



## **Friends School Haverford 4th Grade Curriculum**

### **Curriculum by Subject**

Fourth graders pay particular attention to the ethical questions regarding child labor and stewardship of the earth, as raised in the study of the Pine Barrens and anthracite coal regions of Northeastern Pennsylvania, and the coffee farms and tropical rain forests of Costa Rica.

### **Classrooms**

In recent years, the study of communities has been the integrating theme that permeates the fourth grade year, informing language arts, math, social studies, and service projects. Students become passionate and informed advocates of the rights of children and our fragile ecosystem. Students focus on descriptive and expository writing, conduct and present research, use technology to support their work (word processing, Inspiration), and deepen their familiarity with a variety of literary genres, including poetry, biography, and realistic fiction. In science, students compare temperate and tropical rainforests, analyzing the impact of plate tectonics and the water cycle. Students conduct comparison experiments and use chemical tests to identify mysterious substances.

### **Language Arts**

Language arts instruction encompasses listening skills, oral expression, vocabulary development, reading, writing, and writing mechanics (i.e., spelling, grammar, and punctuation). Writer's Workshop is the prevailing format in which students develop writing and editing skills. Students' work includes fictional stories, poetry, compositions, nonfiction writing, reports, and projects (e.g., literature and social studies projects). As readers, fourth graders work to develop their ability to interpret various kinds of texts. Reading for information is practiced via social studies and math assignments. In Reader's Workshop, students discuss either a shared book or individually read books in small groups of 2-4 students. Discussion questions are designed to develop an understanding of literary elements. Silent reading time is a part of the daily schedule. Speaking and listening skills are developed through drama, poetry, discussion, and oral presentations.

## **Math**

Mathematics instruction in the fourth grade is consistent with the National Council of Teachers of Math Standards for math content and processes. Instruction emphasizes problem solving, sense making, communicating ideas verbally and in writing, and establishing links between past experiences and exploration of new concepts. Daily routines reinforce the teaching of basic facts and computation skills; math games supplement instruction. Students work individually, in pairs, and in small groups. They use manipulatives, calculators, computers, and paper and pencil to assist them in their class work. The primary source used to deliver the mathematics curriculum is the Math Trailblazers program from the University of Illinois at Chicago. Teachers may supplement instruction with Marilyn Burns' materials, mathematics trade books, Dynamath magazine, and other games. The content of the Math Trailblazers program is as follows: data, geometry, numbers and number operations, products and factors, using data to predict, place value patterns, patterns in multiplication, measurement, shapes and solids, decimals and fractions, whole-number multiplication and division, probability, and algebraic patterns.

## **Quakerism**

*Peace* – Attention given continually to conflicts and how to be responsible for one's role in a conflict.

*Community* – Inherent in the classroom culture, the environment is set up so that students must rely on each other to fulfill classroom responsibilities.

*Integrity* – Ongoing classroom conversations about one's actions matching one's word; giving one's word to something, then acknowledging when one did not follow through, in order to restore one's integrity.

*Service* – Supporting the Alto San Luis community of Costa Rica through the sale of Café Monteverde.

## **Social Studies**

Social studies instruction begins with the study of the Pine Barrens of New Jersey. Next we study Costa Rica. This includes the study of the pioneering Quakers from Alabama, who immigrated to Costa Rica in the early 1950's, and the diverse geographic regions of this small yet fascinating country. In January we study the anthracite coal regions of Northeastern Pennsylvania, and in the spring we study the Pennsylvania Dutch Country. Highlights of these studies include field trips to the Pine Barrens and anthracite coal region, a Costa Rican holiday celebration, a spring storytelling production, and a combined three-school trip to Harrisburg, PA. In addition, geography skills, Internet and

trade book research skills, nonfiction reading and writing, and computer skills are developed through the fulfillment of research projects using Inspiration, Tux Paint, Power Point, and web site creation software. The social studies curriculum also includes a yearlong study of Pennsylvania history, geography, industry, and people (Pennsylvania Studies Weekly newspaper). Social studies instruction is integrated with language arts (research and poetry), art (cloud forest animals), science (coal mining, sustainable farming, and Environmental Education Symposium), and computer instruction (research and various modes of presentation). Students learn skills for inquiry, as well as mastering factual information.

## **Art**

Our Studio Arts Program is designed to develop self-confidence, pride, trust, and initiative in each child as well as the uninhibited freedom to create with expression. Curriculum balances the academic study of art history and cultural arts with the elements and principles of design to cultivate a lifelong love and appreciation for art and art history and puts art works into perspective relative to the past.

Hands-on activities foster growth in fine motor ability, technical skill, creative thinking, independent problem solving, and observation. Cultivating creative, “out of the box” thinkers is emphasized by offering studio challenges that are sequential and meets each student at their developmental level and particular learning needs.

This developmentally based curriculum strengthens the skills of decision-making, critical thinking, visual communication, and evaluation. Viewing, analyzing, reflecting, group discussion, and writing about art encourages students to synthesize concepts. Through studio-based experiences, students develop an awareness of the relationship between themselves, others, the environment, and the world.

Fourth graders are expected to work with greater independence through process oriented, hands-on activities that challenge their creativity and problem solving skills.

## **Health**

The fourth grade curriculum includes good health habits, the importance of exercise, nutrition, basic first aid, the heart, respecting others, yourself, and the world, systems of the human body (especially muscles and bones), how to deal with anger, sportsmanship, and medicines are topics discussed in class. *Current Health* magazines and the text book are sources of information.

## **Library**

Yearly goals:

By the end of fourth grade, a student should be able to listen attentively, allowing classmates to listen as well, and then volunteer ideas on the story. The student should be

developing an ability to remember a long plot in order, identifying the important elements. S/he should be able to speak when called on.

A fourth grade student at year-end should be able to use the library catalog with facility. S/he should be able to find books and magazines in the library, using the catalog, without needing help.

S/he should know the difference between a dictionary and an encyclopedia, and be able to use each without substantial help, reading an entry successfully for meaning.

S/he should be able to find a book's index, and to use it to locate information.

S/he should be able to follow rows and columns to locate information in a table; and, similarly, to use map coordinates.

S/he should be developing a sense of how to broaden and narrow topics.

A fourth grade student should be able to use his/her knowledge of this library and its reference materials to use other libraries and their reference materials.

In book choice time, students should be able to choose a book, and sign it out without needing help. They should be able to come to the librarian for suggestions where appropriate, and follow the stated rules for behavior in the library. They should be able to listen to and follow directions given to the class.

## **Music**

Fourth grade music builds upon and expands knowledge learned in previous grades. With the addition of general music class time and a chorus period, students have an opportunity to apply and develop skills and concepts learned earlier. A great emphasis is placed on learning to work together as a group. All ensemble work, including folk dancing and improvisation activities, assists that goal. In terms of creativity, students compose more and more of their own music, such as accompaniments to songs and activities.

## **Physical Education**

*Objectives:*

- 1) To introduce skills in a variety of sports.
- 2) To develop a positive self image, positive attitude, and confidence in one's ability.
- 3) To develop respect for life long fitness.
- 4) To learn to cooperate with others, play fairly, and learn a sense of sportsmanship.
- 5) To learn to solve disagreements peacefully.

## **Science**

Students start the year learning about hurricanes: what causes them and how people prepare for them. We then explore plate tectonics, earthquakes and volcanoes. In small groups, students build a three-story oaktag building that will withstand an earthquake. Later, students chose a volcano to research and create a Power Point presentation to share their information with their peers. Finally, in small groups, students work on a computer simulation of a rain forest mystery. They need to come to consensus and make decisions about situations as they try to solve the mystery.

In the Microworlds unit, students learn about the history and parts of a microscope. They also learn to use and care for a compound microscope and a digital microscope and develop their skills in making and recording observations. Students observe prepared microscope slides and make their own slides of onion and cheek cells. They also make slides of live cultures, such as Vinegar eels and Volvox.

Following this in depth study of Microscopes, the children learn about mold and the conditions under which mold grows best. The children design a comparison experiment with one variable that they change. Observations are conducted every week and recorded on the laptops. The students create a poster using the scientific method. Students present their work to other fourth graders at the Mold Symposium.

Lastly, during the Embryology unit, students care for chicken eggs and watch them hatch. We study the development of the chicken before and after it hatches.

## **Spanish**

At this stage, students' comprehension continues to expand and they continue talking. Students are exposed to short stories using the vocabulary that they have acquired. Now they can write their own dialogues that include questions and replies. Students have Spanish class twice a week for 45 minutes.

## **Technology**

Fourth grade students work to improve their skills in typing and Word Processing using Microsoft Word. They practice skills such as formatting text, using copy, cut and paste, and moving text. They learn the proper format for a business letter, and draft letters in defense of the Cloud Forest. The first large research project is concerned with the Cloud Forest of Monteverde, Costa Rica. Students conduct web research using sites that are pre-selected by Teacher Lee and I. Next they use Inspiration to organize their information into a web chart format and an outline. Using this organizational pattern as a guide, students proceed to create a Power Point presentation on their particular Cloud Forest animal. For the second research project on the Pennsylvania Woodlands, we again use web charts to reinforce students' ability to gather and organize information. Recently we have begun working with MicroWorlds, an application that introduces students to

Logo-based programming and allows them to work on various math skills by programming geometric shapes.

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