



## Lincoln Public Schools

Mary L. Sterling, Ph.D.  
Assistant Superintendent of Schools

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To: School Committee  
From: Mary Sterling  
Re: Science Enrichment Program  
Date: October 27, 2010

Science enrichment classes are now offered to elementary students once a week in grades 1-3 at Hanscom and grades 1-4 in Lincoln. Half of the enrichment classes extend the science units being taught in the classrooms with project-based learning and an emphasis on inquiry skills. The other half of enrichment classes focus on engineering and address the Massachusetts Technology/Engineering standards for the elementary grades.

Students in grades 1 and 2 are naturally fascinated with technology. While learning the safe uses of tools and materials that underlie engineering solutions, these young students are encouraged to manipulate materials that enhance their three-dimensional visualization skills—an essential component of the ability to design solutions. They identify and describe characteristics of natural and human made materials and their possible uses, and identify uses of basic tools and materials (e.g., glue, scissors, tape, ruler, paper, toothpicks, straws, spools). In addition, students learn to identify tools and simple machines used for specific purposes (e.g., ramp, wheel, pulley, lever). They also learn to describe how human beings use parts of the body as tools.

Students in grades 3 and 4 learn how appropriate materials, tools, and machines extend our ability to solve problems and invent. They identify materials used to accomplish a design task based on the materials' specific properties, and explain which materials and tools are appropriate to construct a given prototype. They achieve a higher level of engineering design skill by recognizing a need or problem, learning different ways that the problem can be represented, and working with a variety of materials and tools to create a product or system to address the problem.

The Lincoln Learning Expectations for engineering in science enrichment classes are:

**Grade 1: Sturdy Structures** Key Outcome: Students will develop an understanding of **what makes a sturdy structure** by planning and building a structure that maintains its shape over multiple tests.

**Grade 2: Inventions** Key Outcome: Students will develop an understanding of inventions by planning and building a prototype that solves a problem.

**Grade 3: Building Robots** Key Outcome: Students will build and test a robot designed to solve a problem.

**Grade 4: Robotics Using Sensors** Key Outcome: Students will build robot equipped with one or more sensors and program them to solve problems.



# Lincoln Public Schools

Mary L. Sterling, Ph.D.  
Assistant Superintendent of Schools

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To: School Committee  
From: Mary Sterling, Karena Hansen  
Re: Progress Report on the FLES program  
Date: October 25, 2010

The Lincoln Public Schools began Foreign Language in Elementary School (FLES) during the 2008-09 school year, at grades four and five. (See reports to Superintendent, 12/18/07; 1/23/08). The decision to start the program was grounded in research that shows the advantages of introducing language learning early and intensively. It was also based on the belief that an early start in a second language provides students with a strong foundation for later language learning and the premise that learning a foreign language strengthens achievement in other subjects. The first year of the program was so well received by students, teachers, and parents that during the second year, a proposal to extend the FLES program to grade three was developed. (See report to Superintendent, 3/1/10).

Expanding the FLES program to grade three was envisioned with several goals in mind:

- To provide young learners a chance to begin second-language learning at an optimal age.
- To expand instructional time in 4<sup>th</sup> and 5<sup>th</sup> grades to accommodate increasing skill and maturity of learners.
- To begin articulation of 6-8 language program to accommodate students with higher skill in 6<sup>th</sup> grade Spanish.

The expansion proposal was accepted and funds set aside to enact plans for implementation in 2010-11. With the addition of grade 3 Spanish, the rest of the FLES program was adjusted to promote a progression of learning over three grades. The time allocations for FLES are now:

- Grade 3: 3 sessions @ 20 minutes per week
- Grade 4: 3 sessions @ 25 minutes per week
- Grade 5: 3 sessions @ 30 minutes per week

As planned, a new, part-time Spanish teacher was hired in the summer of 2010 to teach FLES on both campuses and she worked with the two other FLES teachers in July to prepare for the new program. Principals worked with grade three teachers to integrate three 20 minute lessons of Spanish into their classroom schedule each week. This fall, third graders are already being introduced to the pronunciation code of the Spanish language, words for greetings, names, commands, and feelings, and information about Spanish-speaking regions of the U.S. and countries around the world

As the year progresses, they will also study:

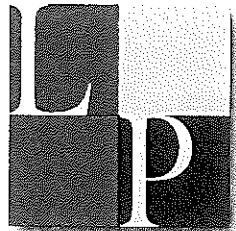
- Classroom objects and numbers
- Personal vocabulary such as colors, families, pets, days, etc.
- Holidays related to Spanish cultures and customs
- Classroom commands, greetings and introductions
- Feelings, Body
- Days and Dates

Each new unit is framed around a theme with specific vocabulary. The students learn to formulate questions and respond to questions using the vocabulary being taught. In this way,

conversational Spanish is developed related to each topic and theme. The students' vocabulary grows as it is embedded in conversation in the classroom and in home practice. The emphasis in grades three and four is on speaking and listening with some introductory writing and spelling Spanish words. In grade five, writing becomes more frequent and introduces basic forms that will prepare students for language study in grade six.

Both teachers and students are enthusiastic about this new opportunity. Teachers have been present and engaged along with the students in learning Spanish. Parents, too, have commented that their children enjoy Spanish classes and are bringing home new words and sentences to share with the family.

Lincoln



Preschool

## LINCOLN PRESCHOOL

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Preschool Coordinator

The goal of the Lincoln Preschool is to provide a developmentally appropriate preschool experience that addresses each individual child's physical, emotional and intellectual growth. The program sets high standards for all children while valuing and accommodating individual differences, strengths and needs. The Lincoln Preschool is open to students between the ages of 2 years, 9 months and 5 years and offers a variety of programming and schedules to meet a wide range of student and family needs. The Lincoln Preschool continues to follow regulations issued by the Massachusetts Department of Early Education and Care and maintains accreditation by the National Association for the Education of Young Children (NAEYC).

### Expansion

The Lincoln Preschool, with funding and support from The Department of Defense Education Activity (DoDEA), expanded the program in order to provide opportunities for more students to attend preschool in preparation for successful entry into primary school. The program increased this year with the opening of two additional classrooms, educating 36 children, at the Hanscom Primary School. The Lincoln Preschool now includes six classrooms with four located on the Lincoln campus and two on the Hanscom campus.

### Program Model

Although the classrooms are located on different campuses, the program operates under the same philosophy and vision. The Lincoln Preschool is committed to providing a safe and nurturing learning environment where students feel comfortable interacting with both adults and peers and where they are exposed to learning new concepts. The preschool teachers work collaboratively to discuss curriculum, assessments and lesson plans to maximize student learning.

While the classrooms, teachers and the students who attend school in the newly added classrooms at the Hanscom campus are part of the Lincoln Preschool, there are some variations between the two sites to meet the needs of a variety of students. The Hanscom campus offers morning and afternoon sessions. Currently, there are two morning classes that meet five days per week for 2.5 hours each day. There is also one afternoon class that meets four days per week (Monday, Tuesday, Thursday and Friday) for 2.5 hours per day. The Lincoln campus has programming that meets on two days, three days or five days per week. Parents and members of an IEP team have the choice or make a recommendation regarding a child's schedule. The program runs for four hours per day.

In addition to providing support to typically developing students, both campuses offer specialized services. The Lincoln campus provides a program that meets the needs of students identified with special education needs. The length of the program and the staffing plan support the inclusion of students with more moderate special education needs. In addition, the Lincoln campus also has an Extended Day program for students who require more intensive skill work as outlined by their Individualized Education Programs (IEPs). The Hanscom

campus was designed to provide opportunities for preschool students of Hanscom Air Force Base to attend an early childhood program. The program at Hanscom primarily supports students who are typically developing or have been identified with mild needs that require related services including speech/language therapy, occupational therapy and physical therapy. The Lincoln Preschool makes placement and services recommendations based on the individual needs of the children.

### Curriculum

The Lincoln Preschool continues to focus on the implementation of developmentally appropriate educational programming that is aligned with the primary school curriculum. Within this past year the preschool faculty expanded curriculum and instruction in the areas of math, science and literacy. This work has included the adoption of new content and materials and improvements in the children's learning experience. During this school year, the preschool faculty will work together to gain a deeper understanding of the skills required at the primary school level in the area of English language arts. This work will further improve the team's ability to develop "Kindergarten readiness" in the oldest preschoolers. The staff will participate in workshops aimed expand their expertise in understanding and implementing the literacy approaches and programs used within the district.

The Lincoln Preschool is dedicated to providing an environment that supports social emotional learning and will continue to focus on the development of the children's social/emotional growth. The Lincoln Preschool faculty and staff engage the children in successful social experiences that also improve cognitive, language and motor skills. Through the implementation of the Devereaux Early Childhood Assessment, the teachers focus on identifying each individual child's social and emotional and utilize the team consult process to evaluate the social emotional needs of our students. In the classrooms, emphasis is placed on supporting the students in learning social communication and cooperation skills with their peers and adults from outside their home. For many of the students, this is their first social experience. Learning how to resolve a conflict, sharing, taking turns and listening to others are all important aspects of learning how to be effective social communicators.

The Lincoln Preschool Faculty developed student learning expectations in all curriculum areas including social/emotional, math, science and English language arts. The learning expectations have been published on the website and are active documents that the staff use in planning the preschool curriculum and in communicating with parents. A continued area of focus is the alignment of preschool curriculum and programming with the learning expectations of the kindergarten programs. It has become increasingly important for students entering kindergarten to have consistent opportunities for facilitated social interactions and concept development. Each year the preschool staff has the opportunity to observe in kindergarten programs. The preschool is committed to working collaboratively with the receiving faculty and staff of the kindergarten programs to support continuity of skills as students' transition into primary school. Next steps will be for the Faculty to establish and implement common assessments in each of the curriculum areas in order to document progress outcomes.

### Students

The students within each multi-age classroom utilize a range of skills and abilities. Students are matched with teachers and peers based on a variety of factors including but not limited to: gender, age, ability and learning style. To the goal of student placement is to create

balanced classrooms where students are exposed to peers with a broad range of strengths and needs.

**Age breakdown of students**

Three year olds	Four year olds	Five year olds
39	58	6

Total enrollment for both campuses of the Lincoln Preschool is 104 students. The classes at the Hanscom campus have a maximum of twelve students per class and have been at their maximum since the program began in early September. At this time, we have applications for five students who are interested in attending the Hanscom classrooms when a slot becomes available. The classes at the Lincoln campus have a maximum of fifteen students per class and have been at full capacity since September. At this time, there are six families waiting for placement in a Lincoln classroom.

Currently, each classroom has up to 33% of students who receive specialized instruction as outlined by their Individualized Education Programs (IEPs). These children present with disabilities in the following areas: developmental delay, communication and autism. Additionally, there are six students who have been referred for evaluations through the special education process and ten students who are receiving related service support in the areas of speech/language, occupational therapy and physical therapy. It is common for preschool students to receive short-term related service support to address areas of concern. The progress of each student is closely monitored and the team convenes to make recommendations based on the data.

The level of need for each student with a disability was first defined by Massachusetts in FY 2001. The information is based on the amount of services the student receives, where those services are provided and the characteristics of the service provider. For instance, a student who receives all of his/her special education services in an inclusive general education environment, but receives such services over 75% of the school day by professional, certified special educators, would be characterized as having a high level of need. A student who receives services for only 10 or 20% of the school day, provided in the general education classroom by the general education teacher would be characterized as having a low level of need. The following table indicates the number of students with disabilities enrolled in the program by level of need.

Level of Need	Level 1	Level 2	Level 3	Level 4
Students receiving special education services	0	0	9	6

Students who qualify for special education services through an Individualized Education Program at the preschool level often require the provision in intensive programming by faculty with specialized training. Often times these students need to leave the classroom to be provided with instruction in a distraction free setting and/or utilize specialized equipment. While the overall number of special education students at the preschool may be lower than students at the preschool may be lower than previous years, the children’s age and level of need requires higher staff ratios.

## Staffing

The Lincoln Preschool has a highly qualified faculty with a comprehensive repertoire of knowledge, experience and skills. The faculty includes a coordinator, special education teachers, occupational therapist, physical therapist, speech and language pathologist, social worker, school psychologist, tutors and aides. Professional development and training are provided for all staff on an ongoing basis and is an important tool in building skills to meet the evolving and diverse needs of the students.

The staffing plan for each preschool classroom includes an Early Childhood Teacher, a tutor and an aide. The Lincoln Preschool maintains or exceeds all teacher/student ratios required by the Department of Early Education and Care and NAEYC. The program is committed to recruiting and retaining skilled and experienced personnel. An overwhelming body of evidence connects educated and experienced caregivers, small group sizes and low teacher-child ratios with high-quality early childhood programs.

At times, additional staff is required to support an individual student. This determination is based on evaluation data and the recommendation of the preschool diagnostic team. In these cases, a student's IEP would articulate services that are intensive and highly individualized. These conditions can include safety risk, specialized health care needs and an intensive level of instruction to access the curriculum.

## Accreditation

The Lincoln Preschool, including both the Lincoln and Hanscom campuses, has been approved by the National Accreditation for the Education of Young Children (NAEYC). In order to be granted approval the program needed to demonstrate that it continues to meet and/or exceed NAEYC's Early Childhood Program Standards and Accreditation Criteria which are based on a framework with four areas of focus including: children, teaching staff, administration and partnership.

## Initiatives

The Lincoln Preschool is seeking financial support to collaborate on the improvement of assessment, curriculum and instruction. Faculty from both campuses will work together during paid summer days to focus on consistency in student learning and development of common assessments in alignment with Lincoln Preschool Learning Expectations. Considering the recent rapid expansion of the program, this work is essential to maintaining a cohesive program. The faculty will use this time to analyze data and outcomes, apply the information to their teaching and differentiate learning outcomes for students based on their developmental level.

## Conclusion

The Lincoln Preschool program is focused meeting the educational needs of preschool students as the face of education changes and the expectations for all students' increases. The Lincoln Preschool has expanded the program and refined teaching and assessment practices to provide a quality early childhood program. Alignment with the District goals and curriculum and student readiness for Kindergarten has been the primary focus. We are particularly proud to continue to provide children of all abilities with a developmentally appropriate curriculum based education that has been recognized by both the Department of Early Education and Care and the National Association for the Education of Young Children (NAEYC). The Lincoln Preschool is committed to the value of a high quality preschool education for all students.