

alleviate achievement gaps among race, gender, and socioeconomic student sub groups, (2) the need to ensure equitable access to technology for every student regardless of race, gender, economic status or disability, and (3) the need to provide research-based professional development so that all teachers can employ best practices for technology integration and positively impact student achievement.

Achievement gaps needs related to technology. Most recent AEIS data show significant gaps in achievement among student sub-groups. Specifically, White students consistently post higher TAAS score and TLI growth indicators than do Hispanic and African American students. Female students tend to demonstrate higher achievement than do male students and students who are identified as economically disadvantaged consistently score lower on all academic indicators. In both Tyler and Whitehouse ISD, the most significant differences were found in 3rd grade reading and math scores with an 11% difference between African American and White students (in Tyler) and a 48% difference between African American students (in Whitehouse). Additionally, AEIS data indicate a significant difference in students' achievement at the 3rd and 4th grade levels when compared to achievement at the upper grades (through 8th grade). While many factors may explain these findings, such as student age and test-taking skills, we cannot ignore a demonstrated need in any area. The least, although still statistically significant, differences were found among 7th grade students and between males and females at all grade levels and in all tested areas. AIES data for the schools participating in the **Lab in a Bag** project show a demonstrated need to close the achievement gaps that exist among African American, Hispanic and White students, between male and female students and for students who are identified as economically disadvantaged.

At the beginning of the planning phase for this TARGET grant, the instructional technology team developed a plan to address needs of middle school students first, high school students during the second year and elementary students during the third and final funding year. After examining AEIS data and STaR chart data, the planning team noted the most pressing needs to address achievement gaps at the 3rd and 4th grade levels. Campus STaR chart data indicate significant needs related to technology in the following areas:

- need to increase teacher use of technology for instructional purpose,
- need to increase use of technology across the curriculum
- need to increase student use of technology as a learning tool

Recent research (see Appendix B) has demonstrated that when students use technology as part of a challenging curriculum, achievement indicators, such as test scores and grades, improve. After studying the campus STaR chart data, we refocused the project to emphasize work at the 3rd and 4th grades because those grades presented the most significant needs. By starting the project with 3rd and 4th graders and continuing for three years (contingent upon funding), we will be able to follow these students through three years of intensive instruction and technology integration.

Technology need for equitable access. To determine local needs for equitable access to technology, we analyzed campus STaR charts for the twenty-five separate public schools campuses that will participate in the **Lab in a Bag** project. Not one campus ranked at the Target level for student-to-computer ratio. Two of the twenty-five campuses ranked at the Advanced level for student access to technology. Three ranked at the Early level for equitable access and 80% ranked at the Developing level for equitable student access to technology.

Since local demographic data show 27% or more of the population at the targeted campuses ranking at or below the poverty level, it stands to reason that school may be the single opportunity for students to gain access to technology. With 80% of targeted campuses failing to provide equitable student access, we find a demonstrated need to provide additional equipment in this district. The **Lab in a Bag** project was designed with an emphasis on hand-held technology so that we could “literally” put instructional technology into the hands of our students.

Needs related to technology integration. Campus STaR charts provide clear data regarding need for educators to engage in intensive professional development. Gaps were noted in educators' knowledge of collaborative strategies for technology integration. Ninety-nine percent of campuses report a need for teachers to understand the teacher's role in technology integration and collaborative learning. Less than 20% of teachers use technology currently available in their district. In the area of curriculum development and meeting the Technology Application TEKS, less than 20% of campuses rank in the Advanced or Target level. Approximately 80% are in the Developing range with less than 1% in the Early stages of technology integration. While it may be promising that 80% are developing integration skills, our students require best practices now to close achievement gaps. Research explains how students benefit from challenging curriculum that is aligned to stated standards and delivered via an integrated approach. (See research citations from Vygotsky, Glistler, and Wenglinisky with brief annotations in Appendix B). We understand how a challenging curriculum, delivered at the hands of well-trained educators can alleviate achievement gaps. We have seen results with small numbers of educators who participated in previous technology integration initiatives. Our data point to one overriding need:

- need to train educators in best practices for *teaching* so that our students can also engage in best practices for *learning*.

This need is of such importance to the **Lab in a Bag** project, that fully 1/3 of our proposed budget addresses research-based professional development.

Specific local objectives, strategies and activities have been designed to address our identified needs and address the goals of the TARGET grant program. In the follow schedules, we present an overview of the **Lab in a Bag** proposed project, outline strategies, objectives and activities for successful implementation and offer a rigorous evaluation design.

Local Objectives

As indicated on the following schedules, we have developed six major local objectives to address achievement gaps, lack of teacher use of technology for instructional purposes and lack of equitable access across the district. These objectives are listed below. A thorough discussion is provided in Schedule #4B – Part 1.

Local objectives related to achievement gaps. To address achievement gaps among student population sub groups, the **Lab in a Bag** project will:

1. Research and develop a challenging, integrated curriculum focusing on using hand-held technology to understand math and science concepts.
2. Deliver this curriculum in a technology-rich, fully integrated environment.

We anticipate an immediate gain in motivation and engagement in learning activities as a result of developing and implementing a fully integrated curriculum in a technology-rich environment. Further, we anticipate long-term gains in student achievement indicators, such as standardized test scores and local grades.

Local objectives related to equitable access. As discussed earlier, local campus STaR chart data report an alarming need to address student access to technology. Research continues to show that the one computer classroom plays a significant role in using technology for teaching; however, does little to address student access to computers and other valuable technology tools. The **Lab in a Bag** project provides two local objectives designed to address equitable access:

3. Coordinate all local, state and federal funding, projects and activities to maximize use of available resources.
4. Provide traditional and hand-held technology tools, such as calculators, scientific probes, microscopes and wireless computers to increase students' use of all available technology.

We expect immediate gains in students' use of technology tools, including traditional tools, such as computers and printers, and we expect to see increases in students' use of content specific tools, such as graphing calculators, scientific probes, hand-held digital microscopes, and interactive learning systems. The **Lab in a Bag** project provides ways to put technology tools into the hands of every child. Long-term gains will be seen as the equipment purchased for this project, including computers, LCD projectors, Classroom Performance Systems interactive learning units and others will be distributed to each targeted campus for additional student access.

Local objectives related to technology integration. Campus STaR chart data indicate a need for teachers to understand their role in the technology-rich, collaborative learning environment. Further, specific technology needs were noted in a need for professional development. The **Lab in a Bag** project addresses these needs with objectives directly related to training and continuing professional growth and development:

5. Develop a cadre of technology integration mentor teachers.
6. Provide research-based professional development that focuses on best practices for effective technology integration and proven to show gains in student achievement.

We anticipate immediate gains in teacher technology proficiency and long-term permanent gains in teachers' use of technology as a teaching and learning tools. We anticipate these gains because previous work with a similar professional development and support model has shown significant achievement in teaching and learning. We support developing educators with instructional aides, administrative staff and a host of technology mentors, whom we call "Cognitive Coaches." These "coaches" support both educators and learners throughout the life of the **Lab in a Bag** project. For a graphic overview of the organization scheme, including the role of the Cognitive Coaches, see Appendix F.

TEXAS EDUCATION AGENCY
Standard Application System (SAS)
Technology Applications Readiness Grants for Empowering Texas (TARGET)
School Year 2002-2003

County District No. 212-905

Amendment No. _____

SCHEDULE #4A--
Program Abstract (continued)
(Including Needs and Objectives)

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Adjustments and/or annotations made on this have been confirmed with _____
by telephone/FAX on _____ of TEA.

A	B	C	D	E	F	G
Participating High-Need Campus Name(s)	High Poverty Campus	Title I School Improvement Campus	Substantial Need Campus	Insufficient Title II Formula Technology Funds	Specific Needs Related to Technology	Objectives to Address Identified Needs
Year 1 - 2 Austin Elem. Birdwell Bonner Caldwell Dixie Douglas Griffin Jones Orr Peete Ramey Rice Woods	X X X X X X X X X X X X X X		X X X X X X X X X X X X X X	X X X X X X X X X X X X X X	<ul style="list-style-type: none"> • Increase teacher technology proficiency • Increase instructional use • Use collaborative strategies • Use technology in content areas • Meet TA TEKS • Increase student use • Equitable student access 	Local Obj. 5 Technology Integration mentoring Local Obj. 6 Professional development Local Obj. 1 Develop integrated curriculum Local Obj. 2 Deliver integrated curriculum Local Obj. 1. Develop integrated curriculum Local Obj. 4. Provide traditional technology and hand-held learning devices Local Obj. 3 Coordinate funding to maximize access to resources.
Years 2 - 3 Boulter MS Dogana MS Stewart-Edison MS	X X X	X	X X X	X X X	<ul style="list-style-type: none"> • Increase instructional use • Use collaborative strategies • Meet TA TEKS • Equitable student access 	Local Obj. 6 Professional development Local Obj. 1 Develop integrated curriculum Local Obj. 1. Develop integrated curriculum Local Obj. 3 Coordinate funding to maximize access to resources.
Years 2 - 3 Hogg MS Moore MS	X X		X X	X X	<ul style="list-style-type: none"> • Increase instructional use • Use collaborative strategies • Equitable student access 	Local Obj. 6 Professional development Local Obj. 1 Develop integrated curriculum Local Obj. 3 Coordinate funding to maximize access to resources.

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by _____ of TEA.

**TEXAS EDUCATION AGENCY
Standard Application System (SAS)
Technology Applications Readiness Grants for Empowering Texas
(TARGET)**

**School Year 2002-2003
SCHEDULE #4A--**

**Program Abstract (continued)
(Including Needs and Objectives)**

County District No. 212-905

Amendment No. _____

Participating Non-High Need Campus Name (Other than mentor campus)	Specific Need(s) Related to Technology	Objectives to Address Identified Needs
PUBLIC SCHOOLS - TYLER ISD Bell Elementary Clarkston Owens Rice Woods	<ul style="list-style-type: none"> • Increase teacher technology proficiency • Increase instructional use • Use collaborative strategies • Use technology in content areas • Meet TA TEKS • Increase student use • Equitable student access • Increase teacher proficiency • Increase instructional use • Use collaborative strategies 	Local Obj. 5 Technology integration mentoring Local Obj. 6 Professional development Local Obj. 1 Develop integrated curriculum Local Obj. 2 Deliver integrated curriculum Local Obj. 1. Develop integrated curriculum Local Obj. 4. Provide traditional technology and hand-held learning devices Local Obj. 3 Coordinate funding to maximize access to resources. Local Obj. 5 Technology integration mentoring Local Obj. 6 Professional development Local Obj. 1 Develop integrated curriculum
Hubbard Middle School	<ul style="list-style-type: none"> • Increase student use • Use collaborative strategies 	Local Obj. 1 Develop integrated curriculum
PUBLIC SCHOOLS - WHITEHOUSE Brown Elementary Higgins Intermediate Whitehouse Jr. High	<ul style="list-style-type: none"> • Increase teacher technology proficiency • Increase instructional use • Use collaborative strategies • Use technology in content areas • Meet TA TEKS • Increase student use • Equitable student access 	Local Obj. 5 Technology integration mentoring Local Obj. 6 Professional development Local Obj. 1 Develop integrated curriculum Local Obj. 2 Deliver integrated curriculum Local Obj. 1. Develop integrated curriculum Local Obj. 4. Provide traditional technology and hand-held learning devices Local Obj. 3 Coordinate funding to maximize access to resources. Local Obj. 5 Technology integration mentoring Local Obj. 6 Professional development
PRIVATE SCHOOLS East Texas Christian Academy Stepping Stone School St. Gregory Elementary School TK Gorman Middle School	<ul style="list-style-type: none"> • Increase teacher technology proficiency • Increase instructional use 	Local Obj. 5 Technology integration mentoring Local Obj. 6 Professional development
Participating Mentor Campus Name(s) N/A	Specific Need(s) Related to Technology N/A	Objectives to Address Identified Needs N/A

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by _____ of TEA.

TEXAS EDUCATION AGENCY
Standard Application System (SAS)
Technology Applications Readiness Grants for Empowering Texas
(TARGET)
School Year 2002-2003
SCHEDULE #4B--
Program Description- Part 1
Program Requirements

212-905
County District No.

Amendment No. _____

Limit to 5 pages, front side only, font size not less than 9 point.

Introduction

In the heart of the historic district in this east Texas city, the stately white-columned Caldwell House, built in the late 19th century, serves as a gentle reminder of the power of partnership and learning. In 1937, Mr. and Mrs. Caldwell developed a backyard menagerie to nurture a love for learning in a way that would reach all children. Each afternoon, students from Gary Elementary School would cross the tree-lined, brick-paved street to visit with the Caldwell's petting zoo and learn more about the world by learning more about animals in a hands-on environment. As interest in the petting zoo grew, the Caldwell's offered their farm to become what is now known as the Caldwell Zoo. The proposed **Lab in a Bag** project honors the Caldwell's commitment to partnership and *hands-on learning* by developing an educational collaborative partnership dedicated to student achievement through *hand-held learning*. This collaborative, including participants from public and private schools, local entities, a state university and one state agency, offers all students a technology-rich, fully integrated curriculum with an emphasis on best practices to foster engaged learning. The goals of the **Lab in a Bag** project are to improve student academic achievement, ensure technology literacy and to integrate technology across the curriculum through research-based instructional methods and the implementation of best practices and improve student access to technology tools. The following sections describe the proposed **Lab in a Bag** project and address all Program Requirements.

Theoretical Foundation

The proposed **Lab in a Bag** project is grounded in instructional and educational technology research. Our instructional perspective is based in the work of L. S. Vygotsky (1967) and follows Vygotskian principles requiring a rigorous curriculum, accelerated instruction, peer mediated learning and a focus on communicating newly learned concepts. Professional development offered throughout the proposed project teaches Vygotskian principles and guides educators to implement each one successfully.

We build upon a technology integration philosophy supported by Jamie McKenzie's (2000) and Paul Glister's (1998) work in the field (please see Appendix B for a complete annotated, reference list). To support our work, we also draw from recent field research including Wenglinsky's (1998) study of the effects of technology integration on math achievement among 4th – 8th graders. In this study, Wenglinsky found that student achievement is positively impacted when technology integration (1) directly correlates to stated curriculum objectives, such as the TEKS, (2) allows for student collaboration, (3) provides for the development of cross-curricular student projects, and (4) requires that students use technology tools to communicate what they learn. Similarly, Newberry (1999) and Hickey, et.al (2001) found that technology integration leads to greater student achievement, particularly in math and science. Finally, we site our own field-based research (see Bryan, et.al.1999) describing tangible gains in instructional skill and student achievement

Background of the Lab in a Bag Project

The proposed Tyler ISD collaborative TARGET grant, the **Lab in a Bag** project builds on knowledge, equipment, curriculum, and training gained through four years of technology integration initiatives in Tyler ISD. One of the first technology integration initiatives was the Ellis Island integration project, developed and delivered during the 1998 – 1999 academic year and funded through the Title I program. Most recently, Tyler ISD implemented the *teachers.edu* project, which was funded with \$650,000 under the Technology Integration in Education (TIE) grant program (see <http://www.tyler.sprnet.org/TIE/800x600/tieindexmac.htm>). This TARGET proposal is developed from a research base that includes best practices, relevant research in technology integration and local district data that supports continued initiatives for technology integration.

Planning the Proposed Lab in a Bag Project

Prior to developing this TARGET application, members of the Tyler ISD Instructional Team met to review the TARGET RFP, the district long-range plan for technology integration, current campus STaR chart data, and analyze results from previous TISD technology integration initiatives. Additionally, we prepared a newspaper article and television announcement seeking public input, as required in Schedule #6E, Provision I. To collect ideas, suggestions and comments from the public, we established a dedicated, free phone line and a link to the Tyler ISD web site. (For more information, please see Appendix C.)

Description of the Lab in a Bag Project

The proposed **Lab in a Bag** project puts technology – literally -- into educators' and learners' hands with array of hand-held and wireless technology devices to facilitate student achievement in math, science, reading and writing skills at the 3rd – 8th grades. The **Lab in a Bag** project provides intensive training for participating public and private educators, including in-service teachers, administrators, librarians, and other instructional support personnel, and gives opportunity for preservice teachers at the University of Texas at Tyler to participate in the project. The UT Tyler College of Education serves as a key partner in this grant, assisting with curriculum development, training and guiding UT Tyler preservice teachers throughout the life of the project. Additional partners include the Discovery Science Place in Tyler, Texas, the Texas Parks and Wildlife, and the Caldwell Foundation.

During the first funded year of the proposed **Lab in a Bag** project, 48 selected educators at the 3rd and 4th grades in Tyler ISD and Whitehouse ISD plus the three participating private schools, and a select group of preservice teachers from UT Tyler receive technology training to use scientific probes, calculators, digital cameras, scanners and wireless laptop computers. Regional public and private educators are selected through an application and interview process; however, special consideration is given to educators who

apply from high-need campuses. Educators must commit to intensive training, including 9 hours of graduate work at UT Tyler, participation in the summer school technology camp, and demonstrate a desire to enhance instructional skills to promote student achievement through technology. College of Education faculty from UT Tyler will select preservice candidates to participate.

Forty-eight educators will learn effective ways to develop curriculum that addresses the state science, math, language arts and technology applications curriculum. Following intensive training, participants work with technology mentors, called “cognitive coaches” to develop and deliver the **Lab in a Bag Technology Camp**. This program serves 360 3rd and 4th graders and focuses on a study of animals at the Caldwell Zoo in Tyler. Students and educators will collect and analyze data using the hand-held devices and develop multimedia projects to share what they learn. Following their participation in the proposed **Lab in a Bag** project, these educators serve as mentors, sharing new instructional knowledge, technology skills and equipment with colleagues at their public and private campuses. (For a graphic overview of the organization scheme of the **Lab in a Bag Technology Camp**, see Appendix F.)

Following effective implementation of the first year and upon extension of funding, the second funded year of the proposed **Lab in a Bag** project focuses on 36 selected 5th and 6th grade educators. Following the same professional development model, this group develops and delivers a two-week summer school technology camp program for up to 270 5th and 6th graders to engage them in a study of the ecosystem in east Texas. Hand-held probes and microscopes will be used to collect water, soil and plant samples, examine data and project trends regarding water availability and purity. Digital cameras, scanners, and laptop and desktop computers will be used as students analyze data and prepare reports of findings. This summer school project will work hand-in-hand with the Tyler ISD Camp Tyler campus, where similar projects have been field tested and refined. For example, students at Camp Tyler this spring plotted saplings using hand-held GPS (Global Positioning Systems) and entered data on computers using longitude and latitude information from the hand-held GPS to plot location. As a result, students were able to note trends in tree growth and make timber projections for the area. Learning this powerful must be leveraged and expanded across the region. The proposed **Lab in a Bag** project is designed to do so.

In the final funded year of the project, 24 selected 7th and 8th educators join the previously trained 3rd – 6th grade educators to develop and deliver a two-week summer technology camp for up to 180 7th – 8th grade students that focuses on physical health. The particular math, science and communication focus for each year of the proposed three-year project has been carefully designed to leverage current recently acquired equipment and recently implemented technology integration.

Program Requirements

1. Strategies for improving academic achievement and teacher effectiveness. Data from previous Tyler ISD technology integration projects yields information regarding ways TISD teachers and learners benefit from a technology-rich, fully integrated curriculum. We have documented evidence of gains in student achievement and teacher effectiveness for those students and educators who participated in our *teachers.edu* project. To leverage that data and build upon previously learned information, we extend the technology integration from the humanities focus employed throughout the *teachers.edu* project, to a math, science, and communication focus for the **Lab in a Bag** proposed project.

The strategies designed for the **Lab in a Bag** proposed project are based in Oliver Wendell Holmes statement that “to teach is to learn again.” Our proposed project includes multiple opportunities for students and educators to “learn again” by sharing what they learn with others.

Specific strategies for improving student academic achievement include:

- 1a. Focus on challenging math and science curriculum at identified elementary and middle schools.
- 1b. Use hand-held technology to collect scientific data, such as soil and water samples.
- 1c. Use wireless technology to analyze data in the field.
- 1d. Provide online instructional resources in math and science to facilitate anytime, anywhere learning.
- 1e. Require multiple opportunities for students to communicate new understandings regarding math and science concepts through traditional, electronic and multimedia avenues.
- 1f. Participate in a multi-week summer technology integration program for intermediate and middle school students from identified campuses.
- 1g. Extend the curriculum and resources from the summer technology integration program to the regular school year.

Specific strategies for improving teacher effectiveness include:

- 1h. Provide baseline technology training to develop teacher technology competence and prepare educators to use an array of hand-held devices to collect and transport data and to enhance teaching and learning
- 1i. Provide intensive, research-based professional development that focuses on appropriate instructional strategies for technology integration.
- 1j. Provide graduate credit level courses for in-service TISD faculty at identified intermediate and middle schools.
- 1k. Partner with the University of Texas at Tyler to leverage availability to high quality teacher preparation.
- 1l. Develop a mentor program that partners two Tyler ISD in service educators with one UTT preservice teacher.
- 1m. Develop and deliver a multi-week summer technology integration program for intermediate and middle school students from identified campuses.
- 1n. Extend the curriculum and resources from the summer technology integration program to the regular school year.

2. Goals. The Lab in a Bag proposed project addresses the following goals to meet the following standards:

* SBEC Tech Standards		Aligned to TEKS		Aligned to TAKS		
<p>Goals for the proposed Lab in a Bag project.</p> <p>1. To improve student academic achievement through the use of technology in elementary schools and secondary schools.</p> <p>and</p> <p>2. To assist every student in crossing the digital divide by ensuring that every student is technology literate by the time the student finishes the eighth grade.</p>	<p>Standard 3 Standard 4 Standard 5</p>	<p>Math TEKS 3rd – 8th</p> <ul style="list-style-type: none"> Quantitative reasoning; patterns, relationships, and algebraic thinking; geometry and spatial reasoning; measurement; and probability and statistics, and Technology and other mathematical tools. Problem solving, language and communication, connections within and outside mathematics, and formal and informal reasoning underlie all content areas in mathematics 	<p>Science TEKS 3rd – 8th</p> <ul style="list-style-type: none"> Develop science skills Understand cycles, structures and processes Conduct field and lab investigations Use computers and other technology tools to support scientific investigations Investigation of the solar system Impact of water cycle Radiant and chemical energy Asexual and sexual reproduction 	<p>** Technology Application TEKS</p> <ul style="list-style-type: none"> Foundations, including baseline technology acquisition knowledge Information acquisition including accessing online instructional materials and resources Solving Problems Communication, including traditional, electronic, and multimedia formats 	<p>Math TAKS 3rd - 8th</p> <ul style="list-style-type: none"> Obj. 1 - Number Obj. 2 – Patterns Obj. 3 - Reasoning Obj. 4 – Measurement Obj. 5 – Probability and Statistics Obj. 6 – Mathematical tools 	<p>Science TAKS 5th</p> <ul style="list-style-type: none"> Obj. 1 – Scientific reasoning Obj. 2 – Life science Obj. 3 – Physical science Obj. 4 – Earth science
<p>3. To encourage the effective integration of technology resources and systems with teacher training and curriculum development.</p>	<p>Standard 1 Standard 2</p>	<p>See above.</p>	<p>See above.</p>	<p>See above.</p>	<p>See above.</p>	<p>See above.</p>

* The Lab in a Bag grant development team selected the SBEC Technology Application standards for all teachers, rather than standards for new teachers.

** The Lab in a Bag project is correlated to the Technology Application TEKS for 6th - 8th grade even though the project does include teachers and learners from the 3rd – 5th grades. The grant project development team purposely focused on the 8th grade TA TEKS as the standard for faculty and student competency.

3. Steps to increase accessibility. We have outlined three steps to increase accessibility. First, teachers receive complete math, science and communication wireless lab for 3rd – 8th grades at the targeted campuses. (For a description of all equipment in each **Lab in a Bag**, see item # 6 below.) The proposed project provides for each participating educator to receive the equipment and then to share the equipment across his or her grade level at the conclusion of the project. In this way, we target equipment purchases and training during the initial year of the project, but disseminate the training and equipment across each campus as the project continues beyond the funded years. Second, the project provides campus sets of all hand-held devices to ensure that all students have increased access to technology.

Finally, all equipment purchased will be compatible with recent technology purchases, such as equipment acquired in the previous two years, to take advantage of existing technology inventories across the district. Local, state and federal funds will be coordinated with **Lab in a Bag** funds. Title I and Title II, Part D Formula funds will be used to support the initial year of the summer school technology camp for 3rd – 5th grade educators and learners. See Schedule #4B, Part 4 for a complete description of funding coordination.

4. Promotion of curricula and teaching strategies that integrate technology. Math and science content area specialists from TISD and UT Tyler will be employed throughout the life of this project to develop the math and science content based on current, relevant research. Dr. Jan Bryan, an outside consultant, will provide technology integration expertise and work hand-in-hand with content area specialists to ensure technology is implemented in effective ways across the curriculum. We draw heavily from research available through math, science and technology professional organizations. Additionally, we review sample curriculum integration resources available through TENET, ISTE, Achieve.org and other educational technology resources. Electronic and online resources, such as databases, spreadsheets, multimedia tools and web-based materials will be developed as part of the curriculum. A reference list of relevant research used to support curriculum and instruction for the **Lab in a Bag** project is available at Appendix B.

5. Professional development. The proposed **Lab in a Bag** project provides for intensive, sustained professional development throughout the life of the project. Tyler ISD Instructional Technology Specialists, Dr. Jan Bryan, outside consultant, and Professors Lewis, Starnes, Lumpe, Webb and Guilbert from the UT Tyler College of Education will assist with professional development for participating educators. All in-service educators will enroll and receive 9 hours graduate credit for professional development that includes: (1) baseline technology training in the spring offered in classes that meet one night per week for 12 weeks, (2) two weeks of intensive technology integration and curriculum development training offered in a seminar setting that meets each day from 8:00 a.m. – 4:00 p.m., (3) mentoring and modeling throughout development and delivery of the two-week summer technology camp and (4) follow up training and support through Tyler ISD to continue the project across each campus.

This training will be provided to a cadre of education professionals including administrators, teachers, instructional technology support staff and school library media personnel to further appropriate technology integration at each targeted campus and eventually across the district. Additionally, the **Lab in a Bag** project leverages technology integration expertise in the district as teachers who have participated in previous Language Arts focused technology integration initiatives, such as the *teachers.edu* project serve as mentors and share instructional strategies.

6. Technology type and costs. With an emphasis on hand held learning, the **Lab in a Bag** project equips each participating teacher with a portable math, science, and language arts technology lab – literally -- in a bag. Special backpacks hold a wireless laptop computer, a Scaler digital microscope, scientific probes, calculators, a digital video camera and portable scanner. Each **Lab in a Bag** costs approximately \$4,115. (Detailed figures are available on Schedule #3.) On campus, participating teachers will be equipped with a classroom accessory kit including a LCD data projection device and ink jet printer. Cost of each Classroom Accessory Kit is \$1650, for a total of \$5764 per participating classroom. Each campus will receive one Campus kit that includes 22 classroom calculators and one overhead calculator for teachers to demonstrate complex content and one Classroom Performance System (CPS) interactive learning station. The CPS unit allows teachers to collect student data and analyze “on the spot” learning as it happens. Cost for each Campus Kit is \$2055. All peripheral connectivity will be established with USB cables allowing for interoperability across platforms and among legacy equipment.

7. Coordination with other resources. Activities funded by the **Lab in a Bag** project will be coordinated with activities funded by other programs, such as Title I, technology allotment, TIF funds and leveraging existing community/school partnerships. In this way, we avoid duplication of services and maximize all available technology funds. One example of the coordination of current services is the transportation costs of the proposed project funded will be funded through coordination of existing transportation services available at Whitehouse ISD, the private schools and the Caldwell Foundation. See Schedule #4B for a complete description of additional funding coordination.

8. Integration of technology with curricula and instruction. During the first funded year of the proposed **Lab in a Bag** project, 3rd and 4th grade educators develop and deliver a two-week summer school technology camp program for the intermediate grades, hosting up to 360 students. This project focuses on a study of animals at the Caldwell Zoo in Tyler. Curriculum includes traditional resources, such as math and science literature, software resources, web-based resources and a collection of online resources either identified or developed by the participants. A special curriculum web site – linked to the Tyler ISD site (<http://www.tylersprnet.org>) will host all online resources and provide descriptions and location information for traditional resources. Students will collect and analyze data using the hand-held devices and develop multimedia projects to share what they learn. Following this first year of funding, participating 3rd – 4th grade educators serve as mentors to colleagues on their campuses. They share equipment, curriculum, instructional resources and teaching strategies.

In the second funded year of the proposed **Lab in a Bag** project, 5th and 6th grade educators, following the model implemented during the first year of the project, and refined based on formative evaluation data, will develop and deliver a two-week summer school technology camp program for the upper elementary and beginning middle school grades centered around a study of the ecosystem in and around Tyler. This project extends an existing outdoor education program offered for all 5th graders at Camp Tyler. Hand-held probes and microscopes will be used to collect water, soil and plant samples. Digital cameras, scanners, and laptop and desktop computers will be used as students analyze data and prepare reports of findings. Again, participants from this funded year serve as models and mentors to expand the project from a two-week summer school camp for 270 students to a campus – eventually district and region-wide technology integration program.

In the final funded year of the project, selected 7th and 8th grade faculty members, representing Tyler ISD middle schools, receive equipment and training to develop and deliver a two-week summer school technology camp program that focuses on physical health among students, educators and members of the Tyler community.

9. Innovative delivery strategies. As part of the proposed project, educators will use traditional, electronic and online curriculum resources. Additionally, students will participate in field and lab investigations, share information electronically, and gain access to resources not currently available to them. We will use online forms, linked to a relational database (Microsoft *Access*) and hosted on the Tyler ISD site. Students will use this site to complete online pre and post surveys, and enter data collected in the field. All data entered into the online database can be downloaded into a stand-alone version of the *Access* database for further analysis.

10. Parental involvement. The **Lab in a Bag** proposed project provides opportunities for parents to work in the field setting assisting students with research. Additionally, the Classroom Performance System (see <http://www.einstruction.com>) implemented as part of this project has an online component so that parents can track their children's work and progress through a highly secure, password protected web site. At this site, parents can view questions asked during class, see their child's responses and print individualized tutorial guides designed to address questions answered incorrectly by students.

11. Collaboration with adult literacy service providers. The proposed project will be coordinated with the Caldwell Foundation, Discovery Science Place, Texas Parks and Wildlife and the Tyler public libraries. Each hosts some form of adult education. The Caldwell Foundation and Tyler public library offer specific adult literacy programs. Adults with children participating in the proposed **Lab in a Bag** project will have access to all online information and resources used by participating educators and students.

12. Accountability measures. Throughout the proposed project, an objective, outside evaluator will collect and analyze quantitative and qualitative data. Data will be collected and analyzed to assess the effectiveness of professional development, technology acquisition and usage, and student achievement. In addition, accountability for each component of the proposed project has been designed. All baseline training will be evaluated to gauge the effectiveness of the trainer. Concomitantly, participating in-service and preservice educators will be graded according to the UT Tyler standards for academic success in the College of Education. The professors from UT Tyler and/or the content area specialists working with the grant will review all curriculum and instructional resources.

13. Supporting resources. Outside trainers will be hired to deliver baseline training for use of all hand-held devices including the calculators and scientific probes. Guidance to develop a web-based, password protected site for parents will be provided by eInstruction. This site is used in concert with the Classroom Performance System and allows parents to see the types of questions asked during instruction and how their child responded to each one.

Additional Requirements

Technology plans for both participating public schools; Tyler ISD and Whitehouse ISD have been submitted to and approved by TEA. **Campus STaR charts and CIPA plans** for each participating campus are included in Appendix D.

Summary

The proposed **Lab in a Bag** project honors a commitment to partnership and hands-on learning begun more than 65 years ago with a service-minded couple and a few small farm animals. We honor this commitment to partnership by extending the simple brilliance of hands-on learning to hand-held learning. We honor this commitment to partnership by extending the concept of partnership from private individuals and school partnerships to partnerships among public and private schools, university professors, preservice teachers, state agencies and private foundations.

The **Lab in a Bag** project offers all students a technology-rich, fully integrated curriculum with an emphasis on hand-held learning. We offer each elementary and middle school campus a host of modern *instructional* technology equipment and a fully developed curriculum that includes research-based, field tested and proven instructional materials, resources and strategies. We offer each participating school or district a cadre of highly trained educational technology specialists who will serve as mentors and share what they learn with colleagues. We offer the cities impacted by this proposed project energized schools with a renewed emphasis on student achievement. We outline a proven path toward significant gains in student achievement.

Ironically, the proposed **Lab in a Bag** project will be housed in the Tyler ISD Gary Technology Center, located in the original Gary Elementary School building, just across the tree-lined, brick-covered street that leads to the Caldwell's front door.

TEXAS EDUCATION AGENCY
Standard Application System (SAS)
Technology Applications Readiness Grants for Empowering Texas (TARGET)
School Year 2002-2003
SCHEDULE #4B--
Program Description - Part 2a
Program Strategies

Amendment No. _____

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Campus Name(s)	Major Strategies (not activities)	Rationale for each Strategy	Technology to be Purchased
Austin Elementary Bell Elementary Birdwell Elementary Bonner Elementary Brown Elementary Caldwell Elementary Clarkston Elementary Dixie Elementary Douglas Elementary Griffin Elementary Jones Elementary Orr Elementary Owens Elementary Peete Elementary Ramey Elementary Rice Elementary Woods Elementary Boulter Middle School Dougan Middle School Higgins Middle School Hogg Middle School Hubbard Middle School Moore Middle School Stewart-Edison Middle School Whitehouse Junior High School (Continues on the following page) (Continued from previous page.)	<p>Focus on fully integrated challenging math and science curriculum</p> <p>Use hand-held technology to collect and analyze scientific data, such as soil and water samples</p> <p>Provide online instructional resources with parent access to student learning.</p> <p>Use wireless technology to analyze data in the field</p>	<p>Vygotskian research and field studies provide evidence of increased student academic achievement when presented with challenging curriculum with appropriate technology integration</p> <p>Engaged learning, specifically hands-on learning leads to student achievement.</p> <p>A wealth of resources exists online. By training educators to evaluate resources and select those resources that follow our theoretical framework, we expect gains in instructional expertise and student achievement. Additionally, educators using online resources are not hindered by lack of access to resources.</p> <p>Relevant research by Hickey, et. al. Newberry and others (see Appendix B), supports hand-held learning. Students collect more detailed data using hand-held devices; however, the data only help students learn when they have immediate access to means to analyze what they find. With wireless technology, educators and learners can look at what they have collected and make decisions about needs for additional data samples. (continues on the following page)</p>	<p>Calculators for students Overhead calculator for educators Hand held, digital microscope Science probes</p> <p>See above</p> <p>Classroom Performance System interactive instructional units LCD data projection devices Wireless laptop computers</p> <p>Scaler hand-held, digital microscopes Scientific probes Wireless laptop computers</p>

<p>East Texas Christian Academy Stepping Stone School St. Gregory Elementary TK Gorman Middle School</p>	<p>Provide opportunities for student to share what they learn with others</p> <p>Participate in a multi-week summer technology integration</p> <p>Extend curriculum and resources from summer technology program to regular school year</p>	<p>Research by Cook and Cook (1998, see Appendix B) finds that students remember less than half of what they gain through traditional instructional activities, but more than 95% of what they teach to others. When students share what they learn, they learn even more.</p> <p>Data from previous Tyler ISD summer technology programs provides evidence of student achievement.</p> <p>Data regarding students' perceptions of learning indication that students feel they work harder and learn more with technology. Additionally, they spend more time on task and retain greater amounts of knowledge (see Wenglinsky, 1998 listed in Appendix B)</p>	<p>CPS interactive learning units Wireless laptop computers Digital video cameras USB Scanners MS Office Suite software Inspiration software</p> <p>Hand-held scientific probes Hand-held Scaler, digital microscopes Calculators Wireless laptop computers MS Office Suite software Inspiration software LCD data projectors Digital video cameras USB Scanners</p> <p>Hand-held scientific probes Classroom set of probes Hand-held Scaler, digital microscopes Classroom set of calculators Overhead calculator Wireless laptop computers MS Office Suite software Inspiration software LCD data projectors Digital video cameras USB Scanners</p>
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TEXAS EDUCATION AGENCY
Standard Application System (SAS)
Technology Applications Readiness Grants for Empowering Texas
(TARGET)
School Year 2002-2003
SCHEDULE #4B--
Program Description - Part 2b
Program Strategies

212-905
County District No.

Amendment No. _____

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Supplement Not Supplant

The proposed **Lab in a Bag** project supplements existing local, state and federal programs in place. Special care has been taken to ensure that no activities are duplicated across existing programs. **Lab in a Bag** funds will be coordinated with local funds to supplement training and other services currently offered by TISD instructional technology staff. While the local program will continue without change to purpose or funding, the **Lab in a Bag** project supplements that local training program by using local instructional technology staff to deliver components of the baseline technology training. This supplements the local training program because instructional technology staff members learn additional skills as a result of their participation in the **Lab in a Bag** project. As a result, their training expertise and benefit to the district is supplemented through their work with the proposed **Lab in a Bag** project

State funded support and services, such as the infrastructure provided through the TIF funds will be maximized throughout the **Lab in a Bag** project. We supplement current accessibility to the Internet with the purchase of more than 100 wireless laptops throughout the life of the project. In this way, the district will realize more Internet accessibility without a need for additional infrastructure. Similarly, we increase students' access to online learning resources with the addition of GPS hand-held devices. Again, we supplement the current TIF supported infrastructure without incurring additional cost to the proposed **Lab in a Bag** project or added encumbrance to any existing local TIF project.

We supplement federal programs with the coordination of funds and services through Title I funds. Specifically, Title I and **Lab in a Bag** funds will be coordinated to support the regular Title I summer school program for students at risk. By piloting the Lab in a Bag project through the regular Title I summer school program for students at risk, we use what we learn to support implementation of the full project during the first full funded year. Additionally, we order, install and test all equipment as part of the summer 2003 pilot. This assures us time to solve an technology conflicts prior to full implementation. Title I funds will not be reduced or redirected in order to fund the pilot project. Rather the goals, objectives and activities of the **Lab in a Bag** project supplement Title I goals, objectives and activities for the summer school 2003 local project

Private Nonprofit School Participation

Prior to the development of this grant application, the instructional technology team extended an invitation for area private schools to participate. Three private schools (representing four separate campuses) elected to participate in the planning, development, and implementation of the **Lab in a Bag** project. Participating private school are East Texas Christian Academy, Stepping Stone School and Bishop Gorman Catholic school, representing St. Gregory Elementary and T. K. Gorman Middle School. Teachers from each private school have full access to all baseline training and graduate hours offered through the University of Texas at Tyler. Students from each participating private school have full access to all goods and services offered through the **Lab in a Bag** program.

During the planning phase of this grant application process, the private school administrators did request that private school students participate at the same physical location as public school **Lab in a Bag** educators and learners; however, be under the guidance of an educator from the students' private school. Neither the private nor public school planning team found any need to alter goods, services or activities to accommodate full access for private school educators and learners.

Management Plan

Children's Internet Protection Act (CIPA) Certification

[•] Every "applicable school" has complied with the CIPA requirements in Title II, Part D, Subpart 4

The **Lab in a Bag** project is in complete compliance with the Children's Internet Protection Act. For a report made to the fiscal agent (Tyler ISD) local board of trustees regarding CIPA compliance, see Appendix D. All activities where Internet access is available for the proposed **Lab in a Bag** project take place on Tyler ISD campuses and facilities. Tyler ISD uses a rigorous content filter to block access to objectionable materials, graphics or other information.

Management of Grant Activities

Tyler ISD serves as the fiscal agent for the **Lab in a Bag** project. All grant related activities will be coordinated through Tyler ISD. As TISD Instructional Technology Director, Jay Olson will have oversight for the project. All purchasing and payment decisions will go through Mr. Olson. Additionally, all decisions regarding appropriate use of grant personnel, including TISD Instructional Technology staff, will be coordinated with the grant oversight team, including Mr. Olson, Mr. Cramer, and Mrs. White.

Mr. Olson will monitor technology staff and outside consultants. At the UT Tyler, Dr. Mark Lewis will oversee the university's participation including scheduling graduate and undergraduate classes, scheduling the assigned professor and monitoring grade reporting.

In addition to Mr. Olson and Dr. Lewis, the project provides for a Project Director. Mrs. Katherine Wheat-Elmore (see additional information below) will serve as Project Director and oversee the day-to-day implementation of the project. While Mr. Olson will ensure that all funding decisions are made according to grant and local guidelines, Ms. Wheat-Elmore will see that all purchasing training and other grant-related activities are carried out according to the grant timeline described in Schedule #4B, Part 3.

An important part of our management plan includes the use of continuous feedback from participants. The **Lab in a Bag** project includes development of a project web site linked from the Tyler ISD web site (see <http://www.tyler.spnnet.org>). The project web site will include a text form field linked to a Microsoft Access database. Participants can access the site and provide comments regarding purchasing, curriculum, training and professional development. In addition, all training and professional development sessions include a online evaluation forms. Project personnel can review evaluations immediately following each training session to identify strengths and weaknesses among the trainers, the consultants and the information presented. Using the evaluation data, project personnel can adjust resources as needed to ensure an effective implementation of the **Lab in a Bag** project.

Internal Communication, Coordination and Reporting

Management chain. All grant participants will report to Katherine Wheat-Elmore, grant Project Director. Ms. Wheat-Elmore will report directly to Jay Olson, who will report to the Superintendent. Any issues related to the grant should follow the management chain.

Ongoing communication. In addition to the dedicated **Lab in a Bag** web site with access to online forms, traditional and electronic forms of communication will be employed throughout the life of this project. Jay Olson's office is in the Tyler ISD Central Administration office. He will communicate regularly with the district financial officer to oversee Purchase Orders, invoices and payments. Tyler ISD Instructional Technology staff work at the refurbished Gary Technology Center and will have daily face-to-face contact throughout the grant period. This dedicated technology center provides access to grant personnel and offers room for grant planning meetings. We learned during the *teachers.edu* project that electronic communication, such as email, provides uniform access to information by all parties. We developed a *teacher.edu* listserv to communicate. We will develop a **Lab in a Bag** listserv to communicate regularly with all grant personnel, including outside evaluators. We will develop an additional educator **Lab in a Bag** listserv so that participating educators to communicate with ease.

Scheduled communication. Mrs. Katherine Wheat-Elmore will report one morning each week to Jay Olson. This will be a dedicated time, such as each Monday from 10:00 – 11:30. The purpose of this regularly schedule meeting is to go over all grant activities in progress, check feedback from online forms and make plans to complete upcoming grant activities. During the planning phase, electronic communication with outside consultants works well; however, during the implementation phase, we will move to quarterly face-to-face meetings with all outside consultants and UT Tyler faculty. These meetings will serve as a checkpoint for all grant activities dealing with training, curriculum design and professional development. One month prior to the implementation of the pilot project for summer 2003 quarterly meetings will be replaced with weekly meetings. As we complete the pilot project and analyze information related to the project, we will reassess our communication strategies and amend as needed.

Grant Project Manager and Grant Personnel

Jay Olson, Director of Instructional Technology for TISD, serves as the lead administrator and point of contact for all administrative grant concerns. Mr. Olson brings experience as a Special Education Teacher, Computer Literacy Teacher, and Instructional Technology Consultant in addition to his administrative background. He holds a Bachelors degree in Education and the Masters degree in Mid-Management. In addition to his Texas teacher certification, Mr. Olson has earned endorsements for Mentally Retarded, Emotionally Disturbed and Computer Literacy education.

Mrs. Katherine Wheat-Elmore serves as **Lab in a Bag** Project Director. Katherine served as Project Director for the previous *teachers.edu* project for the district. Katherine is a certified teacher and brings a wealth of instructional and administrative experiences. With her project management experience, she will provide effective management for this project and will serve as principal during the summer school technology camps.

Ken Cramer and Karen White, Instructional Technology Specialists for TISD, supervise the **Lab in a Bag** project. Mr. Cramer brings experience as a classroom teacher and central office administrator to the **Lab in a Bag** project. He has been awarded

a Bachelors degree in Education and a Masters degree in Mid-Management. Mr. Cramer is endorsed in information technologies and holds professional mid-management certifications.

Ms. White has worked extensively with gifted and talented as well as served the district as a Technology Trainer and Technology Specialist for Training and Support. This unique team brings experience to support all components of the **Lab in a Bag** project – from developing colleagues to working with special needs students, and attending to precise administrative concerns. Karen holds a Bachelors degree in Elementary Education and a Masters degree in Texas in Mid-Management. Her certifications include art and gifted and talented.

Dr. Jan Bryan serves as the major outside consultant for the grant. Dr. Bryan brings several years experience as a consultant for technology integration, curriculum and writing projects. Currently, Dr. Bryan is a faculty member in the College of Education for the University of North Texas. She holds Texas teacher certifications for elementary classroom, and all level music, a Bachelor degree in Education, a Masters degree in Education and Technology and a Doctoral degree in Curriculum and Instruction. For a complete description of Dr. Bryan's expertise and experience, see Appendix E.

Resource Management

The **Lab in a Bag** project builds from a project originally funded with TISD local, Title I funds and TIE funds. Additionally, TISD will support the proposed project with use of local Pay for Knowledge funds to allow stipends for all educators who attend baseline training. To coordinate resources, TISD provides local funds to support the following project services:

1. Use of facilities (Gary Technology Center) and related expense, such as utilities, phone, etc.
2. Use of technology labs at Gary Technology Center (GTC) for training and professional development.
3. Use of technology and communication equipment at GTC including computers, printers, scanners and photocopiers.
4. Salaries for custodians and other maintenance personnel.
5. Office space and furnishings, computer equipment, telephone, etc. for the Project Director.
6. All costs incurred for printing, training, and professional development materials and manuals.
7. All costs incurred for project advertising, selection, and notification of project personnel, student selection, and public relations.
8. All connectivity costs, including infrastructure and phone line charges.

Grant partners will also provide support for the **Lab in a Bag** project. UT Tyler will provide salary for TISD Instructional Technology Specialists Ken Cramer and Karen White to teach courses related to the project and for which participating educators will earn 9 hours graduate credit. Additionally, UT Tyler will offer \$100 scholarships to all participating educators. Whitehouse ISD will provide transportation for all participating educators and students from that district. All private school partners will provide transportation. The Caldwell Foundation provides transportation to every participant for field study at the local zoo and surrounding green space.

For a complete explanation of coordination of resources, please see Schedule #4B, Part 4 Coordination/Collaboration.

Commitment to Program Continuation

We have built in five methods to keep the **Lab in a Bag** project viable beyond the initial years of funding. First, immediate continuation is assured as **Lab in a Bag** educators keep all hardware, software, hand-held devices, curriculum, and instructional supplies and materials to use at their campuses beyond the funding for this project. Additional campus accessory kits, including LCD data projects, CPS units, printers, class sets of hand-held devices will continue to be used by all educators at each campus.

Second, the project will continue as participating educators serve as mentors on their home campuses sharing what they learned. They will share instructional strategies, scheduling considerations for collaborative learning, how to manage field study, data collection and analysis and online resources.

Third, Tyler ISD will continue all local support and coordination of services among local, state and federal projects to maximize and extend what is gained from participation in the **Lab in a Bag** project. Fourth, the project is designed with consideration for reduced funding in the 2nd and 3rd years. As we develop more and more local technology integration expertise in the district, we require fewer outside trainers and expense during the 2nd and especially during the 3rd year. Additionally, the number of participating campuses decreases as we move the focus from elementary to intermediate to middle school. By default, the number of participating educators and students moves from 100% in the first year, to 75% in the second year and 50% in the final funded year.

Finally, our students will require continued instruction in a technology rich fully integrated environment. The same students who begin the project with the partially funded pilot in summer 2003 will participate throughout all three years of the fully funded program. These students will develop such technology expertise that hand-held learning will seem natural to them as they continue their learning in high school and beyond.

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Campus Name(s)

All 16 TISD Elementary and 6 Middle School Campus personnel are eligible to participate.

TEXAS EDUCATION AGENCY

Standard Application System (SAS)
Technology Applications Readiness Grants for Empowering Texas (TARGET)
School Year 2002-2003

SCHEDULE #4B--Program Description - Part 3
Program Activities / Budget for Year 1

Year 1 – January 1, 2003 to June 30, 2004 Funding Period
(Use as many pages as necessary)

212-905
County District No.

Amendment No. _____

More than one campus may be listed per page when activities will be **identical** in each campus.

Activities	Positions Responsible	Timeline	Effectiveness Indicators
8. Identify participating students	Project Director Campus Principals	April 2003	List of eligible students
9. Integration training for participating educators	Instructional Tech. Staff	June 2003	Sign in sheets Evaluation document
10. Develop curriculum for summer pilot project and locate online resources.	Instructional Tech. Staff Participating educators	June 2003	Curriculum Bookmarks
11. Prepare and administer pre test for participating students	Instructional Tech. Staff Participating educators	July 2003	Survey data
12. Deliver summer pilot project. Test all hardware, software and connectivity.	Project Director Instructional Tech. Staff Participating educators	June - July 2003	Attendance records Lesson plans Student projects
13. Administer post test to educators and students	Project Director	July 2003	Post survey data
14. Seek parent input and comments regarding pilot via online form and dedicated phone line.	Project Director Web master	July - August 2003	Parent comment data
15. Analyze survey and participant observation data. Make recommendations for change prior to the initiation of the full Lab in a Bag project.	Project Director	August 2003	Report to Instructional Technology Director

(End of TARGET funded activities for Pilot Project.)

TEXAS EDUCATION AGENCY

212-905
County District No.

**Standard Application System (SAS)
Technology Applications Readiness Grants for Empowering Texas (TARGET)
School Year 2002-2003**

Amendment No. _____

**SCHEDULE #4B –Program Description - Part 3
Program Activities / Budget for Year 1
Year 1 – January 1, 2003 to June 30, 2004 Funding Period
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Campus Name(s)
Austin, Bell, Birdwell, Bonner, Brown, Caldwell, Clarkston, Dixie,
Douglas, Griffin, Jones, Orr, Owens, Peete, Ramey, Rice, Woods,
East Texas Christian Academy, Stepping Stone School, St Gregory

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Activities	Positions Responsible	Timeline	Effectiveness Indicators
1. Host Lab in a Bag project-planning meeting to examine pilot project data and make adjustments to the project as noted.	Instructional Tech. Director Instructional Tech. Staff Project Director UT Tyler Professors Outside Consultant Educators from pilot project	Aug – Sept 2003	Sign in sheet
2. Post online application to hire 8 cognitive coaches to serve as mentors throughout the 2003 – 2004 Lab in a Bag project.	Instructional Tech. Director Project Director	September 2003	Online application
3. Review applications and select 8 cognitive coaches.	Instructional Tech. Director Project Director UT Tyler representative	October 2003	List of coaches Signed agreement letters
4. Begin technology training for cognitive coaches.	Instructional Tech. Staff Vendors	Oct - Dec 2003	Sign in sheets Evaluation documents
5. Post online application for Lab in a Bag participants and disseminate information to targeted campuses.	Project Director Web master	October 2003	Online application
6. Review applications and select 48 educators and preservice teachers to serve as faculty for the summer 2004 Lab in a Bag project.	Instructional Tech. Director Project Director	November 2003	List of educators Signed agreement letters
7. Work with UT Tyler to identify 12 preservice teachers to work with the first full funded year of the project.	Instructional Tech. Director Project Director UT Tyler representative	November 2003	List of preservice teachers Signed agreement letters

(Lab in a Bag activities continue on the next page.)

TEXAS EDUCATION AGENCY

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Activities	Positions Responsible	Timeline	Effectiveness Indicators
8. Meet with participating partnership principals and/or campus representatives to prepare criteria to identify up to 240 students in the 3 rd and 4 th grades at Tyler and Whitehouse ISD, East Texas Christian Academy, Stepping Stone School and St. Gregory Elementary.	Project Director Target campus principals Private school principals	Nov – Dec 2003	Criteria
9. Prepare brochure and web page for parents that describes the Lab in a Bag project, types of technology and instructional methodology. Post parent information online and publish in the local paper.	Project Director Web master	January 2004	URL Published article
10. Provide means, via online form and dedicated phone line for parents to ask questions and/or make comments regarding the project.	Project Director	January 2004	Parent comments
11. Work with Caldwell Foundation representative to schedule summer 2004 onsite fieldwork and transportation from Gary Technology Center to the Caldwell Zoo.	Project Director Caldwell Foundation Representative	Nov – Dec 2003	Schedule Transportation schedules
12. Work with Discovery Science Place to schedule summer 2004 onsite fieldwork at the center. Arrange for transportation through Tyler ISD, Whitehouse ISD and through the participating private schools (if needed).	Project Director Discovery Place representative TISD/WISD Transportation Private campus representatives	Nov – Dec 2003	Schedule Transportation schedules
13. Deliver baseline training for educators and preservice teachers and administer pre test. (Continues on the next page.)	Outside consultant TISD content specialists Vendors	Jan - May 2004	Sign in sheets Evaluation documents

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School Year 2002-2003

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Activities	Positions Responsible	Timeline	Effectiveness Indicators
14. Order any additional equipment or amend equipment list as indicated by pilot project data.	Instructional Tech. Director Project Director	Nov. – Dec 2003	Purchase orders Packing lists Invoices
15. Develop pre and post measurement instrument. Post online.	Dr. Jan Bryan Web master	Nov – Dec 2003	Instrument
16. Meet with UT Tyler representative to establish syllabus for graduate credit for training and professional development.	Instructional Tech. Director Project Director Outside consultant	Nov – Dec 2003	Course syllabus
17. Work with Caldwell Foundation representative to schedule summer 2004 onsite fieldwork and transportation from Gary Technology Center to the Caldwell Zoo.	Project Director Caldwell Foundation Representative	January 2004	Schedule Transportation schedules
18. Work with Discovery Science Place to schedule summer 2004 onsite fieldwork at the center. Arrange for transportation through Tyler ISD, Whitehouse ISD and through the participating private schools.	Project Director Discovery Place representative TISD transportation officer WISD transportation officer Private campus representatives	January 2004	Schedule Transportation schedules
19. Deliver baseline training for educators and preservice teachers and administer pre test. (Continues on the next page.)	Instructional Tech. Staff Outside consultant TISD content specialists	Jan – May 2004	Sign in sheets Evaluation documents

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Activities	Positions Responsible	Timeline	Effectiveness Indicators
20. Contract with Bosenbach Corporation to develop integrated curriculum for summer 2004 Lab in a Bag project.	Instructional Tech. Director Project Director Dr. Jan Bryan, Bosenbach Corporation	January 2004	Signed contract
21. Develop and correlate curriculum to 3 rd and 4 th grade Math, Science, English Language Arts and Technology Applications TEKS. Identify online resources to support teaching and learning. Post online for comments.	Dr. Jan Bryan Partnership participants who choose to make comments regarding the curriculum.	Jan – May 2004	Curriculum URL Comments
22. Develop lesson plan frameworks for Lab in a Bag participating educators and preservice teachers to use a guides for developing meaningful learning activities for 3 rd and 4 th grade students. Post online for comments.	Dr. Jan Bryan Partnership participants who choose to make comments regarding the lesson plan frameworks.	Jan – May 2004	Lesson plan frameworks ULR Comments
23. Develop syllabus and course materials for two-week professional development graduate course.	Dr. Jan Bryan UT Tyler representative	Jan – May 2004	Course syllabus
24. Conduct a two-week professional development graduate course based on relevant research and providing means to demonstrate and train teachers to use best practices for technology integration.	Dr. Jan Bryan Project Director UT Tyler representative	June 2004	Sign in sheets Course evaluation documents Educators' projects

(Continues on the next page.)

TEXAS EDUCATION AGENCY

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More than one campus may be listed per page when activities will be **identical** in each campus.

Activities	Positions Responsible	Timeline	Effectiveness Indicators
25. Administer pre survey to students.	Lab in a Bag educators	June 2004	Survey data
26. Lab in a Bag educators and preservice teachers deliver a two-week technology rich summer camp for 3rand 4 th grade students. Students learn with hand-held technology including scientific probes, calculators, digital cameras, scanners and wireless laptop computers. The summer school technology camp will focus on an in depth study of animals at the Caldwell Zoo in Tyler. Students and educators will collect and analyze data using hand-held technology and develop multimedia project to share what they learn.	Lab in a Bag educators Project Director Caldwell Zoo representative	June 2004	Attendance records Student Projects Lesson plans
27. Administer post test survey to students	Lab in a Bag educators	June 2004	Survey data
28. Analyze data, prepare and deliver a written report of findings. (End of activities for the first funded year of the Lab in a Bag project.)	Dr. Jan Bryan	June 2004	Written report

GRANT FUNDS WILL BE USED TO PAY ONLY FOR ACTIVITIES OCCURRING BETWEEN THE BEGINNING AND ENDING DATES OF THE GRANT AS SPECIFIED ON THE NOTICE OF GRANT AWARD

**TEXAS EDUCATION AGENCY
Standard Application System (SAS)
Technology Applications Readiness Grants for Empowering Texas
(TARGET)**

School Year 2002-2003

**SCHEDULE #4B--Program Description - Part 3a
Program Activities / Budget for Year 2**

Year 2 – July 1, 2004 to June 30, 2005 Funding Period
(Maximum 75% of original budget)
(Use as many pages as necessary)

Amendment No. _____

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Must be completed if you are applying for a multi-year project. Use as Many Pages as Necessary, front only, font size not less than 9 point.

Identify major activities to be conducted and the projected corresponding cost of conducting each major activity (based on current prices)	Campus(es)	List Major Activities To Be Carried Out In Year 2 for Each Campus Campuses may be grouped where activities/ technology purchases will be identical for each campus.	Projected Cost Of Each Activity (Including the any technology purchases planned for year 2) List the technology and cost
<p>Austin Elementary Bell Elementary Birdwell Elementary Bonner Elementary Brown Elementary Caldwell Elementary Clarkston Elementary Dixie Elementary Douglas Elementary Griffin Elementary Jones Elementary Orr Elementary Elementary Owens Peete Elementary Ramey Elementary Rice Elementary Woods Elementary East Texas Christian Academy Stepping Stone School St Gregory</p>	<p>1. Educators who participated in the Year 1 Lab in a Bag project return to campus and serve as mentors sharing information, technology and technology skills.</p> <p>2. Preservice teachers return to UT Tyler to share instructional strategies and technology skills with colleagues.</p> <p>3. Students participating in the Year 1 Lab in a Bag project return to their campuses and serve a mentors to other students as technology is integrated across their campus.</p>	<p>No additional cost associated with this activity.</p> <p>No additional cost associated with this activity.</p> <p>No additional cost associated with this activity.</p>	

**TEXAS EDUCATION AGENCY
Standard Application System (SAS)**

**Technology Applications Readiness Grants for Empowering Texas
(TARGET)**

School Year 2002-2003

**SCHEDULE #4B--Program Description - Part 3a
Program Activities / Budget for Year 2**

Year 2 – July 1, 2004 to June 30, 2005 Funding Period
(Maximum 75% of original budget)

(Use as many pages as necessary)

Amendment No. _____

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Identify major activities to be conducted and the projected corresponding cost of conducting each major activity (based on current prices)	List Major Activities To Be Carried Out In Year 2 for Each Campus Campuses may be grouped where activities/technology purchases will be identical for each campus.	Projected Cost Of Each Activity (Including the any technology purchases planned for year 2) List the technology and cost
<p>Campus(es) Boulter Middle School Dogan Middle School Hogg Middle School Hubbard Middle School Morre Middle School Stewart-Edison Middle School Whitehouse Jr. High East Texas Christian Academy Bishop T. K. Gorman Catholic School</p>	<p>1. Up to 36 educators and preservice teachers develop and deliver a multi-week summer school technology camp to serve 180 5th and 6th grade students. Students engage in a study of the ecosystem in east Texas. Hand-held probes and microscopes will be used to collect water, soil and plant samples. As part of this project, intermediate and middle school students examine water samples and project trends regarding water availability and purity. Digital cameras, scanners, and laptop and desktop computers will be used as students analyze data and prepare reports of findings. This summer school project will work hand-in-hand with the Tyler ISD Camp Tyler campus, where similar projects have been field tested and refined.</p> <p>2. Educators and students will use technology to prepare multimedia reports of what they are learning.</p> <p>3. Educators and students return and serve as mentors.</p>	<p>Laptop computer Additional battery Scanner Digital video camera Calculator Hand-held computer device for probes Scaler Microscope Probe Set with Accessories \$148,140</p> <p>LCD Projector Inkjet Printer Calculator Overheard calculator Classroom Performance System \$90,225</p>

TEXAS EDUCATION AGENCY
Standard Application System (SAS)
Technology Applications Readiness Grants for Empowering Texas
(TARGET)

School Year 2002-2003
SCHEDULE #4B--Program Description - Part 3b
Program Activities / Budget for Year 3
Year 3- July 1, 2005 to June 30, 2006 Funding Period
(Maximum 50% of original budget)
(Use as many pages as necessary)

Amendment No. _____

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Identify major activities to be conducted and the projected corresponding cost of conducting each major activity (based on current prices)	List Major Activities To Be Carried Out in Year 3 for Each Campus Campuses may be grouped where activities/technology purchases will be identical for each campus.	Projected Cost Of Each Activity (Including the any technology purchases planned for year 3) List the technology and cost
<p>Campus(es)</p> <p>Boulter Middle School Dogan Middle School Hogg Middle School Hubbard Middle School Morre Middle School Stewart-Edison Middle School Whitehouse Jr. High East Texas Christian Academy Bishop T. K. Gorman Catholic School</p>	<ol style="list-style-type: none"> Educators who participated in the Year 2 Lab in a Bag project return to campus and serve as mentors sharing information, technology and technology skills. Preservice teachers return to UT Tyler to share instructional strategies and technology skills with colleagues. Students participating in the Year 2 Lab in a Bag project return to their campuses and serve a mentors to other students as technology is integrated across their campus. 	<p>No additional cost associated with this activity.</p> <p>No additional cost associated with this activity.</p> <p>No additional cost associated with this activity.</p>

TEXAS EDUCATION AGENCY
Standard Application System (SAS)
Technology Applications Readiness Grants for Empowering Texas
(TARGET)

School Year 2002-2003

SCHEDULE #4B--Program Description - Part 3b
Program Activities / Budget for Year 3

Year 3- July 1, 2005 to June 30, 2006 Funding Period
(Maximum 50% of original budget)
(Use as many pages as necessary)

Amendment No. _____

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Must be completed if you are applying for a multi-year project. Use as Many Pages as Necessary, front only, font size not less than 9 point.

Identify major activities to be conducted and the projected corresponding cost of conducting each major activity (based on current prices)

<p>Campus(es) Boulter Middle School Dogan Middle School Hogg Middle School Hubbard Middle School Moore Middle School Stewart-Edison Middle School Whitehouse Jr. High East Texas Christian Academy Bishop T. K. Gorman Catholic School</p>	<p>List Major Activities To Be Carried Out In Year 3 for Each Campus Campuses may be grouped where activities/technology purchases will be identical for each campus.</p> <p>4. Up to 24 educators and preservice teachers develop and deliver a multi-week summer school technology camp to serve 120 7th and 8th grade students. Students engage in a study of the health and fitness in east Texas. Hand-held probes and microscopes will be used to collect water, soil and plant samples. Additional research will be done with skin, hair and saliva samples.</p> <p>5. Educators and students will use technology to prepare multimedia reports of what they are learning.</p> <p>6. Educators and students return and serve as mentors at home campuses.</p>	<p>Projected Cost Of Each Activity (Including the any technology purchases planned for year 3) List the technology and cost</p> <p>Laptop computer Additional battery Scanner Digital video camera Calculator Hand-held computer device for probes Scaler Microscope Probe Set with Accessories \$98,760 LCD Projector Inkjet Printer Calculator Overheard calculator Classroom Performance System \$60150 No additional cost incurred.</p>
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TEXAS EDUCATION AGENCY
Standard Application System (SAS)
Technology Applications Readiness Grants for Empowering Texas
(TARGET)

School Year 2002-2003
SCHEDULE #4B--Program Description - Part 3b
Program Activities / Budget for Year 3
Year 3- July 1, 2005 to June 30, 2006 Funding Period
(Maximum 50% of original budget)
(Use as many pages as necessary)

Amendment No. _____

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Must be completed if you are applying for a multi-year project. Use as Many Pages as Necessary, front only, font size not less than 9 point.

<p>Identify major activities to be conducted and the projected corresponding cost of conducting each major activity (based on current prices)</p>	<p>Campus(es) Boulter Middle School Dogan Middle School Hogg Middle School Hubbard Middle School Morre Middle School Stewart-Edison Middle School Whitehouse Jr. High East Texas Christian Academy Bishop T. K. Gorman Catholic School</p>
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<p>List Major Activities To Be Carried Out In Year 3 for Each Campus Campuses may be grouped where activities/technology purchases will be identical for each campus.</p>	<p>7. Provide research-based professional development, including baseline training, 9 hours of graduate level coursework, consulting service and curriculum development.</p> <p>8. Provide appropriate staff and support personnel to deliver the program.</p>	<p>Projected Cost Of Each Activity (Including the any technology purchases planned for year 3) List the technology and cost</p> <p>\$169,400</p> <p>\$106, 124</p> <p>Total \$434,434 (not to exceed 50% of original budget)</p>
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TEXAS EDUCATION AGENCY
Standard Application System (SAS)
Technology Applications Readiness Grants for Empowering Texas
(TARGET)
School Year 2002-2003
SCHEDULE #4B--Program Description - Part 4
Collaboration/Coordination

212-905
 County District No.

Amendment No. _____

Limit to 2 pages, front only, font size not less than 9 point.

Coordination of Funds

Lab in a Bag activities have been carefully planned to coordinate with all available local, state and federal technology funds. In this way, all technology funds are maximized to provide seamless access to equipment, training and other services provided through the proposed **Lab in a Bag** as well as other technology projects. Further, the services and activities designed for the **Lab in a Bag** project coordinate with all existing technology initiatives in Tyler ISD and across the partnership.

Title II, Part D Formula Technology Funds. No Title II, Part D formula funds have been transferred under REAP. Title II, Part D formula technology funds will be coordinated with local Title I, TARGET, and additional district technology funds to support a pilot of the proposed **Lab in a Bag** project. This pilot will be developed and delivered spring - summer 2003. The pilot will include up to 18 educators, including teachers, preservice teachers, administrators and technology specialists, and up to 90 students. The purpose of the pilot is to give a small, coherent group of educators and trainers opportunities to work with the equipment, create lesson plans and engage in field research, data analysis and reporting with a smaller student population. Additionally, we will collect and analyze pre and post pilot project data to determine which aspects of the proposed project would be successful with the group of 48 educators and up to 240 students as allowed under the complete **Lab in a Bag** project during the first full year of funding. Although the proposed **Lab in a Bag** project is built upon research gained from previous Tyler ISD technology projects, this project offers unique components, including working with hand-held technology devices, wireless technology and outdoor, field-based research. The trainers and educators who participate in the spring and summer 2003 Title II, Part D, TARGET, and Title I funded pilot project will serve a mentor teachers and cognitive coaches during the complete proposed **Lab in a Bag** project to be delivered spring - summer 2004. We will use what we learn throughout the pilot project, together with data from previous Tyler ISD technology initiatives and funded projects to guide development and delivery of the full **Lab in a Bag** project.

Local Technology Funds. Tyler ISD district technology funds, as budgeted by the superintendent and approved by the local Board of Trustees will be used throughout the Lab in a Bag project to provide support for technology equipment, software and training delivered by the TISD Instructional Technology team. Additionally, these funds will be used to pay local mentor teachers, specifically math and science mentors, as they provide training throughout the pilot and full **Lab in a Bag** project. Local funds will be coordinated with all available funding, including Title II, Part D, Title I and other funds to support the spring – summer 2003 pilot project and the proposed 2003 – 2004 **Lab in a Bag** project. Further, these funds will support the data collection, analysis and dissemination of information gained from the evaluation of the pilot project. All equipment, software and training provided for under Local Technology Funds will be used throughout the life of the **Lab in a Bag** project.

State Technology Allotment. In addition to local technology funds the Texas State Technology Allotment funds will be coordinated with other available funding to provide support during the spring – summer 2003 pilot. These funds will support purchase of computers and software. Computers and software purchased for the pilot project with State Technology Allotment will be used throughout the proposed **Lab in a Bag** project maximizing the use of all equipment, resources and training purchases.

Telecommunication Infrastructure, E-Rate and Library Connection Funds. All wiring and other online access infrastructure used throughout the **Lab in a Bag** project will be funding through state TIF funds. Additionally, some of the training delivered as part of the TIF project will be applicable to the Lab in a Bag project. E-Rate funds will be used to support online access throughout the **Lab in a Bag** project. Throughout the pilot and complete Lab in a Bag project, educators and students will access resources made available through state and federal Library Connection initiatives.

Adult Literacy Service Providers. Previously, TISD technology projects worked hand-in-hand with adult literacy projects offered through the public library. Similarly, the **Lab in a Bag** project will continue the partnership with the public library's adult literacy programs but extend it to include online materials and resources. Specifically, we will provide online information to students' parents and appropriate online resources for adults. All resources are available through online access provided by the public library and its adult literacy program.

Partnership/Involvement of Others

The proposed **Lab in a Bag** project established a partnership among two public schools, one extended public school campus three private schools, two not for profit public entities, one institution of higher learning, and one state agency. Representatives from each partnership described below serve as project planners and curriculum consultants for the Lab in a Bag project.

Public Schools. Tyler and Whitehouse Independent School Districts have joined into a partnership to coordinate funds, equipment and services for the **Lab in a Bag** project. Jay Olson, Technology Director from Tyler ISD and Bob Arnold, Technology Director from Whitehouse ISD serve as coordinators for all collaboration between these two districts. Based on enrollment data, Tyler and Whitehouse will participate on par with equal percentages of educators and students participating in the project. Whitehouse ISD will provide bus transportation for all educators and students who participate in the project and will assist with technology training and curriculum development. Further administrators from Whitehouse ISD have participated in the planning and development of this project. They will participate in the pilot and help fine-tune the project prior to full implementation in spring-summer 2004.

Camp Tyler. Camp Tyler, part of the Tyler ISD is a key partner in the proposed **Lab in a Bag** project. The Camp Tyler campus hosts current field study projects for Tyler ISD; however participation is limited to 5th grade students. Jim Connally, Camp Tyler director is a fully participating member of the **Lab in a Bag** project planning team and has submitted several proposed field-study projects for consideration. An example of one project is the GPS tree-plotting project. Mr. Connally has designed a project where all Lab in a Bag participants use a hand held device with GPS (Global Positioning System) to plot trees at the Camp Tyler area, make projections concerning future growth, impact on the local ecosystem and surrounding area timber industry.

Institutions of Higher Learning. The University of Texas at Tyler participated as a partner in the recently TIE-funded *teachers.edu* project. The partnership was so valuable that it has been extended in the proposed **Lab in a Bag** project. Whereas one professor and one UT Tyler College of Education administrator helped with the preservice component of the previous project, four professors, including math, technology, science and communication specialists, Professors Lumpe, Starnes, Webb and Guilbert, together with Dr. Mark Lewis, an administrator, will participate in curriculum development, training, and implementation of the project. Drs. Lumpe, Webb and Guilbert have played an active role in designing the proposed project.

Private Schools. Administrators from three area private schools, Stepping Stone (Deanna Moseley, Director), East Texas Christian Academy (Fonda Wilmarth, Director), and Bishop T. K. Gorman (Mark Brandle, Director) attended one on site grant planning meeting and contributed to the development of the project with input at that planning meeting plus additional input via electronic and telephone communications. A proportionate number of area private school educators and students will participate fully in the proposed project. Throughout the project, private schools will contribute to transportation costs associated with bringing students to the site and all field-study projects.

Caldwell Foundation. The Caldwell Foundation is an active partner in the proposed **Lab in a Bag** project. In addition to input during the planning phase, the Caldwell Zoo, operated under the Caldwell Foundation, and under the direction of Linda Kunze, is the site for the first year of field study for educators and students participating in the **Lab in a Bag** project. Ms. Kunze will provide transportation through the Caldwell Foundation for all educators and students to and from the zoo for extended study and data collection. Further, Ms. Kunze will provide education classes for all educators and students while they work and learn at the zoo.

Discovery Science Place. The Discovery Science Place is a non-profit, children's educational museum that serves a 32 county area of East Texas. The mission of The Discovery Science Place - to open young minds to science, math and technology – is a direct match to the goals and objective of the proposed **Lab in a Bag** project. Kris Parks, from the Discovery Science Place contributed to the planning of the proposed project and will provide education classes to help **Lab in a Bag** educators and students learn ways to collect field samples and interpret data. Further, the Discovery Science Place will coordinate with UT Tyler science professors throughout the entire project providing access to exhibits, teacher training, and education classes.

Texas Parks and Wildlife. Irene Hamel from the Texas Parks and Wildlife has attended a planning meeting and contributed to the development of the proposed **Lab in a Bag** project. Ms. Hamel will work with project coordinators to gather information regarding the local ecosystem and work with curriculum planners to locate and secure access to local areas for field-study and data collection.

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TEXAS EDUCATION AGENCY
Standard Application System (SAS)
Technology Applications Readiness Grants for Empowering Texas
(TARGET)
School Year 2002-2003
SCHEDULE #4B--Program Description - Part 5
Waiver for Required Use of Funds for Professional Development

212-905
County District No.

Amendment No.

USE AS MANY PAGES AS NECESSARY, FRONT SIDE ONLY, FONT SIZE NO SMALLER THAN 9 POINT.

Not applicable to the proposed **Lab in a Bag** TARGET funded project.

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TEXAS EDUCATION AGENCY
Standard Application System (SAS)
Technology Applications Readiness Grants for Empowering Texas
(TARGET)
School Year 2002-2003
SCHEDULE #4C--
Program Evaluation Design

212-905
County District No.

Amendment No. _____

Limit to 1 page, front only, font size not less than 9 point.

Overview

The Project Director and administrators working with the proposed **Lab in a Bag** project agree to comply with any evaluation requirements that may be established by the Texas Education Agency. Further, we agree to submit all written reports as outlined in this RFA. The evaluation plan for **Lab in a Bag** addresses three major questions: (1) To what extent were the activities of the project implemented as planned? (2) How effective were the activities in achieving the goals and objectives of the project? (3) What is the impact of the **Lab in a Bag** project on the educators, preservice teachers, students and partnership participants?

Project Evaluator

TISD will contract with the Dr. Jan Bryan of the Bosenbach Corporation to conduct the evaluation of the **Lab in a Bag** project. Dr. Bryan has experience in outside evaluation and has conducted several grant evaluations for schools in Texas. For a complete description of Dr. Bryan’s qualifications to conduct this outside evaluation, please refer to Appendix E.

Evaluation Design

In addition to written activity/progress reports and on-site visitation by TEA, the **Lab in a Bag** project includes a thorough quantitative and qualitative evaluation design.

Process evaluation. To assess the quality, type, and degree of success of professional development offered through **Lab in a Bag**, a qualitative design will be used. Documents, such as sign-in sheets and evaluation documents for professional development will be collected. Participant comments from the evaluation documents will be noted, categorized, analyzed, and used to develop a written report that describes to what extent **Lab in a Bag** developed a successful a cadre of technology integration specialists.

To assess to what extent **Lab in a Bag** educators and preservice teachers were prepared for technology integration and to what extent they developed best practices, quantitative and qualitative measures will be used. Lykert-type scale pre and post surveys will be used to assess changes in teachers’ perceptions of their technology proficiencies and abilities to integrate technology across the curriculum. An analysis of variance in pre and post survey data will yield important information regarding changes in teachers’ perception and behavior. Open-ended questionnaires will be used to further describe changes in teachers’ perceptions toward technology integration and model practices.

To assess to what extent **Lab in a Bag** increased access to technology for teaching and learning, observational data will be collected. Purchase records and lesson plans will be used to indicate increased availability and use of technology equipment, engaging software, and access to on-line resources.

Product evaluation. To assess ways that **Lab in a Bag** impacted educator preparation and development across the partnership, the project evaluator will analyze pre and post survey data that compares teachers perceptions toward technology’s propensity to impact student learning with pre and post Individual Reading, Math and Science Inventories administered to all participating students. In addition, student artifacts such as student work and multimedia projects will be collected and analyzed. Educator artifacts such as lesson plans and instructional presentations will be analyzed. A written report that describes the overall impact of **Lab in a Bag** will be made available to TEA in addition to any other evaluation requirements or required written reports.

Evaluation of Long-Term Impact

One purpose of the **Lab in a Bag** project is to leverage what we have learned over four years of technology integration projects. Further, we hope to extend equipment, resources and instructional expertise across the partnership. Following each year of the proposed project, educators, preservice teachers and students return to their campuses to serve as mentors. We anticipate that the impact of learning with technology will be so great, that at the end of the three-year project, these students will be a leading force in continuing technology integration at the secondary campuses. As part of our evaluation plan, we will follow the students who participated in the project through their high school education to determine which technology strategies they retain and which technology skills and secondary educators adopt instructional methods. Further, we will follow all preservice teachers who participate in the **Lab in a Bag** project -- especially during their first year of teaching – to gauge the effectiveness of intensive professional development on probable success as a first year teacher. We feel that the **Lab in a Bag** project holds promise as a rich source of research on professional development models.