

CONNECTICUT STATE DEPARTMENT OF EDUCATION
Division of Teaching, Learning and Instructional Leadership
Bureau of Teaching and Learning

EDUCATION REFORM DISTRICT
K-8 SCIENCE IMPROVEMENT
GRANT APPLICATION

2012-13



STATUTE: Public Act No. 12(1) JSS, An Act Implementing Provisions of the State Budget for the Fiscal Year Beginning July 1, 2012

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

Published: November 19, 2012

Applications Due: December 14, 2012

Projected Funding Date: January 2, 2013

RFP 403



TABLE OF CONTENTS

	<u>Page</u>
PURPOSE.....	1
ELIGIBLE APPLICANTS.....	1
DEFINITIONS.....	1
SCIENCE IMPROVEMENT PROJECT CATEGORIES.....	2
QUALITY OF PROFESSIONAL LEARNING.....	3
PROJECT DESIGN.....	3
ELIGIBLE PARTNERS.....	4
ALLOWABLE USES OF GRANT FUNDS.....	5
GRANT INFORMATION.....	5
GRANTEE ACCOUNTABILITY.....	5
PROPOSAL EVALUATION CRITERIA.....	6
APPLICATION COVER PAGE.....	7
APPLICATION SUBMISSION INSTRUCTIONS.....	8
PROPOSAL NARRATIVE (CATEGORY A) – IMPROVED TEACHING PRACTICES.....	9
- BUDGET and BUDGET NARRATIVE (CATEGORY A).....	11
PROPOSAL NARRATIVE (CATEGORY B) – IMPROVED STUDENT LEARNING.....	15
- BUDGET and BUDGET NARRATIVE (CATEGORY B)	17
ATTACHMENT 1 – District Requirements.....	21
ATTACHMENT 2 – Statement of Assurances.....	22
APPENDIX A – Bibliography of Research on Effective Science Instruction.....	26
APPENDIX B – Category B Student Learning Projects – Impact Evaluation Instruments.....	27

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 No. 12(1) JSS, An Act Implementing Provisions of the State Budget for the Fiscal Year Beginning July 1, 2012, 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 educational reform districts, as defined in Sect. 34 of PA 12-116, 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:

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

Enhanced teaching practices are but one factor that can contribute to improved student science learning. For measurable schoolwide science improvement to occur, several important elements of a science education program must be in place: teachers and students should have adequate **time** for learning science, a **curriculum** that contextualizes state standards to engage students, as well as 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
- 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
- understand and use probability and statistical methods to test hypotheses and support claims

IV. SCIENCE IMPROVEMENT PROJECT CATEGORIES

Proposed science improvement interventions under this grant must provide (A) professional learning for teachers; and may provide (B) learning experiences for students, as described more fully below:

CATEGORY A: MEASUREABLE IMPROVEMENT IN TEACHING PRACTICES. Proposed intervention programs will address one or more of the following focus areas to improve teaching in K-2, 3-5, **or** 6-8 grade bands:

- 1) Effective, research-based **science instructional strategies** (see Appendix A)
- 2) Enhancement of **teacher content knowledge** needed to confidently teach selected science and mathematics concepts in [Connecticut K-8 Science Curriculum Standards](#) or [Framework for K-12 Science Education](#) (National Research Council, 2012); and [Common Core State Standards for Mathematics](#).
- 3) Effective **implementation** of CSDE [curriculum-embedded performance tasks](#) and inquiry feedback rubrics (Gr. 3-8)
- 4) Pedagogy for integration of **Science and Engineering Practices and Core Ideas** within science lessons. Selected Science and Engineering Practices drawn from NRC [Framework for K-12 Science Education](#) (NRC Framework, Ch. 3)
- 5) Pedagogy for integration of **Common Core English language arts standards within standards-based science lessons** (e.g., CSDE curriculum-embedded tasks)
- 6) Pedagogy for integration of **Common Core Mathematics standards within standards-based science lessons**

CATEGORY B: MEASUREABLE IMPROVEMENT IN STUDENT LEARNING. Such programs will provide direct learning experiences for students. These experiences may be designed to accomplish any, or all, of the

following outcomes for students (adapted from outcome categories defined by the National Science Foundation in its [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
- 5) CAREER AWARENESS (especially for Gr 6-8): Understand how academic science and engineering transfer to career and work experiences

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.

V. QUALITY OF PROFESSIONAL LEARNING

Professional learning for teachers is designed to **build school capacity for long-term, sustainable enhancement of science instruction**. Such professional learning can take many forms, such as job-embedded instructional coaching by qualified K-8 science teaching specialists; professional learning communities; and on-line learning modules and courses. All of these approaches should include enhanced opportunities for scheduled **collaborations** among teachers and between teachers and professional learning providers. Effective teaching methods and strategies addressed in the proposed project should be **sustained, be broadly applicable in the classroom**, and should not be limited to instruction in how to use a specific set of instructional materials.

Interventions designed to enhance teaching practices will be aligned with the following standards:

- [Connecticut Core Science Curriculum Framework](#) (2004) – standards for science content and scientific inquiry;
- [Connecticut K-8 Curriculum Standards, Grade-Level Concepts and Assessment Expectations](#) (2008);
- [Framework for K-12 Science Education](#) (National Resource Council, 2012) – 3 Dimensions of science education: Scientific Practices, Core Ideas and Crosscutting Concepts; and
- Standards for Professional Learning (<http://www.learningforward.org/standards>).

VI. PROJECT DESIGN

Proposed science improvement projects should be designed to address the unique needs and goals of the participating school(s). Science initiatives should be designed around (a) trends in relevant student achievement data; (b) the district’s articulated improvement goals as specified in their Alliance District plan; and (c) the specific needs of the teachers and students within the participating schools. For example, ERDs that have adopted “extended learning time” initiatives may describe [how the science improvement goals correlate with the extended learning time](#).

The professional learning and student activities funded with this grant should be **sufficiently sustained and robust** so they are likely to result in achievement of the projects’ goals. The enhanced teaching practices proposed 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. Preference will be given to projects that propose **science improvement projects** that are directly linked to other district goals and initiatives.

The applicant school principal(s) and a district science leader must 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.

Careful consideration should be given to designing science improvement projects that:

- are sufficiently intensive so as to lead to observable changes in teaching practices likely to enhance student achievement;
- result in improved student achievement on state and district science assessments; and
- are on-going (not one-time events) and sustainable over time.

Note that impact on teaching practices and student achievement 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, precise and measurable goals. For example, “More teachers teaching science through inquiry” is too vague to be measurable. Specific practices and student outcomes should be stated.

VII. 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 and nature center educators, after-school science programs, state agencies, private vendors, and other organizations with **well-documented expertise** in the following areas:

- Connecticut and Next Generation science standards;
- current research and influential publications on effective science education;
- design and delivery of sustained and effective professional learning experiences for educators; and
- challenges and solutions for K-8 science educators.

Priority will be given to applicants 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.

ERDs are responsible for selecting professional learning partners that can document experience in facilitating science improvement interventions for teachers and students that **have resulted in documented changes in teaching practices and improvements in student learning**. Specifically, professional learning providers should offer evidence of expertise in the following areas:

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

VIII. 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; and
- 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 addressed in the teacher or student learning 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.

IX. GRANT INFORMATION

- Award period: January through June 2013
- All funds awarded under this grant must be encumbered no later than June 30, 2013 and expended no later than August 31, 2013. Learning activities may occur during the school year and/or during summer 2013.
- Total amount available: \$455,000
- Number of awards: up to 10 (amounts depending on number and quality of proposals)
- Award amounts are payable in monthly draws, as needed for upcoming expenses

A proposal development Bidder's Teleconference will take place on Monday, November 26 from 10:30-11:30 a.m.

ERD officials, administrators and district or school science leaders will receive information from CSDE Science Education Consultant Elizabeth Buttner about this new state grant program for K-8 science education improvement. Expectations for project design, quality, impact and monitoring will be clarified. Questions about potential project goals and partners will be fielded. NOTE: this webinar is only for ERD school district leaders.

To join the teleconference: CALL 866-796-3352 and enter PASSCODE: 8675431

X. GRANTEE ACCOUNTABILITY

Interventions funded with this grant should produce measurable improvements in the teaching and learning of K-8 science. Grantees must collect evidence and data to closely monitor the quality and impact of proposed interventions. Formative project monitoring and adjustment should be done throughout the school year. **A summative impact evaluation report will be submitted by the ERD at the conclusion of the funded activities.** Project design and impact evaluation should be carried out following the principles of Results-Based Accountability (RBA) adopted by the Connecticut General Assembly:

RBA Overview: http://www.ct.gov/caes/lib/caes/documents/mosquito_management/rba.pdf

Powerpoint: http://www.cga.ct.gov/app/rba/AgencyTraining/RBA%20101%20for%20State%20Agencies_9%2016%2010.

Grantees will submit a final **Project Impact Report to CSDE** within 30 days of the completion of all grant-funded interventions. The report will include quantitative and qualitative indicators collected per the Project Impact Evaluation Plan (see Proposal Narrative, Question 5).

XI. 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. Evidence of the need for K-8 science program improvement, and of the schools' commitment to such improvement
2. Clarity and measurability of goals and intended outcomes
3. Alignment of project design with standards and research
4. Quality of the planned intervention(s) and of the service provider partners
5. Likelihood of successful achievement of the goals
6. Reasonableness of the costs
7. Potential for sustaining long-term impacts

APPLICATION COVER PAGE

**Connecticut State Department of Education
Bureau of Teaching and Learning**

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: DECEMBER 14, 2012

PROPOSAL DEVELOPMENT BIDDER'S TELECONFERENCE: MONDAY, NOVEMBER 26 from 10:00 – 11:00 a.m.

ERD officials, administrators and district or school science leaders will receive information from CSDE Science Education Consultant Elizabeth Buttner about this new state grant program for K-8 science education improvement. Expectations for project design, quality, impact and monitoring will be clarified. Questions about potential project goals and partners will be fielded. NOTE: this webinar is only for ERD school district leaders.

To join the teleconference: CALL 866-796-3352 and enter PASSCODE: 8675431

PROPOSAL COMPONENTS TO SUBMIT:

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

SUBMIT AS ONE PDF DOCUMENT TO:

Elizabeth Buttner, Science Education Consultant

E-mail: Elizabeth.buttner@ct.gov

Phone: 860-713-6849

PROJECT CATEGORY A – (REQUIRED)

PROPOSAL NARRATIVE– IMPROVED TEACHING PRACTICES

CATEGORY A: MEASUREABLE IMPROVEMENT IN TEACHING PRACTICES. Proposed professional development programs will address one or more 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 the targeted grade band for the proposed science improvement project. CHECK ALL THAT APPLY:

✓	PROFESSIONAL DEVELOPMENT PROJECT FOCUS	GRADE BAND(S)
	1. Effective, research-based science instructional strategies (see Appendix C)	
	2. Enhancement of teacher content knowledge needed to confidently teach selected science and mathematics concepts in Connecticut K-8 Science Curriculum Standards or Framework for K-12 Science Education (National Research Council, 2012); and Common Core State Standards for Mathematics .	
	3. Effective implementation of CSDE curriculum-embedded performance tasks and inquiry feedback rubrics (Gr. 3-8)	
	4. Pedagogy for integration of Science and Engineering Practices and Core Ideas within science lessons Selected Science and Engineering Practices drawn from NRC Framework for K-12 Science Education (NRC Framework, Ch. 3)	
	5. Pedagogy for integration of Common Core English language arts standards within standards-based science lessons (e.g., CSDE curriculum-embedded tasks)	
	6. Pedagogy for integration of Common Core Mathematics standards within standards-based science lessons	

Describe the proposed science teaching improvement project by responding to the following prompts in the order in which they appear below (**5 pages maximum; single-spaced**):

- Needs** - Describe the current condition of the K-8 science program. Identify strengths and areas for improvement (refer to program components mentioned in Section II – Eligible Districts). Cite CMT Science trend data in specific strands or subcategories, as well as other quantitative and qualitative indicators of program quality, such as status of the curriculum, instruction, assessments, teacher content knowledge, etc.
- Goals and Outcomes** - Based on evidence included in the Needs section, what improvements is the proposed project designed to make? For each project focus area checked in the above table, list the TEACHING IMPROVEMENT goals of the science improvement project in the chart below:

GOAL	OBSERVABLE OUTCOME (Teachers will be able to...)
1.	
2.	
3.	

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).

3. Alliance District Plan - Explain how the science improvement goals connect with and how they are expected to contribute to other district initiatives.
4. Project Description - Describe in detail the proposed professional learning program for teachers. Make the case for why the planned intervention is likely to achieve the goals and outcomes stated above:
 - i. What will teachers learn? - Refer to Section IV and describe precisely what teachers will learn to do and how these changes in teaching practice are expected to impact student learning.
 - ii. Which educators will be engaged? – Describe the number of faculty members who will participate in the professional learning intervention, their roles, and what percentage of the entire school faculty they represent. Explain how the selected faculty are appropriate and sufficient to achieve measurable school impacts.
 - iii. How will they learn? - Describe the plan for professional learning: the guiding principles, format, frequency and duration (total hours) of the training. Refer to Section IV- Qualities of Professional Learning and Section V - Project Design. Refer also to the research base that supports this intervention approach (Appendix A).
 - iv. Who will facilitate the professional learning and what is the evidence of their expertise and prior success in the areas listed in Section VI - Eligible Partners?
5. Project Impact Evaluation Plan – Describe how the progress toward intended project outcomes will be measured. What will serve as evidence of the desired changes in teaching practice? What methods and instruments will be used to collect data (quantitative and qualitative) as evidence of impact?
6. Project Sustainability Plan – Explain how the intended impacts of the intervention can be sustained beyond the grant period.

**PROJECT CATEGORY A - TEACHER PROFESSIONAL DEVELOPMENT
ED 114 Budget and Budget Narrative**

FISCAL YEAR 2012-13

GRANTEE NAME (Fiscal Agent):		TOWN CODE:
PROJECT TITLE:		
ACCOUNTING CLASSIFICATIONS:		
FUND: 11000 SPID: 12543 PROGRAM: 84158 BUDGET: 2013 CHARTFIELD1: 170004 CTFD 2: SDE00070		
Project Code: SDE000000000008		
GRANT PERIOD: 01/02/2013 to 6/30/2013		AUTHORIZED AMOUNT:
CODE	DESCRIPTION	BUDGET AMOUNT
111A	ADMINISTRATOR/SUPERVISOR SALARIES	
111B	TEACHERS	
119	OTHER	
321	TUTORS*	
322	INSERVICE (INSTRUCTIONAL PROGRAM IMPROVEMENT SERVICES)*	
530	COMMUNICATION	
560	TUITION	
580	TRAVEL	
611	INSTRUCTIONAL SUPPLIES	
612	ADMINISTRATIVE SUPPLIES	
642	LIBRARY BOOKS (AND PERIODICALS)	
890	OTHER OBJECTS (MISCELLANEOUS EXPENDITURES)	
	TOTAL	

Budget Narrative – Teacher Professional Development

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>	
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>	

CODE	OBJECT	AMOUNT
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>	
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	Administrative supplies Expenditures for consumable items directly related to program administrative (non-instructional) activities.	
642	Library books (and periodicals)	
	Expenditures for library books, reference books, periodicals and newspapers that are purchased for use by the school library.	
890	Other objects (Miscellaneous Expenditures) Expenditures for goods or services not properly classified in one of the above objects.	
	TOTAL	

PROJECT CATEGORY B (OPTIONAL)

PROPOSAL NARRATIVE– IMPROVED STUDENT LEARNING

CATEGORY B: MEASUREABLE IMPROVEMENT IN STUDENT LEARNING. Such programs will provide direct learning experiences for students. These experiences may be designed to accomplish any, or all, of the following for students in K-2, 3-5 or 6-8 grade bands.

Check below the focus area(s) and the targeted grade band for the proposed science improvement project. CHECK ALL THAT APPLY:

✓	STUDENT LEARNING 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 (especially for Gr 6-8): Understand how science and science-related content transfer to career and work experiences	

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

1. Goals and Outcomes – Based on evidence included in the Needs Assessment, what improvements is the proposed project designed to make? For each project focus area checked in the above table, list the STUDENT LEARNING goals of the science improvement project in the chart below:

GOAL	OBSERVABLE OUTCOME (Students will....)
1.	
2.	
3.	

2. Alliance District Plan - Explain how the student learning goals of the science improvement project connect with and contribute to other district initiatives.
3. Project Description - Describe in detail the proposed student learning activity. Make the case for why the planned intervention is likely to achieve the goals and outcomes stated above:
 - a. What will students learn? Describe precisely what students will learn and how this experience is intended to impact the student's academic achievement, attitude, interest, knowledge and/or aspirations. Refer to Section IV and to the research on Informal Science Education
 - b. Which students will be engaged? – Describe the number of students at each grade who will participate in the student learning intervention and what percentage of the entire school population they represent. Explain how the selected students are appropriate and sufficient to achieve measurable impacts on the schools' academic achievement in science.
 - c. How will they learn? - Describe the plan for this student learning experience: the guiding principles, format, frequency and duration (total hours) of the experience. Refer to Section III – Project Categories and Section V - Project Design. Refer also to the research base that supports this intervention approach (Appendix A).
 - d. Who will facilitate the student experiences and what is the evidence of their expertise and prior success in the areas listed in Section VI - Eligible Partners?
4. Project Impact Evaluation Plan – Describe how the progress toward intended project outcomes will be measured. What will serve as evidence of the desired changes in teaching practice? What methods and instruments will be used to collect data (quantitative and qualitative) as evidence of impact? Refer to Appendix B.
5. Project Sustainability Plan - Explain how the intended impacts of the intervention can be sustained beyond the grant period.

**PROJECT CATEGORY B – IMPROVED STUDENT LEARNING
ED 114 Budget and Budget Narrative**

FISCAL YEAR 2012-13

GRANTEE NAME (Fiscal Agent):		TOWN CODE:
PROJECT TITLE:		
ACCOUNTING CLASSIFICATIONS:		
FUND: 11000 SPID: 12543 PROGRAM: 82164 BUDGET: 2013 CHARTFIELD1: 170101 CTFD 2:		
GRANT PERIOD: 01/02/2013 to 6/30/2013		AUTHORIZED AMOUNT:
CODE	DESCRIPTION	BUDGET AMOUNT
111A	ADMINISTRATOR/SUPERVISOR SALARIES	
111B	TEACHERS	
112A	EDUCATION AIDES	
112B	CLERICAL	
119	OTHER	
321	TUTORS (INSTRUCTIONAL NON-PAYROLL SERVICES)	
324	FIELD TRIPS	
325	PARENT ACTIVITIES	
510	PUPIL TRANSPORTATION	
530	COMMUNICATION	
560	TUITION	
611	INSTRUCTIONAL SUPPLIES	
890	OTHER OBJECTS (MISCELLANEOUS EXPENDITURES)	
	TOTAL	

Budget Narrative – Improved Student Learning

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. Included can be janitorial personnel costs, grant activity coordinators' salaries, and food service personnel.</p>	
321	<p>Tutors (Instructional Non-Payroll Services)</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>	
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>	
325	<p>Parent activities</p> <p>Expenditures related to services for parenting, including workshop presenters, counseling services, babysitting services, and overall seminar/workshop costs.</p>	

CODE	OBJECT	AMOUNT
510	Pupil transportation 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.	
530	Communication 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.	
560	Tuition Expenditures to reimburse other educational agencies for instructional services to pupils.	
611	Instructional supplies Expenditures for consumable items purchased for instructional use.	
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-Gr.2: a minimum of 2 hours per week of experiential science instruction during the school day;
 - b. Gr. 3-5: a minimum of 3 hours per week of experiential science instruction during the school day;
 - c. Gr. 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:

- 1) For the purposes of this section, “Commission” means the Commission on Human Rights and Opportunities.

For the purposes of this section, “minority business enterprise” means any small contractor or supplier of materials and 51 percent or more of the capital stock or assets must be 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 Section 32-9n of the C.G.S. and “good faith” means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations. “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.

- 2) (a) 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, mental retardation 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 the State of Connecticut. The contractor further agrees to take affirmative action to ensure 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, mental retardation 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; (b) the contractor agrees that all solicitations or advertisements for employees placed by or on behalf of the contractor, state that it is an “affirmative action-equal opportunity employer” in accordance with regulations adopted by the Commission; (c) the contractor agrees to provide each labor union, representative of workers and vendors with which such contractor has a collective bargaining agreement or other contract or understanding, a notice to be provided by the Commission advising the labor union, workers’ representative or vendors 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; (d) the contractor agrees to comply with each provision of this section and Sections 46a-68e and 46a-68f of the C.G.S. and with each regulation or relevant order issued by said Commission pursuant to Sections 46a-56, 46a-68e and 46a-68f of the C.G.S.; (e) 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 they relate to the provisions of this section and Section 46a-56 of the C.G.S.

- 3) 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.
- 4) The contractor shall develop and maintain adequate documentation in a manner prescribed by the Commission of its "good faith efforts".
- 5) The contractor shall include the provisions of section (2) above in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state. 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 Section 46a-56 of the C.G.S. 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.
- 6) The contractor agrees to comply with the regulations referred to in this section as the term of this contract and any amendments thereto as they exist on the date of the contract and as they may be adopted or amended from time to time during the term of this contract and any amendments thereto.
- 7) (a) 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; (b) the contractor agrees to provide each labor union, representative of workers and vendors with which such contractor has a collective bargaining agreement or other contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union, workers' representative and vendors 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; (c) the contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said Commission pursuant to Section 46a-56 of the C.G.S.; and (d) 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 Section 46a-56.
- 8) The contractor shall include the provisions of section (7) above 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 Section 46a-56 of the C.G.S. 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) _____

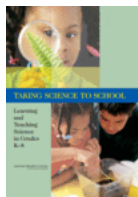
Title (typed) _____

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:



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



Effective Science Instruction: What Does Research Tell Us?
<http://www.centeroninstruction.org/files/Effective%20Sci%20Instruction%20Brief%202nd%20ed.pdf>



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

CATEGORY B - PROJECT IMPACT EVALUATION INSTRUMENTS

Proposals for student learning initiatives (Category B) 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:

http://www.afterschoolscience.org/resources/assessment_evaluation/resources.php#five