partners;
6. Likelihood of successful achievement of the goals;
7. Reasonableness of the costs; and
8. Potential for sustaining long-term impacts.

APPLICATION COVER PAGE

**Connecticut State Department of Education
Office of Academics**

Application for Education Reform District K-8 Science Improvement Grant

District:

Schools Participating:

Principals Participating:

Service Providers Participating:

Project Coordinator Name (District Science Leader):

Mailing Address:

Telephone:

Fax:

E-mail address:

Amount of funding requested:

Projected number of teachers participating:

Projected number of students participating (optional):

Proposal prepared by: _____

CERTIFICATION OF AUTHORIZED OFFICIAL

The undersigned certifies that, to the best of his/her knowledge, the information in this application is correct, that the filing of this application is duly authorized by the governing body of this organization or institution, and that the applicant will comply with the attached Statement of Assurances.

Authorized Officer's Name

Signature

Date

APPLICATION SUBMISSION INSTRUCTIONS

APPLICATION DUE DATE: OCTOBER 15, 2013

PROPOSAL COMPONENTS TO SUBMIT:

1. Signed cover page
2. Project Narrative – Primary Project (**maximum 10 pages, single-spaced**)
3. Project Narrative – Supplementary Project (optional) (**maximum 5 pages, single-spaced**)
4. Year 1 Budget and Budget Narrative
5. Attachment 1: District Requirements – signed by each participating school principal
6. Attachment 2: Assurances - signed by authorized district official

SUBMIT AS A SINGLE PDF DOCUMENT TO:

Elizabeth Buttner, Science Education Consultant

E-mail: Elizabeth.buttner@ct.gov

Phone: 860-713-6849

PRIMARY PROJECT: IMPROVED TEACHING PRACTICES (REQUIRED)

PROJECT NARRATIVE

PRIMARY PROJECT: TARGETED IMPROVEMENT IN TEACHING PRACTICES. Proposed instructional improvement programs will address NO MORE THAN 2 of the following focus areas to improve teaching in K-2, 3-5, **or** 6-8 grade bands.

Check below the focus area(s) and indicate the targeted grade band for the proposed science improvement project:

✓	INSTRUCTIONAL IMPROVEMENT PROJECT FOCUS	GRADE BAND(S)
	1. Enhancement of teacher content knowledge needed to confidently teach selected science core ideas in Connecticut K-8 Science Curriculum Standards or Framework for K-12 Science Education (National Research Council, 2012);	
	2. Research-based elements of effective science instruction - see Appendix A;	
	3. Effective implementation of CSDE curriculum-embedded performance tasks and inquiry feedback rubrics (Gr. 3-8);	
	4. Pedagogy for integration of selected Science and Engineering Practices (NRC Framework for K-12 Science Education, Ch. 3) with Core Ideas specified in (1);	
	5. Pedagogy for integration of Common Core English language arts standards within standards-based science lessons , including, but not limited to, CSDE curriculum-embedded tasks;	
	6. Pedagogy for integration of Common Core mathematics standards within standards-based science lessons , including, but not limited to, CSDE curriculum-embedded tasks.	

1. Project Overview – Provide a concise summary of the proposed 2-year intervention to improve science teaching and learning. Clearly identify a problem or issue and describe the proposed solution that will be enabled by the grant (250 words maximum).

Describe details of the proposed science teaching improvement intervention by responding to the following prompts in the order in which they appear below **(10 pages maximum; single-spaced)**:

2. Problem Statement - Describe an issue, problem or challenge related to science teaching and learning specific to the participating school(s). The problem should be program-related rather than simply stating that science assessment scores are low. Examples of program-related problems include, but are not limited to, status of the curriculum, qualities of science instruction, instructional time constraints, access to materials, etc.
 - i. Cite relevant qualitative indicators of the problem. What is the evidence that the problem exists?
 - ii. Cite relevant quantitative indicators of the problem. Summarize the trend on Science CMT scores in Scientific Inquiry and in Life, Physical or Earth Science since 2008. Cite data trends from district-level science assessments if available.
3. Change Theory – In what ways is the proposed intervention expected to correct the problem described in question 2?

4. Goals and Outcomes - What specific instructional improvements is the proposed project designed to make? List the TEACHING IMPROVEMENT goals and indicators in the chart below:

GOAL	OBSERVABLE TEACHER OUTCOMES (What will teachers learn to do better?)	OBSERVABLE STUDENT OUTCOMES (How will student performance be improved if the teacher outcomes are achieved?)

*NOTE: Observable outcomes must be specific and measurable. For example, “Teachers will be able to teach through inquiry” is too vague to be measurable. Instead, describe the **specific Inquiry Practice and Core Idea** that teachers will be better able to develop (e.g., critiquing evidence-based scientific claims related to the effect of forces on the motion of objects).

5. Teacher Learning Plan –

- a. Describe a **2-year plan** for professional learning, including the format, the principles of adult learning upon which the format is based, and the frequency and duration (total hours) of the training.
- b. Identify the specific academic learning standards the intervention is designed to address, and explain why they were selected.
- c. Describe explicitly the teaching methods or strategies that will be the focus of the professional learning. What will teachers learn to do better?
- d. Describe how the improved teaching methods or strategies will result in improved student academic performance. What will students be able to do better?
- e. Complete the following 2-Year Activity Summary Table:

DATE(S)	HOURS	ACTIVITY	PURPOSE	LOCATION	PD LEADER(S)	OUTCOME(S)

6. Participants and Professional Development Providers –

- a. Describe the school faculty members who will participate in the professional learning intervention, the grade levels they represent, their roles, and the percentage of the entire school faculty they represent.
- b. Explain why the selected faculty members were chosen to participate in the science intervention.
- c. Describe the provider(s) of the professional learning. Include specific information about the provider’s:
 - i. **Knowledge** of the vision described in Connecticut’s K-8 Science Curriculum Standards (2010); the “Framework for K-12 Science Education” (National Research Council, 2012); the Common Core State Standards for English Language Arts and Mathematics; and research-based science pedagogy; and
 - ii. **Expertise and prior success** at facilitating the enhancement of teaching practices that improve student academic performance in science, science literacy and science numeracy in kindergarten to Grade 8. Provide both qualitative and quantitative indicators of the provider’s record of having improved K-8

teaching practices or students' academic performance. Note that years of experience or number of teachers or students served does not constitute evidence of improvement.

7. Alliance District Plan - Explain how the science teaching improvement intervention supports goals included in the Alliance District improvement plan.
8. Project Impact Evaluation Plan – Describe how the progress toward intended project outcomes will be measured.
 - a. What will serve as evidence of the desired changes in teaching practice?
 - b. What methods and instruments will be used to collect data (quantitative and qualitative) as evidence of impact?
9. Project Sustainability Plan – Explain how the intended impacts of the intervention can be sustained beyond the grant period.

SUPPLEMENTARY PROJECT (OPTIONAL)- ENRICHMENT EXPERIENCES FOR STUDENTS

PROJECT NARRATIVE

SUPPLEMENTARY PROJECT: ENRICHMENT EXPERIENCES FOR STUDENTS. Such programs will provide **sustained and purposeful** science enrichment experiences for students. Sustained interventions are those that engage students in an on-going series of regularly-scheduled in-school and/or out-of-school experiences with specific, planned outcomes. These experiences may be designed to accomplish **up to 3** of the following goals (adapted from the National Science Foundation [Framework for Evaluating Informal Science Education Programs](#)). Outcomes should be selected based on their appropriateness for K-2, 3-5 **or** 6-8 grade bands:

Check below **UP TO 3** focus area(s) and the targeted grade band for the proposed supplementary science improvement project:

✓	STUDENT EXPERIENCES SUPPLEMENTARY PROJECT FOCUS	GRADE BAND(S)
	1. INTEREST: Raise student interest in science and science-related community issues	
	2. ATTITUDE: Encourage self-confidence and positive image of scientists and scientific endeavors	
	3. CONTENT KNOWLEDGE: Deepen and expand existing knowledge and abilities	
	4. REASONING: Engage in investigation and experimentation; make connections between concepts and their real world applications	
	5. CAREER AWARENESS (only for Gr 6-8): Understand how science and science-related content transfer to career and work experiences, especially for subgroups traditionally underrepresented in STEM fields.	

1. Project Overview – Provide a concise summary of the proposed 2-year supplementary student experiences project. Clearly identify a problem or issue and describe the proposed solution that will be enabled by the grant (250 words maximum).

Describe details of the proposed student experiences intervention by responding to the following prompts in the order in which they appear below (**5 pages maximum; single-spaced**):

2. Problem Statement - Describe an issue, problem or challenge related to students’ science performance, attitudes or aspirations specific to the participating school(s).
 - a. Cite relevant indicators of the problem. What is the evidence that the problem exists?
3. Change Theory – In what ways is the proposed supplementary intervention expected to correct the problem described in question 2 above?
4. Goals and Outcomes - What specific improvements is the proposed supplementary project designed to make? List the STUDENT IMPROVEMENT goals and indicators in the chart below:

GOAL	STUDENT OUTCOMES (How will student performance, interest, attitude or aspiration be improved if the intervention is successful?)

5. Plan of Sustained Student Learning Experiences –

- a. Describe the planned student experiences, including the format, the frequency and the total hours.
- b. Describe the focus area(s) the student learning experiences are intended to address (see p. 11), and explain why these focus areas were selected.
- c. Describe how the student enrichment experiences will result in improved student academic performance. What will students be able to do better?
- d. Complete the following Enrichment Activity Summary Table:

DATE(S)	TIME	ACTIVITY	PURPOSE	LOCATION	LEADER(S)	STUDENT OUTCOME(S)

6. Participants and Professional Development Providers –

- a. Describe the students who will participate in the enrichment experiences.
- b. Explain how the students will be selected to participate in the science enrichment experiences.
- c. Describe the provider(s) of the science enrichment experiences. Include specific information about the provider’s **expertise and prior success** at providing sustained student enrichment experiences that improve student academic performance in science, science literacy or science numeracy in kindergarten to Grade 8.
 - i. Provide both qualitative and quantitative indicators of the provider’s record of having improved students’ academic performance and/or science interest, attitude or aspirations. Note that years of experience or number of teachers or students served does not constitute evidence of improvement.

END OF PROJECT NARRATIVE

ED 114 Budget and Budget Narrative

YEAR 1 PROJECT ACTIVITIES

GRANTEE NAME (Fiscal Agent):		TOWN CODE:
PROJECT TITLE:		
ACCOUNTING CLASSIFICATIONS:		
FUND: 11000 SPID: 12543 PROGRAM: 82164 BUDGET: 2014 CHARTFIELD1: 170101 CTFD 2:		
Project Code: SDE0000000000002		
GRANT PERIOD: 11/01/2013 to 6/30/2014		AUTHORIZED AMOUNT:
CODE	DESCRIPTION	BUDGET AMOUNT
111A	ADMINISTRATOR/SUPERVISOR SALARIES	
111B	TEACHERS	
112A	EDUCATION AIDES	
112B	CLERICAL	
119	OTHER	
321	TUTOR	
322	INSERVICE (INSTRUCTIONAL PROGRAM IMPROVEMENT SERVICES)	
324	FIELD TRIPS	
325	PARENT ACTIVITIES	
510	PUPIL TRANSPORTATION	
530	COMMUNICATION	
560	TUITION	
580	TRAVEL	
611	INSTRUCTIONAL SUPPLIES	
612	ADMINISTRATIVE SUPPLIES	
642	LIBRARY BOOKS (AND PERIODICALS)	
890	OTHER OBJECTS (MISCELLANEOUS EXPENDITURES)	
	TOTAL	

YEAR 1 Budget Narrative

District : _____ Project Title: _____

Describe in detail the basis for determining the amounts shown on the Budget Form ED114. Fill in the AMOUNT for each line item, and then in the space below each code, give a brief explanation of how the funds will be used. Provide a detailed breakdown of hourly, daily or per unit costs or rates.

CODE	OBJECT	AMOUNT
111A	<p>Administrator/Supervisor Salaries</p> <p>Amounts paid to administrative employees of the grantee not involved in providing direct services to pupils/clients.</p>	
111B	<p>Teachers</p> <p>Salaries for employees providing direct instruction/counseling to pupils/clients. Includes staff for whom the grantee is paying employee benefits and who are on the grantee payroll.</p>	
112A	<p>Education aides</p> <p>Salaries for grantee employees who assist staff in providing classroom instruction. Include only time and effort beyond the normal work day that would be associated with the grant-funded activities.</p>	
112B	<p>Clerical</p> <p>Salaries for grantee employees performing clerical/secretarial services. Include only time and effort beyond the normal work day that would be associated with the grant-funded activities.</p>	

CODE	OBJECT	AMOUNT
119	<p>Other</p> <p>Salaries for any other grantee employee not fitting into objects 111A or 111B. Include only time and effort beyond the normal work day that would be associated with the grant-funded activities.</p>	
321	<p>Tutors</p> <p>Payments for services performed by qualified persons directly engaged in providing learning experiences for students. Include the services of teachers and teachers' aides <u>who are not on the payroll of the grantee.</u></p>	
322	<p>In-service (Instructional Program Improvement Services)</p> <p>Payments for services performed by persons qualified to assist teachers and supervisors to enhance the quality of the teaching process. This category includes curriculum consultants, in-service training specialists, etc., who are not on the grantee payroll.</p>	
324	<p>Field trips</p> <p>Costs incurred for conducting educational activities off site. Includes admission costs to educational centers, fees for tour guides, etc.</p>	
510	<p>Pupil transportation</p> <p>Expenditures for transporting pupils to and from school and other activities. Included are such items as bus rentals for field trips and payments to drivers for transporting handicapped children.</p>	

CODE	OBJECT	AMOUNT
530	<p>Communication</p> <p>Payments for services provided by persons or businesses to assist in transmitting and receiving messages or information. This category includes telephone services as well as postage machine rental and postage.</p>	
560	<p>Tuition</p> <p>Expenditures to reimburse other educational agencies for instructional services to pupils.</p>	
580	<p>Travel</p> <p>Expenditures for transportation, meals, hotel and other expenses associated with staff travel. Per diem payments to staff in lieu of reimbursement for subsistence (room and board) are also included.</p>	
611	<p>Instructional supplies</p> <p>Expenditures for consumable items purchased for instructional use.</p>	
612	<p>Administrative supplies</p> <p>Expenditures for consumable items directly related to program administrative (non-instructional) activities.</p>	
642	<p>Library books (and periodicals)</p> <p>Expenditures for library books, reference books, periodicals and newspapers that are purchased for use by the school library.</p>	

890	Other objects (Miscellaneous Expenditures) Expenditures for goods or services not properly classified in one of the above objects.	
	TOTAL	

ATTACHMENT 1

DISTRICT REQUIREMENTS

ERDs applying for this science improvement grant ensure that:

1. The proposed science improvement initiatives are aligned with goals stated in the Alliance District Plan;
2. The principals of the participating schools support a comprehensive and coherent K-8 science program, including expectations of adequate instructional time, as follows:
 - a. Kindergarten-Grade2: a minimum of 90 MINUTES per week of experiential science instruction during the school day;
 - b. Grades 3-5: a minimum of 3 hours per week of experiential science instruction during the school day;
 - c. Grades 6-8: a minimum of 4 hours per week of experiential science instruction during the school day.
3. The principals of the participating schools will provide substitute coverage and release time for teachers to participate in grant-funded activities.

Superintendent's Signature

Principal's Signature

School

Principal's Signature

School

Principal's Signature

School

ATTACHMENT 2

CONNECTICUT STATE DEPARTMENT OF EDUCATION

STATEMENT OF ASSURANCES

PROJECT TITLE: Education Reform District K-8 Science Improvement Grant

THE APPLICANT: _____ HEREBY ASSURES THAT:
(Insert DISTRICT Name)

- A. The applicant has the necessary legal authority to apply for and receive the proposed grant.
- B. The filing of this application has been authorized by the applicant's governing body. The undersigned official has been duly authorized to file this application for and on behalf of said applicant, and otherwise to act as the authorized representative of the applicant in connection with this application.
- C. The activities and services for which assistance is sought under this grant will be administered by or under the supervision and control of the applicant.
- D. The project will be operated in compliance with all applicable state and federal laws and in compliance with regulations and other policies and administrative directives of the Connecticut State Board of Education and the State Department of Education (CSDE).
- E. Grant funds shall not be used to supplant funds normally budgeted by the agency.
- F. Fiscal control and accounting procedures will be used to ensure proper disbursement of all funds awarded.
- G. The applicant will submit a final project report (within 60 days of the project completion) and such other reports, as specified, to the CSDE. This report should include information relating to the project records and access thereto as the CSDE may find necessary.
- H. The CSDE reserves the exclusive right to use and grant the right to use and/or publish any part or parts of any summary, abstract, reports, publications, records and materials resulting from this project and this grant.
- I. If the project achieves the specified objectives, every reasonable effort will be made to continue the project and/or implement the results after the termination of state and federal funding.

- J. The applicant will protect and save harmless the State Board of Education from financial loss and expense, including legal fees and costs, if any, arising out of any breach of the duties, in whole or part, described in the application for the grant.

- K. At the conclusion of each grant period, the applicant will provide for an independent audit report acceptable to the grantor in accordance with Sections 7-394a and 7-396a of the Connecticut General Statutes (C.G.S.), and the applicant shall return to the SDE any moneys not expended in accordance with the approved program/operation budget as determined by the audit.

- L. The grant award is subject to approval of the SDE and availability of state or federal funds.

- M. The applicant agrees and warrants that Sections 4-190 to 4-197, inclusive, of the C.G.S. concerning the Personal Data Act and Sections 10-4-8 to 10-4-10, inclusive, of the Regulations of Connecticut State Agencies promulgated thereunder are hereby incorporated by reference.

N. Required Language: Nondiscrimination

(a) For purposes of this Section, the following terms are defined as follows:

- i. "Commission" means the Commission on Human Rights and Opportunities;
- ii. "Contract" and "contract" include any extension or modification of the Contract or contract;
- iii. "Contractor" and "contractor" include any successors or assigns of the Contractor or contractor;
- iv. "Gender identity or expression" means a person's gender-related identity, appearance or behavior, whether or not that gender-related identity, appearance or behavior is different from that traditionally associated with the person's physiology or assigned sex at birth, which gender-related identity can be shown by providing evidence including, but not limited to, medical history, care or treatment of the gender-related identity, consistent and uniform assertion of the gender-related identity or any other evidence that the gender-related identity is sincerely held, part of a person's core identity or not being asserted for an improper purpose;
- v. "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations;
- vi. "good faith efforts" shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements;
- vii. "marital status" means being single, married as recognized by the state of Connecticut, widowed, separated or divorced;
- viii. "mental disability" means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders", or a record of or regarding a person as having one or more such disorders;
- ix. "minority business enterprise" means any small contractor or supplier of materials fifty-one percent or more of the capital stock, if any, or assets of which is owned by a person or persons: (1) who are active in the daily affairs of the enterprise, (2) who have the power to direct the management and policies of the enterprise, and (3) who are members of a minority, as such term is defined in subsection (a) of Connecticut General Statutes § 32-9n; and
- x. "public works contract" means any agreement between any individual, firm or corporation and the State or any political subdivision of the State other than a municipality for construction, rehabilitation,

conversion, extension, demolition or repair of a public building, highway or other changes or improvements in real property, or which is financed in whole or in part by the State, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees.

For purposes of this Section, the terms "Contract" and "contract" do not include a contract where each contractor is (1) a political subdivision of the state, including, but not limited to, a municipality, (2) a quasi-public agency, as defined in Conn. Gen. Stat. Section 1-120, (3) any other state, including but not limited to any federally recognized Indian tribal governments, as defined in Conn. Gen. Stat. Section 1-267, (4) the federal government, (5) a foreign government, or (6) an agency of a subdivision, agency, state or government described in the immediately preceding enumerated items (1), (2), (3), (4) or (5).

- (b) (1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the State of Connecticut; and the Contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by the Contractor that such disability prevents performance of the work involved; (2) the Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Commission; (3) the Contractor agrees to provide each labor union or representative of workers with which the Contractor has a collective bargaining Agreement or other contract or understanding and each vendor with which the Contractor has a contract or understanding, a notice to be provided by the Commission, advising the labor union or workers' representative of the Contractor's commitments under this section and to post copies of the notice in conspicuous places available to employees and applicants for employment; (4) the Contractor agrees to comply with each provision of this Section and Connecticut General Statutes §§ 46a-68e and 46a-68f and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes §§ 46a-56, 46a-68e and 46a-68f; and (5) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor as relate to the provisions of this Section and Connecticut General Statutes § 46a-56. If the contract is a public works contract, the Contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works projects.

- (c) Determination of the Contractor's good faith efforts shall include, but shall not be limited to, the following factors: The Contractor's employment and subcontracting policies, patterns and practices; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or

efforts as the Commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.

- (d) The Contractor shall develop and maintain adequate documentation, in a manner prescribed by the Commission, of its good faith efforts.

- (e) The Contractor shall include the provisions of subsection (b) of this Section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with Connecticut General Statutes §46a-56; provided if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.

- (f) The Contractor agrees to comply with the regulations referred to in this Section as they exist on the date of this Contract and as they may be adopted or amended from time to time during the term of this Contract and any amendments thereto.

- (g) (1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or the State of Connecticut, and that employees are treated when employed without regard to their sexual orientation; (2) the Contractor agrees to provide each labor union or representative of workers with which such Contractor has a collective bargaining Agreement or other contract or understanding and each vendor with which such Contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the Contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment; (3) the Contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes § 46a-56; and (4) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor which relate to the provisions of this Section and Connecticut General Statutes § 46a-56.

(h) The Contractor shall include the provisions of the foregoing paragraph in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with Connecticut General Statutes § 46a-56; provided, if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.

I, the undersigned authorized official, hereby certify that these assurances shall be fully implemented.

Signature _____

Name (typed) _____

Title (typed) _____

Date _____

APPENDIX A

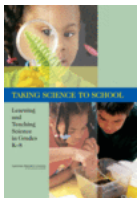
BIBLIOGRAPHY OF INFLUENTIAL RESEARCH ON EFFECTIVE SCIENCE INSTRUCTION

Science improvement projects eligible for funding under this grant must reflect the findings and recommendations in the following influential research reports:



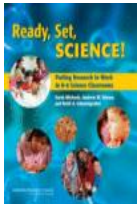
Effective Science Instruction: What Does Research Tell Us?

<http://www.centeroninstruction.org/files/Effective%20Sci%20Instruction%20Brief%202nd%20ed.pdf>



Taking Science to School: Learning and Teaching Science in Grades K-8. National Research Council. Washington,

DC: The National Academies Press, 2007. http://books.nap.edu/catalog.php?record_id=11625



Ready, Set, Science: Putting Research to Work in K-8 Science Classrooms. National Research Council.

Washington, DC: The National Academies Press, 2007. http://www.nap.edu/catalog.php?record_id=11882



Framework for K-12 Science Education: Practices, Crosscutting Concepts and Core ideas. National Research

Council. Washington, DC: The National Academies Press, 2012. http://www.nap.edu/catalog.php?record_id=13165



Next Generation Science Standards – Appendix F: Science and Engineering Practices in the NGSS.



The Nation's Report Card: Science in Action: Hands-On and Interactive Computer Tasks From the 2009 NAEP Science Assessment. <http://nces.ed.gov/nationsreportcard/pubs/main2009/2012468.asp>

APPENDIX B

EVALUATION INSTRUMENTS FOR STUDENT ENRICHMENT EXPERIENCES

Proposals for student learning experiences (Supplementary Project) will describe specific activities for K-8 students intended to effect changes in attitudes, confidence, knowledge, skills or awareness of science and science-related careers. Since student learning projects will vary in their intended outcomes and methods, project leaders should select from a variety of resources compiled by the Coalition for Science After School to plan, monitor and evaluate project impacts:

- Assessment Tools in Informal Science - <http://www.pearweb.org/atis/>

- Harvard Family Research Project - <http://www.hfrp.org/out-of-school-time>

- Out-of-School Time Resource Center -
<http://www.sp2.upenn.edu/ostrc/stem/STEMDocuments.html>

- Framework for Evaluating Impacts of Informal Science Education Projects -
http://informalscience.org/evaluations/eval_framework.pdf

- Informalscience.org - <http://informalscience.org/>