

Pre-Kindergarten Curriculum Guide

Our Mission as a Friends School

A handbook of the curriculum will always be a ‘work in progress,’ a phrase that describes many aspects of schools with dynamic vision. We invite your comments so that we can continue to provide a clear and useful guide.

The curriculum at The Friends School of Atlanta is guided by the mission statement, which embodies Friends values (testimonies), and by developmentally appropriate practice. We believe that in educating children we are guiding them toward an awareness and appreciation of their own uniqueness. For this reason, our curriculum is concerned with all aspects of human development: intellectual, moral, aesthetic, physical, social and emotional. The process by which children learn is as important to us as what they learn.

Academic excellence is the ultimate goal, as we help each child discover the full range of her or his abilities. Teaching new ideas and skills helps us attain that goal by providing a link between the child’s present interests and abilities and his or her innate capacities. We want our students to appreciate that knowledge and understanding open countless possibilities for their lives. In the words of William Damon, Professor at Brown University, and nationally renowned thinker on the moral development of children:

Children do best—intellectually, personally, morally—when they are striving for excellence. Any activity that encourages children to strive for excellence will enhance their motivation to learn, and any instruction that shows them how to achieve excellence will advance their competence. Children are inspired, not stressed, when faced with challenging tasks. They crave the chance to achieve something meaningful.

STUDENTS WILL LEARN ABOUT

- The six Quaker testimonies, Simplicity, Peace, Integrity, Community, Equality, Stewardship (SPICES), orally and through art and literature
- The purpose of Silent Meeting
- The “inner light” or “that of God” in each of us

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STUDENTS WILL HAVE OPPORTUNITIES TO EXPERIENCE AND TO PRACTICE

SILENCE

- Have strategies for settling into silence
- Use silence to reflect
- Use silence as part of conflict resolution
- Understand silence as something other and more than the absence of sound

SIMPLICITY

- Recognize that sometimes the simple solution can be the best solution and learn to look for the simple solution

PEACE

- Show awareness of the gift of thought and its power to create a happier and more peaceful life through actions, speaking and art
- Identify the physical and emotional feelings of being at peace
- Know and use strategies to restore personal peace
- Identify and express a range of emotions
- Use “I” statements in negotiating conflict
- Listen without interruption to someone else’s story/perspective
- Take responsibility for one’s words and actions
- Make and accept apologies
- Seek help at the appropriate time
- Walk away to disengage

INTEGRITY

- Show awareness of one’s “healthy core” of good feelings, making good choices and understanding ourselves and others through actions, speaking and art

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- Recognize the connection and/or gap between personal values and actions
- Take responsibility for one's words and actions
- Embrace the courage to tell the truth regardless of consequences

COMMUNITY

- Make agreements for peaceable cooperation within a community
- Problem-solve with the needs of the group in mind along with the needs of the self
- Act to assist and/or care for people in need

EQUALITY

- Know how to respond when people are put-down or called names

STEWARDSHIP

- Make use of daily habits that maintain the school facility and materials

The Early Elementary Schooling Approach

Using developmentally appropriate practice, teachers allow children time to grow, explore, and discover. Our program meets varied learning styles by integrating a traditional learning model, in which teachers present skills, information and ideas directly to students, with a progressive model, in which teachers engage students in activities and processes to strengthen the child's abilities and skills. In a supportive and noncompetitive atmosphere, children develop as writers, speakers, readers and thinkers. Students conduct research, calculate, experiment, compute and solve problems. Our classrooms and outdoor gardens and habitat provide a stimulating environment so that experiential learning can take place.

Our curricula progress through a recurring spiral movement; that is, students are introduced to a broad range of topics, materials and skills, through which they cycle several times. In math, for instance, students work with geometrical and algebraic concepts at the same time as they learn arithmetical facts. The curriculum allows them to spiral around through these concepts again and again while developing mastery. In science, students may use the same

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skills in different units and in successive years, but expectations of breadth, depth and performance are different. At specified places and times in the program, teachers know when to expect mastery of particular skills.

The advantages of this approach within developmentally appropriate practice are numerous. It allows for more individualized instruction, since students can follow the spiral and develop at their own pace. For some, the light bulb will glow the first time through the unit, for others the third, for others, the fifth. For the student who has the “aha” experience the first time around, the next time, more challenging objectives are presented and expectations for that student are greater. This approach allows for a more coherent learning experience, because the unit can develop in an inclusive and connected fashion, rather than through isolated learning blocks. And this model more closely resembles how a person actually learns, which is through immersion, assimilation and adaptation while scaffolding new concepts and information.

True to Quaker educational practice, a spiraling curriculum can be forgiving and noncompetitive. The nature of the world we live in requires that our students learn the value of cooperation and collaboration. We encourage them to learn from one another by working together on projects, by answering classmates’ questions and by listening to opinions, ideas and beliefs of others. The Friends School of Atlanta wants students to understand and appreciate that they are positive and powerful individuals living constructively within a community of learners.

In sum, as the school seeks to support the Quaker values of peace and equality, we are led to strive for diversity in its student body, faculty and staff. This belief calls for the community’s continued support for and understanding of the impact that such diversity has on communications, teacher practice and student learning and curriculum development. We resonate with the words of the late Ernest Boyer, President of the Carnegie Foundation for the Advancement of Teaching, and a prominent Quaker educator, in his last book, *The Basic School*:

The most essential ingredient of an effective school—the one idea that holds it all together—is best described by the simple word “connections.” An effective school connects people, to create community. An effective school connects curriculum to achieve coherence. An effective school connects classrooms and resources to enrich the climate. An effective school connects life to build character.

Academic Subjects

LANGUAGE ARTS

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TEXT SELECTION

Textbooks

Handwriting Without Tears, Pre-Kindergarten

Friends' Values

Friends' values and FSA's mission reverberate through the language arts curriculum, promoting self-esteem and honor and respect for the voices, talents and styles of each student to realize Friends' belief in the unique worth and value of each individual. The values of equality and community guide the selection of texts, themes and materials used in classrooms. Teachers make sure that literature represents a variety of voices in our culture in order to reflect the diversity of cultures within our community as well as to encourage students to develop a global view of culture. Teachers are content conscious when choosing literature for students to read or to put in classroom and school libraries. Teachers carefully review in advance content that depicts or sanctions violence, disrespect or inequalities among people, genders, ethnic or racial groups and sometimes reject texts for these reasons. Or, teachers may decide to use a provocative text as a teaching tool to encourage students to thoughtfully consider and clarify values or to focus on creating the kind of world that would not harbor violence. Friends' values encourage a climate of respect for each child's developing voice. Paula Lawrence Wehmiller, former principal of the lower school at Wilmington Friends School, writes: "Here at a Friends school, there is a place for the expression of the spirit. It is available to teachers and to children to cope with the unexplained, the mysterious, the larger forces at work in our lives (from "The Miracle of the Bread Dough Rising")." Finally, at the Friends School of Atlanta, teachers frequently model for students how to honor other students' work and ideas, in accordance with Friends values of integrity and equality. Listening respectfully, offering comments in a positive way and not comparing work with another student are all strategies that we commonly use in our classrooms to honor each person's thoughts, feeling and work.

KEY CONTENT THEMES

The mission of the language arts program is for children to become confident and capable communicators through effective writing, reading, listening and speaking. We fulfill this mission by building on students' talents, interests and experiences and providing opportunities for mastery of basic skills. We honor each child by individualizing expectations through differentiation of instruction and assessment, by incorporating high interest, culturally diverse literature and by recognizing a variety of communication styles. We aspire to instill in each learner a love of language that sustains a lifelong process of learning. The Friends School of Atlanta approaches a language arts curriculum through a balanced language program that includes phonics instruction and rich language experiences. Developmentally appropriate instruction forms the core of the program. Skill-based activities and opportunities for dramatics and public speaking are provided to help students develop excellence in writing, reading, listening and speaking. The entire school strives to be a print-rich environment, with labels, posters and teacher- and child-made writings decorating the walls and class libraries. The Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science and Technical Subjects inform our practice.

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LEARNING OBJECTIVES

The traditional skills of reading, listening, speaking and language arts (writing, spelling, grammar and handwriting) are taught in a developmentally appropriate manner to meet the varying levels of ability in each class. In the course of a day, students are involved in reading and language-based activities for as much as three hours, with specific instruction ranging from an hour to an hour and a half.

Reading

Friends School of Atlanta has adopted the “Reading Workshop” approach for teaching reading, authored by Lucy Calkins. We teach beginning readers decoding, phonics and sight words. Emergent readers also learn other strategies, such as context, syntax and picture clues, to decipher unknown words. Fluency in reading is a developing reading skill beginning in the early years. A typical reading period begins with a mini-lesson that introduces a specific skill or strategy followed by a period of independent or paired reading time. For example, the teacher may choose a comprehension strategy to explain, and ask students to practice this in their independent or paired reading time. At the end of the period, students gather back in the whole group to share examples of the strategy they used that day in reading. Teachers may use literature groups to allow students to share comprehension skills, new ideas, new vocabulary and elements of style.

Students will:

- Develop a love of reading and books
- Read every day at school
- Cultivate a knowledge and enjoyment of many types of literature: fiction, nonfiction, poetry, essays, biography, folk tales, legends, myths, mysteries and plays
- Become proficient readers
- Develop comprehension abilities and critical and analytical skills to learn to read for information

Speaking

Effective speaking techniques are brought into the curriculum through opportunities to develop conversation, poetry reading, dramatic activities and public speaking. Students view the classroom as a place to share and collaborate, generating many opportunities for verbal interaction. Students learn how to be responsive listeners and speakers. Clarity of speech and focus of thought are emphasized. Dramatic or thematic celebrations provide a more public venue for showcasing verbal expression skills and students take pride in their accomplishments before an audience of other classes and/or parents.

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Some classrooms begin the day with singing, which develops a child's ear for musical language as well as the speaking qualities of rhythm, inflection, volume, articulation and pacing. Oral reports about books and projects allow students to practice proper body language and eye contact when addressing a group. Tone of voice, volume, pacing and inflection are speaking skills taught at various points in the elementary program, with a view toward truthful and kind communication.

Students will:

- Use speech to vocalize needs and communicate effectively and appropriately in different situations
- Learn oral language skills including articulation, inflection, volume and tone of voice
- Express ideas, thoughts and opinions in discussions
- Be provided opportunities for experiential learning through a range of expressive roles: retelling stories, reciting poetry, role-playing, group and individual oral reading, dramatics, oral presentations and public speaking

Listening

Throughout the day, students are actively learning about the power of language. Listening to other's opinions and learning to comprehend oral material are accomplished through group discussion and written reflection. Sequence of events, details about setting, plot and characters and point of view are encouraged by asking students to recall and retell what they have heard or read. Cooperative work in small and large groups encourages listening to and negotiating or accepting another point of view as students find ways to move ahead with their projects.

Students will:

- Use active listening skills with peers and adults in small and large group settings
- Use listening activities to develop an appreciation for point of view, perspective, oral literature and shared writing
- Use listening to follow directions and to develop attention span

Language Arts, Writing, Spelling and Handwriting

Our youngest children begin writing creatively using inventive or temporary spelling to facilitate fluency. Temporary spellings allow children to write down the sounds of the words they don't know without losing track of their thoughts. Beginning in first grade, students are introduced to conventional spelling rules and word patterns along a developmental continuum from vowel sounds to classical roots and affixes. We teach handwriting (pre-K through 4th) with the *Handwriting Without Tears* © curriculum.

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Students will:

- Think of themselves as writers and authors
- Use a process approach when writing and publishing
- Use grammatical constructions and spelling rules through interest-based and skill-focused writing
- Feel a sense of ownership and authorship through a “real-world” product (i.e. individual or group publication)
- Practice writing on selected topics after researching (reading for information)

SKILLS

Reading

Reading Foundational Skills

Students will:

Print Concepts

- Demonstrate understanding of the organization and basic features of print
 - Follow printed words from left to right, top to bottom and page to page
 - Recognize and name all upper and lower case letters in the alphabet
 - Point to printed words and sentences that students hear the teacher say
 - Recognize that spoken words are represented in written language with specific sequences of letters
 - Understand that words are separated by spaces in print
 - Copy and generate own written words and sentences

Phonological Awareness

- Demonstrate understanding of spoken words, syllables and sounds (phonemes)
 - Recognize and produce rhyming words
 - Add or substitute individual sounds (phonemes) in simple, one-syllable words to make new words

Phonics and Word Recognition

- Know and apply grade level phonics and word analysis skills in decoding words
 - Demonstrate basic knowledge of one-to-one letter-sound correspondences by producing the primary and many of the most frequent sounds for each consonant

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- Associate the long and short sounds with the common spellings (graphemes) for the five common vowels (a, e, i, o, u)
- Read common high frequency words by sight (e.g., the, of, to, you, she, my, is, are, do, does)

Fluency

- Read with sufficient accuracy and fluency to support comprehension
 - Read emergent reader texts with purpose and understanding

Comprehension for Literature and Informational Text

Key Ideas and Details

- Read closely to determine what the text says explicitly and to make logical inferences in it; cite specific textual evidence when writing or speaking to support conclusions drawn from text
 - Ask and answer questions about key details in a text with prompting and support (WPS)
- Analyze how and why individuals, events and ideas develop over the course of a text
 - Identify major characters, settings and major events in a story (WPS)

Craft and Structure

- Interpret words and phrases as they are used in a text, including determining technical, connotative and figurative meanings, and analyzing how specific word choices shape meaning or tone
 - Ask and answer questions about unknown words in a text (WPS)
- Analyze the structure of texts, including how specific sentences, paragraphs and larger portions of the text (e.g., a section, chapter, scene or stanza) relate to each other and the whole
 - Recognize common types of texts (e.g., stories, poems)
 - Identify the front cover, back cover and title page of a book
- Assess how point of view or purpose shapes the content and style of a text
 - Name the author and illustrator of a story and define the role of each in telling the story or in presenting the ideas or information in a text (WPS)

Integration of Knowledge and Ideas

- Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
 - Describe the relationship of the illustrations and story or text in which they appear (e.g., what moment in a story or what person, place, thing or idea in the text an illustration depicts)(WPS)
- Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence

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- Identify the reasons an author gives to support points in a text (WPS)

Range of Reading and Level of Text complexity

- Read and comprehend complex literary and informational texts independently and proficiently
 - Engage in group reading activities with purpose and understanding

Language Arts

Students will:

Conventions of Standard English

- Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking
 - Print many upper- and lowercase letters
 - Use frequently occurring nouns and verbs
 - Form regular plural nouns orally by adding /s/ or /es/ (e.g., dog, dogs; wish, wishes)
 - Understand and use question words (interrogatives) (e.g., who, what, where, when, why, how)
 - Use the most frequently occurring prepositions (e.g., to, from, in, out, on, off, for, of, by, with)
 - Produce and expand complete sentences in shared language activities

Vocabulary Acquisition and Use

- Demonstrate understanding of word relationships and nuances in word meanings
 - Sort common objects into categories (e.g., shapes, foods) to gain a sense of the concepts the categories represent with guidance and support (WGS)

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- Demonstrate understanding of frequently occurring verbs and adjectives by relating them to their opposites (antonyms) (WGS)
- Identify real-life connections between words and their use (e.g., note places at school that are colorful) (WGS)
- Distinguish shades of meaning among verbs describing the same general action (e.g., walk, march, strut, prance) by acting out the meanings (WGS)
- Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression
 - Use words and phrases acquired through conversations, reading and being read to and responding to texts (WGS)

Writing

Students will:

Text Types and Purposes – These broad types of writing include many subgenres

- Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence
 - Use a combination of drawing, dictating or writing to compose opinion pieces in which they tell the reader the topic or name of the book they are writing about and state an opinion or preference about the topic or book (e.g., My favorite book is ____)
- Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through effective selection, organization and analysis of content
 - Use a combination of drawing, dictating or writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic
- Write narratives to develop real or imagined experiences using effective technique, well-chosen details and well-structured event sequences
 - Use a combination of drawing, dictating or writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred and provide a reaction to what happened

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Research to Build and Present Knowledge

- Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation
 - Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them)
 - With guidance and support, participate in shared research and writing projects (e.g., read a number of books on single topic to produce a report; record scientific observations)
- Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source and integrate the information while avoiding plagiarism
 - Recall information from experiences or gather information from provided sources to answer a question, with guidance and support (WGS)

Speaking and Listening

Students will:

Comprehension and Collaboration

- Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively
 - Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and large groups
 - Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion)
 - Continue a conversation through multiple exchanges

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- Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively and orally
 - Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood
- Evaluate a speaker’s point of view, reasoning and use of evidence and rhetoric
 - Ask and answer questions in order to seek help, get information or clarify something that is not understood

Presentation of Knowledge and Ideas

- Present information, findings and supporting evidence such that listeners can follow the line of reasoning and the organization, development and style are appropriate to task, purpose and audience
 - Describe familiar people, places, things and events and with prompting and support provide additional details
- Make strategic use of digital media and visual displays of data to express information and enhance understandings of presentations
 - Add drawings or other visual displays to descriptions as desired to provide additional detail

MATHEMATICS

Introduction

Everyday Mathematics curriculum developed by the University of Chicago (published by Wright Group/McGraw Hill) is used in the elementary from Pre-Kindergarten through Grade 4. It is research-based and extensively field-tested. Information about the research can be found on the program’s website (everydaymath.uchicago.edu). The curriculum is developmental and emphasizes real-world problem-solving and complex topics at all grade levels. The curriculum is taught through six strands: Number and Numeration, Operations and Computation, Data and Chance, Measurement, Geometry and Patterns.

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This program is in its fourth edition (2011-12) and follows standards developed by the National Council of Teachers of Mathematics (NCTM). Some of the characteristics of this program we find compelling are its developmental nature, its spiraling curriculum, its emphasis on the language of math and its provision for many kinds of activities to meet students' varied learning styles, all characteristics that dovetail with the school's mission.

Process

The aim of mathematics at the elementary level is to give shape and form to the intuitive mathematics knowledge that each student brings to school. Instruction builds on prior knowledge and every day experiences. Investigations in what might be considered advanced topics – geometry, data and statistics, algebra – begin in kindergarten and increase in complexity throughout the grades.

In Pre-Kindergarten, math skills are reinforced daily through calendar time, Minute Math lessons and large and small heterogeneous age group games. The specific math concepts are introduced in small instructional groups during 40-minute math sessions. The children learn math through hands-on, experiential activities that meet their developmental needs.

TEXT SELECTION

Everyday Mathematics, Pre-Kindergarten, from The University of Chicago

LEARNING OBJECTIVES

Our goals for all students are:

- to value mathematics
- to communicate mathematically
- to reason mathematically
- to be confident in their ability to become mathematical problem solvers

Knowledge and understanding of the basic operations are as important as pattern recognition, computational ability and problem solving. *Everyday Mathematics* curriculum reinforces these by cycling through many mathematical strands sequentially. After teachers introduce a new concept or skill, students have many opportunities to practice it in a variety of contexts and using different strategies or algorithms before mastery is expected, sometime later that year or in the next. Partner and small group learning activities encourage students to share their thinking and ideas with their peers in a cooperative learning environment. Use of manipulative materials for the youngest students allow for experiential learning. Calculator usage is taught

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beginning in first grade, and use of calculators adheres to guidelines set by the text and national math standards. In addition, FSA sets a goal for students to memorize math facts at age appropriate levels to increase their calculation speed and accuracy.

We challenge mathematically adept students and provide alternate strategies or remedial work for students with special needs. Teachers regularly provide challenge or review activities during math instructional time by extending or reinforcing the lesson, providing extra materials or activities and sending work home in addition to regular assignments. Within the *Everyday Mathematics* program are several components that provide teachers and students with many options for challenge or reinforcement. First, many of the problems are open-ended, which means that more than one right answer is possible. So, students of differing abilities can be successful at their own level of understanding. Also, most of the lessons have challenge problems for advanced thinkers. Secondly, the program encourages students to try out multiple strategies for solving problems, a definite challenge. The skill of looking for and finding many ways to solve the same problem is useful later on for advanced work in math in science. Students who feel more comfortable with familiar strategies have that option, too. Thirdly, pattern recognition and use is very important in this program for speeding up the process of computation. Finally, every workbook page emphasizes variety, instead of a lot of similar problems as in some other programs. This technique allows for quick review and repetition over time and keeps problem solving from becoming tedious yet, challenges the learner to think about a variety of math ideas.

SKILLS

Numbers and Numeration

Students will:

Number and Numeration

- Perform rote counting 1-20
- Count by 10s
- Count backward from 10 to 1
- Locate numbers on a number line

Rational Counting

- Count objects, actions, or sounds up to 10
- Form groups of 0-10 objects
- Read and write numbers to 20
- Display and read numbers on a calculator

Place Value and Notation

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- Name the ordinal positions in a sequence and “next” and “last” positions
- Identify the number that is one more or one less than a given number

Equivalent Names for Whole Numbers

- Find equivalent names for numbers

Comparing and Ordering Numbers

- Compare and order numbers to 10

Operations and Computation

Students will:

Addition and Subtraction Procedures

- Explore joining or removing concrete objects
- Solve addition/subtraction numbers stories using manipulatives

Models for Operation

- Explore equal-grouping and equal-sharing division problems

Data and Chance

Students will:

Data Collection and Representation

- Collect data by counting
- Make a tally chart
- Record data in a table/chart
- Record days/events on a timeline
- Create/interpret a bar graph, pictograph or Venn diagram

Data Analysis

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- Summarize and interpret data
- Make predictions about data
- Identify “more” or “less” from pictographs and bar graphs
- Use data in problem solving

Qualitative and Quantitative Probability

- Predict outcomes; solve problems involving chance outcomes
- Conduct experiments; test predictions using concrete objects

Measurement and Reference Frames

Students will:

Length, Weight and Angles

- Compare and order lengths/heights of objects
- Measure lengths with nonstandard units
- Compare and order weights
- Use a pan balance

Area, Perimeter, Volume and Capacity

- Explore measuring volume/capacity
- Compare and order the capacities of containers

Units and Systems of Measurement

- Estimate the duration of a minute
- Investigate/compare fast and slow

Money

- Match, sort and compare coins

Temperature

- Recognize the function of a thermometer
- Read a thermometer for relative hot or cold temperature

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Time

- Demonstrate an understanding of the concepts of time; estimate and measure the passage of time using words like before, after, yesterday, today, tomorrow, morning and afternoon
- Explore the purpose and use of calendars
- Name the seasons of the year
- Identify the days of the week and months

Geometry

Students will:

Plane and Solid Figures

- Explore shape relations
- Identify 2-dimensional shapes; sort shapes by attribute
- Construct models of polygons using manipulatives and geoboards
- Match objects to outlines of shapes (on a pattern block template)
- Trace 2-dimensional shapes (such as triangles and quadrilaterals); describe objects in the environment that depict geometric figures
- Create/extend designs with 2-dimensional shapes
- Combine shapes and take them apart to form other shapes
- Identify the shapes of faces

Transformations and Symmetry

- Identify symmetrical figures or symmetry in the environment
- Fold and cut symmetrical figures
- Create/complete a symmetrical design/shape using concrete models and/or geoboards

Spatial

- Locate objects by proximity and direction words such as over, under, above, below, inside, outside, beside, in front of, behind, next to
- Follow directions for finding a place or object

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Patterns, Functions, and Algebra

Students will:

Patterns and Functions

- Identify, extend and create patterns of sounds, physical movement and concrete objects
- Explore and extend visual patterns
- Find patterns and common attributes in objects/people in the real world
- Create and complete patterns with 2-dimensional shapes
- Identify and describe the similarities and differences of objects
- Sort and classify objects by attributes

SCIENCE

At the heart of the science curriculum at The Friends School of Atlanta is the belief that science learning is an active process guided by students' natural curiosity about the world. Our aim is to encourage inquiry through experiential activities and discussion, while also teaching a body of knowledge within a non-competitive developmental program that addresses the whole person and is sensitive to diverse learning styles and interests. In addition to regularly scheduled science classes, students have the opportunity to participate in the whole school annual Science Fair. In keeping with our non-competitive emphasis, the fair is a community building event and student projects can be individual or family affairs. Projects are not judged or awarded prizes, but rather each is reviewed and students all receive a written evaluation and a participatory ribbon.

From Pre-Kindergarten through 8th grade, the science program addresses three broad areas, life sciences, earth sciences and physical sciences, integrating them as necessitated by the curriculum, for instance, the study of the environmental. Within this framework, the scientific process guides the direction of our activities: observing, recording information, predicting outcomes, forming hypotheses, experimenting and analyzing and summarizing findings. Scientific studies are naturally woven into other curricular areas through reading, writing, researching, recording, measuring, graphing, explaining and portraying results, comparing, contrasting and analyzing. In keeping with the Quaker testimonies of simplicity, peace, integrity, community, equality and stewardship, students explore the effects of their actions as individuals, families and communities on their immediate environment and the world. FSA encourages students to be mindful of the power of one to bring about change in light of scientific facts.

FSA follows the endorsement of teaching evolutionary science by the National Science Teachers Association (NSTA). Their position statement can be found at the following address: <http://www.nsta.org/about/positions/evolution.aspx>.

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Elementary Science Program

Elementary classrooms encourage daily interest in experiential science through terrariums, aquariums, classroom pets and activities such as weather observations and measurements, recycling and composting. Weekly, monthly and seasonal activities include cooking, nature walks, bird and tree observation, creek or pond studies and planning, planting and caring for classroom and school gardens. Through unit topics and integrated studies, science is part of both academic and routine parts of the day. For instance, during Morning Meeting routines in the youngest classes, students observe and chart the weather and make predictions about the rest of the day; in older classes students pay attention to the season and significant changes, such as length of day and night and changing clock time. They also learn seasonal vocabulary (e.g., *equinox*, *solstice* or synonyms for *cold*).

Science is regularly integrated into language arts and reading. Whether during read-aloud or independent reading, books related to the science unit are incorporated into the day and into students' book bags and bins. After students have participated in unit work, perhaps observing and drawing plants in the garden or noticing all the patterns of a pumpkin, teachers ask students to write about the experience—4 and 5 year olds will write one sentence with teacher help and older students may write a paragraph or two. Friends' educational practice calls for experiential learning to offer students the opportunity to form their own questions, investigate through projects and experiments, compare and contrast and come to their own solutions. Throughout the elementary school, an observer will notice writing and drawings about science projects, as well as experiments in progress. During science class, students share their curiosity, their discoveries and their wonder.

SCIENCE CURRICULUM FOR PRE-KINDERGARTEN: KEY CONTENT THEMES

Introduction

Students in the Pre-Kindergarten-Kindergarten (4/5 class) and Kindergarten-first grade (5/6 class) have a natural curiosity about the world around them that informs the science curriculum for this age. They are eager to learn, investigate and hone their knowledge of the world. They note the various patterns in nature and wonder how and why things and beings change and work. Students use their senses to make observations about physical attributes to become aware of similarities and differences. They learn simple sets of attributes that categorize and distinguish groups of life forms. There is a special emphasis on developmentally appropriate activities that give children a chance to manipulate, measure and even reconstruct the objects of study.

Process

Our youngest students learn to understand the world primarily by observing, then drawing, graphing, labeling, sorting, measuring, writing factual sentences and constructing models and collages and other works of art to make meaning of their observations. Lessons include objects that can be touched, tasted, smelled and heard. The subject is further explored through readings, singing, creative movement and dramatic interpretation. When possible, the unit includes a field trip that allows the children to deepen what they have learned in the classroom environment. The school grounds and gardens are also a wonderful laboratory for watching the cycles of life for many life forms and the patterns of the seasons.

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In both the Pre-Kindergarten-Kindergarten and the Kindergarten-first classes, science and social studies instruction are integrated into unit work and taught in a whole class grouping. Students work with hands-on activities and experiments in small groups. Science and social studies units each compose about 50% of the year's topics. In addition to Unit time, science instruction is also integrated into language arts, math, art, music, morning meeting, calendar, Discovery enrichment classes and even recess. Reading about current science topics happens frequently during daily oral reading times. The 30-minute calendar routine grounds the children daily in the skills of reading graphs and thermometers and in observing the weather and the patterns that develop each month. On Fridays, science topics may be planned for the year during Discovery enrichment class, a 50-minute, small group and multi-age class that meets for a four week rotation during the whole year. Science topics covered have included: soil, herbs, trees, birds, solar system, air, coral reefs, nutrition, health and cooking. Special projects, such as cooking, and science-related field trips, also occur about once a month.

LEARNING OBJECTIVES

Habits of Mind

Students will:

- Be aware of the importance of curiosity, honesty, openness and skepticism in science and will exhibit these traits in their own efforts to understand how the world works
- Raise questions about the world and be willing to seek answers to some of the questions by making careful observations with the five senses and trying things out
- Have the computation and estimation skills necessary for analyzing data and following scientific explanations
- Use whole numbers for counting, identifying and describing things and experiences
- Make quantitative estimates of nonstandard measurements (e.g., blocks, counters) and check by measuring
- Use tools and instruments for observing, measuring and manipulating objects in scientific activities
- Use ordinary hand tools and instruments to construct, measure (i.e. balance scales to determine heavy/light, instruments for collecting weather data and tools for non-standard units for length) and look at objects (e.g., magnifiers to look at rocks and soils)
- Make something that can actually be used to perform a task using paper, cardboard, wood, plastic, metal or existing objects (e.g., inner body models)
- Communicate scientific ideas and activities clearly
- Describe and compare things in terms of number, shape, texture, size, weight, color and motion to begin to draw pictures that portray features of the object, time or space being described

Nature of Science

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Students will:

- Understand the important features of the process of scientific inquiry.
- Apply the following to inquiry learning practices:
 - In doing science, it is often helpful to work with a team and to share findings with others
 - Tools such as rulers, magnifiers and balance scales often give more information about things than can be obtained by just observing things without the help of tools
 - Much can be learned about plants and animals by observing them closely, but care must be taken to know the needs of living things and how to provide for them

SKILLS

The Pre-Kindergarten/Kindergarten class follows a two-year unit rotation. The schedule of units a student may experience is dependent on the year in which the student begins and the classrooms she/he experiences.

Scientific Method (Every Year)

Students will:

- Ask questions about something that is observed (object, something in nature or concept under investigation), e.g., “I wonder why seeds grow?”
- With teacher guidance, do initial research with books, the library or the internet to answer questions
- With teacher guidance, formulate a hypothesis, guess or prediction about question and what might happen when a condition changes for the object or concept under investigation; state the hypothesis in a way that can be measured, e.g., “I think seeds need water and light.”
- With teacher guidance, set up an experiment to test question and hypothesis
- Observe and talk about the changes, using all of the senses
- Use tools to measure the change (e.g., rulers, pan balances, thermometers, magnifiers, microscopes and non-standard units of measurement)

Earth Science: Day and Night Sky (Year One)

Students will:

- Students will describe time patterns, such as day to night and night to day, and objects, such as sun, moon, stars, in the day and night skies

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- Describe changes that occur in the sky during the day, as day turns into night, and during the night as night turns into day
- Classify objects according to those seen in the day sky and those seen in the night sky
- Recognize that Sun supplies heat and light to Earth

Earth Science: Rocks and Soil (Year One)

Students will:

- Describe physical attributes of rocks and soils
- Use senses to observe and group rocks by physical attributes such as large/small, heavy/light, smooth/rough, dark/light, etc.
- Use senses to observe soils by physical attributes such as smell, texture, color and particle/grain size
- Recognize earth materials: soil, rocks, water, air, etc.

Physical Science: Motion and Gravity (Year Two)

Students will:

- Investigate different types of motion
- Sort objects into categories according to their motion, for example, straight/zigzag, round and round, back and forth, fast/slow and motionless
- Push, pull and roll common objects and describe their motions
- Observe and communicate effects of gravity on objects
- Recognize that some objects such as airplanes and birds, are in the sky, but return to earth
- Recognize that the sun, moon and stars are in the sky, but do not come down to earth
- Explain why a book does not fall down if it is placed on a table, but will fall down if it is dropped

Life Science: Inner Body (Year Two)

Students will:

- Demonstrate understanding of the five basic systems in the body: muscles, bones, brain and nerves, digestive system and cardio-vascular system, through listening and responding

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- Demonstrate knowledge of scientific names for a few basic parts in each system, such as the names of the organs, the larger bones, heart, lungs, arteries and veins through reading, viewing models and examining the outer body
- Organize and demonstrate knowledge about the five systems by writing and making an individual, life-size collage of the inner body parts

Integrated Studies—Environmental Sciences: Rainforest (Year One)

Students will:

- Show understanding of three basic layers of the rain forest: the understory, the canopy and the emergent, through speaking, writing and art
- Demonstrate an understanding of a few plants and animals that inhabit each story through listening and speaking
- Demonstrate awareness of the importance of the rain forest for the environmental health of our planet

SOCIAL STUDIES

The social studies program at FSA is designed to balance an introduction to academic content and discipline specific skills, all undertaken through the lens of our mission as a Quaker school. Over the course of the program, students investigate themes related to geography, history, cultural studies and anthropology, government and civics, religion, economics and resources as well as current events. At FSA we have designed our program to prioritize learning how to engage in social science inquiry in the belief that students can study any area successfully so long as they have internalized the tools, processes and methods of the discipline. Students will study American history and world history again in high school, so our goal is not comprehensive coverage of these areas. Instead, our classes provide strategically-defined explorations of content areas that cast into relief the *processes* of social studies and the *role* of the social scientist in performing these processes.

Students certainly learn important and time-honored concepts that are critical to becoming intelligent and thoughtful participants in community and world affairs. But they engage the content while mastering tools that can be carried into a wide variety of future courses and projects along with developing the confidence and self-awareness that will allow them effective use of those tools.

Studies of history and culture provide numerous opportunities for students to explore how human decision-making has sought to institute these values or has instead pursued outcomes that undermine these values. The testimony of integrity requires that we also confront the ways in which decision-makers may believe they seek an outcome, for example, the equitable distribution of resources, while choosing actions that actually undermine that outcome,

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whether through self-deception or the limitations of human understanding. Yet, what might tend toward a relentless gaze into human frailty and misdirection is redeemed by the Quakers' continual search for that of goodness or God in every individual and therefore in every decision maker.

Elementary Social Studies Program

Our aim in elementary social studies is to encourage, nurture and foster students' knowledge of the physical and social world, both past and present, by developing an awareness of how people in many communities and cultures interact with their environment, how they live and what they believe. We also seek to look at the social sciences through the lens of the distinctive experience and perspective of Friends' principles: peace, equality, integrity, community, stewardship and simplicity.

Teachers use a project-based approach with topics that follow developmentally appropriate practice, as well as teacher and student interests. Resources available for social studies include kits, videos, curriculum materials, resource books in the library, the Web and other software in the media lab. Teachers are also guided by Georgia performance standards in choosing units of study. The elementary topics dovetail with the middle school topics in history and geography. In the life of the school, social studies is explicitly taught during specific time periods weekly, and it figures prominently in the implicit curriculum – through routines and classroom management practices, through teacher and student language, through modeled expectations and most of all through Quaker values, such as equality/respect, community-building and peace/conflict resolution. We follow a “social curriculum,” the Responsive Classroom program (Northeast Foundation for Children), which emphasizes cooperative, responsible and compassionate class culture allowing all students to begin on the same page every day, ready to learn. Teachers take week-long workshops to learn how to create equitable classrooms so that knowledge about use of materials, teacher expectations and academic routines and choices are modeled and referenced from the first day of school to the last. These ideas combine well with the values of a Quaker school.

One additional feature of the elementary social studies program is Many Nations Day. Each class chooses a country, time period and/or culture to study and present to others on a chosen day during the year. Many Nations Day studies may include presentations by a guest speaker or parent, chances to taste foods, activities and games and opportunities to hear language and music from other cultures.

In sum, social studies is the place in school life when children are learning what it means to be a group member, as well as an individual, and how to express feelings with words in a constructive manner. Social studies are everywhere!

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SOCIAL STUDIES CURRICULUM FOR PRE-KINDERGARTEN: KEY CONTENT THEMES

Introduction

The moment children enter school they begin to develop a sense of themselves and their world through their interaction with each other, their teachers and others in the school community. For the Pre-Kindergarten and Kindergarten students, social studies means learning about the cultural patterns, customs, historical facts, needs and wants of individual children, and their families and friends. Topics from children's immediate environment, such as food, pets, family members, family activities and cultural traditions, provide the themes for units. The unit topics taught each year are: All About Me, Holidays and Celebrations, Emergency Awareness, Neighborhood and Community, Many Nations' Event, Service Learning and Quaker Education.

Process

In the Pre-Kindergarten-Kindergarten class, social studies and science instruction are integrated into unit time and taught by both lead teachers in a whole class grouping four days a week for 30 minutes.

Social studies lessons are also integrated into other academic areas with exploration of literature, songs, poems, creative movement, games, role-playing, puppetry, fact writing, book making and art projects. Extensive lessons may culminate in a field trip to investigate a community helper or perhaps include a parent presentation about a career. Discovery class, one of our Friday Enrichment classes, introduces social studies lessons in a smaller, multi-age grouping with one teacher in a four week rotation during the year. Each class lasts 50 minutes. The Discovery topics have included Understanding Differences, SPICES: Exploring Quaker Testimonies, Express Diversity, Virtues of the Bear, International Cooking, French and Japanese culture.

Families are encouraged to share a holiday tradition with the class during the Winter Holidays and Celebrations unit. The unit, All About Me, is taught each year at the beginning of the year, and provides experiences that help the children discover and reflect on themselves and each other. For example, children take turns bringing in a collection of objects from home that have been carefully selected to demonstrate activities he or she enjoys. In this way children learn about the interests they have in common and how they are unique. At this age, many lessons will focus around a concrete object that a child can hold and manipulate to begin a discussion of a more conceptual nature. The implicit social studies lessons occur during the many routines and activities of community life during the school day. For example teachers explicitly teach the importance of working together to keep the room clean after eating and project times. Every game time provides opportunities to teach the Quaker values of peace, equality, simplicity and community. Teachers model conflict resolution skills at the beginning of the year and reinforce these throughout the day, every day.

SKILLS

The following units are the same each year, differing in activities and emphasis on children's individual backgrounds. The schedule of units your student may experience is dependent on the year in which your student begins and the classrooms she/he experiences.

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All About Me Unit

Students will:

- Share personal interests and activities with the class through speaking about personal artifacts
- Show understanding of the interests of classmates, family members and friends through retelling and writing simple facts
- Show awareness of one's physical features through observation, speaking, writing and art
- Memorize their address and phone number
- Describe in words and art the definition of family
- Notice and describe in words and through art one's own family structure and that of others
- Describe in words and art and show in actions the definitions of friend and friendship, sharing, listening to and respecting each other
- Show knowledge about personal and classmates' information, such as favorite things, living situations, birthdates, etc. through graphing and art

Holidays and Celebrations Unit

Students will:

- Show knowledge of dates and facts (including symbols, rituals, songs, traditions, stories and games) of the major winter holidays represented in the school community, such as Christmas, Hanukkah, Winter Solstice, New Years', Kwanza, Santa Lucia Day and Three King's Day, through speaking, writing and art
- Share information about the holidays/traditions celebrated by their own family
- Participate in holiday observances shared by other students and parents
- Participate in a stewardship activity planned by class

Emergency Awareness Unit

Students will:

- Demonstrate understanding of the jobs of police officers, fire fighters and ambulance and rescue workers
- Memorize the number to call in an emergency
- Tell others what to do when there is a fire
- Tell others what to do when one is lost
- Show understanding of home safety rules through writing, speaking and art

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- Show understanding through actions of how to play safely and have fun

Neighborhood and Community Unit

Students will:

- Describe, draw and model the distinguishing characteristics of a neighborhood
- Speak, write and play-act about those who live and work in a neighborhood
- Show understanding of the types and locations of housing and businesses neighborhoods through speaking, writing and art

Quaker Education Unit

Students will:

- Have strategies for practicing silence during silent meeting
- Be able to maintain silence during silent meeting
- Know how to speak into the silence when moved
- List and define Quaker values or testimonies named by the acronym SPICES: simplicity, peace, integrity, equality, community and stewardship
- Develop and present a query annually for the whole school community with guidance and support of teachers
- Participate in the Quaker decision-making process (consensus-building)

Service Learning Unit

Students will:

- Develop and participate in a project that enriches the curriculum and provides a service to their community

Many Nations Unit

Students will:

- Be aware that there are many countries and cultures throughout the world
- Focus on one nation/country annually.
- Try some typical cultural experiences of a chosen country or culture (e.g., food, games, songs or dances)
- Describe the basic geography of the chosen country/culture