CURRICULUM SUMMARY
KINDERGARTEN-EIGHTH GRADE

2004-2005

TABLE OF CONTENTS

Revised 01-04-05

THE WILLOW SCHOOL
CURRICULUM SUMMARY

INTRODUCTION

As in any school with a stated mission, The Willow School curriculum is guided by the Mission Statement into concrete studies, sequenced through nine grades kindergarten through eighth, and intended to provide each child with an education that will be an academic foundation not just through high school but also through a lifetime. The Mission of The Willow School is stated below:

The Willow School, a small, independent coeducational day school for students in kindergarten through eighth grade, is committed to combining academic excellence and the joy of learning and to experiencing the wonder of the natural world. Mastery of the English language is an essential element in an integrated curriculum that helps students comprehend the patterns of how things are connected and prepares them for all areas of their secondary education. The school is dedicated to maintaining an environment where respect for the individual, an outstanding faculty, and an understanding of place foster independent thinking, creativity, responsibility, and integrity. The Willow School education enables children to develop an ethical approach to all relationships, to realize their full potential, and to believe in their power to effect positive change.

At The Willow School we appreciate the complexity and seriousness of educating children. We seek to develop each child's intellectual, artistic, and personal potential through a comprehensive inter-disciplinary curriculum. Intellectual curiosity, independent thinking, and excellence are key characteristics of the academic program in which both the process and the product are valued. Children become motivated lifelong learners by experiencing the joy of discovery and the ownership of results through learning that is organic, wondrous, and creative.

The integrated curriculum allows students to learn material in great depth as well as to see the connections that naturally exist among subject areas, making learning more meaningful and lasting. Lessons include multi-sensory activities, because children learn by doing and will experience learning as engaging and fun. Individual learning styles are supported as each child is appropriately challenged. The visual and performing arts are woven into the curriculum and daily life of the school, creating opportunities for different modes of self-expression and interpretation.

Character development is essential to each child's overall growth and citizenship. The Willow School experience helps each child develop a strong sense of self and the desire to live a fruitful life. Students grow to understand and internalize such virtues as integrity, respect, responsibility, compassion, and courage. Children also learn to appreciate the beauty of nature, along with the complex relationships that exist between humans and the natural world. The school's facilities serve as a paradigm of how humans and nature can co-exist harmoniously, and the grounds provide a rich laboratory for observation.

Throughout the curriculum, special attention is given to the written and spoken word, because language is both the mirror of our world and the lens through which we see it. Strong communication skills form the foundation of both academic and personal success. As they acquire proficiency in reading, writing, listening, and speaking, Willow School students gain mastery of the English language.

The Willow School curriculum stretches well beyond these core subject areas. As important additional components of the curriculum, Willow School students also learn time management and study skills, library organization and research skills, and community service. Throughout the program, children learn from the behavioral and educational examples that are established by the adults within the school community.

THE WEAVE OF MAJOR TOPICS

Our curriculum at The Willow School is based on three major topics that weave throughout the entire program. No one topic is embedded exclusively in one course or discipline. Rather, all three topics have a presence throughout our integrated program, so that an activity in any course, at any grade level, should embody the following:

Academic Excellence: Mastery of the English Language

Academic excellence can be defined as the act of thinking well. Thinking well means that a child be given the time to ponder and wonder, the freedom to question and probe, the facility to articulate and accurately the consequences of the query, and the ability to use the consequences of the conclusion as a tool for change. The integrated curriculum allows students to learn material in great depth as well as to see the connections that naturally exist among subject areas. The primary device for integration of the curriculum is the development of communication skills using the English language.

The Willow School language program develops articulation and thoughtfulness in all areas of intellectual and social intercourse. Much of that accomplishment is based on the school's ability to communicate with language linked to all subjects in order to integrate studies consistently throughout the K-8 program. Studying and learning the rules of language in the early years enable the children to understand as well as to create. As students begin to master syntax, vocabulary, and formal grammar rules, they have the tools to refine their use of language. They have the key that unlocks the literal meaning as well as the freedom to access the figurative world wherein lie deep feeling and extraordinary beauty.

From casual conversation to formal presentations, the children need to know and take pride in the quality of their expression. The task of The Willow School is to make certain we have created a program whose commitment to mastery and standards of excellence are carried forward as permanent components and distinguishing features of The Willow School education. Even in our youngest grades, our program should reveal what our graduating eighth graders will "look" like as formal and informal speakers and writers.

Virtues: Living a Life of Ethical Commitment

At The Willow School we cultivate in ourselves and in our students a rich garden of virtues. In so doing we see that by choosing to lead a consciously ethical life, a virtuous life, each individual comes to understand his or her own significance as a valuable and contributing member of the community. Each day begins with the Morning Gathering. This is the space in which we introduce our virtues program and are reminded that an outstanding education encompasses matters not just of the mind but of the heart as well. At Morning Gathering the community comes together to share a story, a poem, a song, a picture or an idea. Carried into the classroom for reinforcement, the intended result is to live through ethical behavior on a conscious and deliberate level.

Using Mary Beth Klee's *Core Virtues* curriculum as a basic model, focus is placed by the school on a different virtue each month. This program outlines a three-year rotation of virtues, which we have modified to suit our needs. The virtues are introduced through stories, which have the power to feed the heart and fire the imagination. As Klee writes, "It is not so much about teaching children what the virtues *mean*, as it is about reading stories that make the virtues *mean something* to the children." This program provides young minds with food for the ethical life, heroes and heroines whose lives and deeds exemplify virtuous behavior. The virtues on a three-year rotational basis are the following:

Month	Yr 1 (2005-06)	Yr 2 (2006-07)	Yr 3 (2004-05)
September	Responsibility and Respect	Responsibility and Respect	Responsibility and Respect
October	Diligence	Temperance	Perseverance
November	Gratitude	Gratitude	Gratitude
December	Generosity	Charity	Service
January	Courage	Courage	Courage
February	Loyalty	Honesty	Justice
March	Compassion	Compassion	Compassion
April	Forgiveness	Faithfulness	Gentleness and Humility
May	Prudence	Prudence	Wisdom
June	Hope	Joy and Wonder	Joy and Wonder

Environmental Education – Sustaining the Civil and Natural World

The natural surroundings of The Willow School in central New Jersey provide an ideal setting for teaching children to appreciate the beauty and the many values of nature. Environmental studies at The Willow School are taught from a balanced perspective: children are taught to understand and appreciate the ecology of the many parts of the natural world (mountains, oceans, forests, wetlands, and so on) while also learning to appreciate the complexities of human needs as they relate to the earth's natural resources. Thus, it is the goal of the school that children with a Willow School education will grow up with the knowledge and the wisdom to intelligently address the complex relationships between environmental protection and economic needs.

The Willow School also embraces physical and outdoor education as integral components of a complete and balanced education. The natural surroundings of The Willow School provide an ideal setting for teaching children to appreciate the beauty and the many values of nature. Environmental studies at The Willow School are taught from a balanced perspective: children are taught to understand and appreciate the ecology of the natural world while also learning to about the complexities of human needs as they relate to the earth's natural resources. Children also learn the importance of regular exercise and a balanced diet to maintaining physical and mental health; and they learn the fun and the rules of sports, and the values and rewards of teamwork.

The purpose of the environmental education program at The Willow School is to build upon the innate curiosity that children have in the natural world, to teach environmental knowledge and skills that will allow them to make wise and informed decisions, and to encourage them to become active participants in finding and implementing solutions to the complex issues involving the protection of the earth's resources.

The Willow School approaches environmental education from nine individual yet interconnected perspectives:

1. Science curriculum
   The hands-on science program explores many aspects of the natural world, from plants, animals and life cycles to the earth's materials and forces to weather. These topics will lay the foundation for environmental studies.
2. Environmental Studies Curriculum
   Environmental studies is a subtopic of the science program, with specific ties to social studies, art, and language arts. In the early years, children will learn to love nature and to name the world around them. They will learn about recycling, conserving water and electricity, riding a bicycle or taking mass transportation, and other simple yet important actions. Older children will learn about specific issues we face in the scientific, economic and political arenas, along with possible solutions.
3. Outdoor classroom
   The school site is utilized as an outdoor classroom for the study of wetlands, forest and meadow habitats, observation of local plant and animal species, weather and seasonal changes, soil and geological studies, etc. Students will establish a garden to study plant growth and animal interactions, and bird feeders will attract local species.
4. Field trips and assemblies
   Visitors with environmental programs to share will periodically be invited to individual classrooms and to assembly programs. Students will also take field trips to New Jersey nature centers and arboreta. The school will seek environmental education partnerships with such organizations as:
   - The Upper Raritan Watershed Association
   - The Environmental Education Center in Basking Ridge
   - Voorhees State Park Observatory
   - New Jersey Audubon Society
   - New Jersey Department of Environmental Education
5. Community Service
   The school's community service program will include environmental projects at all grade levels, ranging from tree planting through the New Jersey Tree Foundation to gathering data for the worldwide GLOBE project to volunteer work at the Scherman Hoffman Wildlife Sanctuary in Bernardsville.
6. Virtues
   The Core Virtues of beauty, kindness, respect, stewardship, and wonder will be specifically integrated into the environmental studies program.
7. Family Week and Earth Week
   Each spring, The Willow School has two special weeks, Family Week, in early March just before spring vacation, and Earth Week, in late April. Family Week draws as many family members to the school as possible to engage in special workshops and activities, many of which relate to the outdoors. During the week that includes Earth Day (April 22), the school creates a special focus on the earth. This week-long celebration includes music, art, poetry, readings, plantings, cleanup, animal presentations, storytelling, assemblies and field trips all planned around the theme of environmental understanding and stewardship.
8. Buildings and grounds
   The school's facilities are carefully designed to promote connections between indoor and outdoor classrooms, with large windows, high ceilings, and natural building materials. Attention is given to energy efficiency and other means of demonstrating the school's commitment to environmental stewardship.

9. Recycling and use of recycled paper
   A recycling program gives children first-hand experience with conscientious use of the earth's resources, and proper disposal for re-use. The school also seeks to purchase items that are made from recycled materials.

KINDERGARTEN-EIGHTH GRADE CURRICULUM: THEMES

The K-8 curriculum constitutes a spiral of themes and ideas children return to over and over again in more and more depth. Curriculum themes provide contexts for the exploration of questions of vital importance for human beings living in the 21st century. Who am I, and how can I use my personal gifts and interests to enrich my life and the life of the human and natural environment around me? What is the meaning of responsible membership in a group, or citizenship in a country? How do my actions and decisions affect my human and natural environment and how do they affect me? How do humans respond effectively to challenges? What are possible ways to solve conflicts? What choices in life preserve and nurture the biodiversity and cultural richness of our world and ensure the well being of both local and global communities? These are the vital questions people in this century must start asking if the continuing deterioration of our environment is to be prevented and peace among the peoples of the earth is to be achieved.

If these questions are to be answered in ways that lead the next generation to make responsible decisions that preserve life, promote equality, and ensure creative solutions to the difficult problems our world faces, it is of primary importance that learning be informed by the cultivation of virtues of character, and the lessons to be drawn from human history and individual achievements. In addition, if children are to feel confident about tackling the complex problems of our world, their school years must build their confidence as problem solvers and creative thinkers. Therefore, the curriculum emphasizes inquiry and problem solving. Children must be challenged to make meaning of what they are learning, and to connect all their learning experiences in creative ways to solve problems they themselves learn to identify and solve.

When choosing themes for the curriculum we must keep in mind that we are teaching students skills of strong communication and scientific and mathematical competence in order that they might solve human problems and build a better world for themselves and the future generations. Human history, philosophy, the workings of political and economic interactions, the ways in which people organize themselves and create ways to cooperate together need to be familiar territory to them so that they can understand the tasks that lie ahead, avoid the mistakes of the past, and feel inspired by the examples of the admirable behavior of those whose individual contributions have meant so much to all of us.

If we require children to take a leap thousands of years removed from their reality too soon, the meaning we want them to extract from human experience will be lost because they will not be able to identify with it. History will be perceived as a romantic fairy tale, battles as a form of play they learn to admire rather than abhor. Thus the departure point has to be the immediate, the familiar, the present, with a gradual move to the remote, the chronologically removed. As this movement into the past and the far away is made, care must be taken to ground each investigation into the present. It is important to keep in the foreground of our teaching why we are investigating a particular topic, how this topic relates to our lives, how its study helps us make sense of our world, and how it empowers us to do a better job of producing a better life for our society and the global community.

The primary purpose in our program is to combine the three basic functions of our curriculum: providing challenging academics, with an ethical grounding that leads to virtuous behavior, and with particular commitment to living in a setting devoted to ecological awareness. Given these three dimensions as foci, we provide yearly themes for all three parts of our curriculum: academic, ethical, and

environmental. The following is a summary of these themes, with a description of each following the summary:

Grade	Academic Theme	Virtues Theme	Environment Theme
K	Self	Joy & Respect	Willow
1	Community	Wonder & Patience	Seeds
2	Multiplicity	Generosity & Gratitude	Soil
3	Belonging	Loyalty & Service	Home/Habitat
4	Movement	Hope & Courage	Wind
5	Solutions	Diligence & Perseverance	Water
6	Conflict, Law & Synthesis	Honesty & Justice	Fire
7	Similarities & Differences	Forgiveness & Compassion	Weather
8	Patterns & Systems	Responsibility & Wisdom	Earth

Kindergarten

Academic: Self

The academic theme for the kindergarten year is the self. The curriculum begins with the self and the world around the child, addressing the question: Who am I? It explores the most immediate world around the child. The theme is based on a child's growing awareness that the outer environment provides an integrating context for describing who he or she is. The context grows from articulating "what I know through my senses" and "what I need from my family and friends" to "how I become an agent in the world." Through interactions with peers, adults, and the natural environment the child begins to learn how to make choices that promote harmony between the self and the human and natural environment.

Ethical: Joy and Respect

There is nothing more joyful than the eagerness of new life growing to its full potential Joy is the virtue innate to children, the gift they bring into the world which we must cultivate and honor. Together with joy, kindergarteners learn the importance of respect for themselves, for others, and for nature. Respect is the fertile ground in which harmony, a kind of oneness with all living things, can be established.

Environmental: Willow

The parallel environmental theme for the kindergarten year is "trees." The self is mirrored in nature by the image of the willow tree, a single entity beginning to grow and to take its place in the grove of trees of which it is a part. The sense of belonging to the natural environment comes from spending time in it, becoming familiar with its rhythms and cycles. Just as the child explores similarities and differences between the self and others, immersion in nature allows him or her to find unity between the self and the many species that inhabit the natural environment and in the process to rediscover the essential core that humans share with all living things. The tree becomes the nature counterpart to the self, and its grounding within the garden, its beauty, its generosity toward the other forms of life it sustains provide a model for the child's own growth and building of an identity harmonious with the human and natural environment. Just as the willow is nurtured by nature by virtue of existing in it and partaking of its gifts, the child learns to recognize how his or her essence depends on this communion with the natural environment and the love and care of its many gifts. Both tree and child find unity with nature and a home in the harmony of interdependence.

First Grade

Academic: Community

First graders are ready to explore in more detail what community means and how they fit into it. They see the community as an extension of family and recreate some of the services they observe in their community such as a post office or a museum for which they create exhibits, write brochures, offer tours, invite speakers, etc. Children in other grade levels can participate in such an enterprise as well.

Ethical: Patience and Wonder

Waiting for seeds to grow and wondering at the miracle of the new life seeds contain become a powerful experience for teaching children the virtues of patience and wonder.

Environmental: Seeds

Children work with a variety of seeds and different ways to propagate plants. They investigate where a variety of fruits and vegetables come from and choose what varieties they would like to grow for food consumption at the school. They learn how to create compost to fertilize their garden and how to use non-edible parts of plants to make dies, weave into baskets, and make toys and utensils.

Second Grade

Academic: Diversity

In second grade children expand their knowledge of differences between communities by exploring the interaction of early communities in the United States – the Native Americans and the colonists, specifically as they co-existed in nearby regions. On-site visits to reconstructions of both the Lenapis and the colonists help make concrete historical ways of life, and attendant crafts such as weaving, quilting, candle-making, and farming help the child to learn experientially.

Ethical: Gratitude and Generosity

The study of the interactions among groups who hold different world-views and goals teaches children the value of generosity and gratitude in human relations. By contrasting the first Thanksgiving experience with the various struggles and unsuccessful conflict resolutions Native Americans and Colonists engaged in during other encounters, children will begin to see the importance of cultivating these virtues.

Environmentall: Soil

Enlarging on the more positive interactions between Colonists and Native Americans, their sharing of the fruits of the land, and knowledge of how to grow native species, children explore concepts related to soil regarding agriculture, erosion, geology. They also study rocks, work with sand and clay and learn to make pots, learn about fossils, and explore the different substances that can be extracted from the earth such as metals and minerals. Growing a garden at The Willow School in the spring is a collective laboratory experience.

Third Grade

Academic: Belonging

The theme is based on the child's growing awareness of "place" -- the complexity of communities and systems of which he or she is a part, primarily as a resident of a local ecosystem and as a citizen of New Jersey. The focus is to help provide answers to the questions: What are our needs, and how do we organize ourselves to meet those needs? How do we identify and solve problems together? What is it to be a citizen and how does that relate to living in a bioverse?

Ethical: Stewardship and Loyalty

Stewardship of land and nation embodies the human responsibility to sustain and care for those orders and patterns of human and natural life that in turn nurture us. Loyalty balances the dimension of care-giving we find in stewardship with the devotion to institutions, systems, people, and ideals upon which we rely to replenish us.

Environmental: Home-Habitat

Children learn about the different habitats in New Jersey and focus especially on environmental studies of the Willow property. Students keep their own data, each on a small plot of land (e.g. a square meter) designated to be his or hers under perpetual stewardship for as long as the student is at Willow and continuing thereafter as land preserved under that child's name. Students also maintain data using a weather station, and they keep a log of varieties of growth in varying areas of the property such as types of trees, shrubs, and grasses, birds, animals and animal signs -- scat, bird upchucks, dens, nests, bark scratches.

Fourth Grade

Academic: Movement

Following the development of our country, children learn about the westward expansion. Why did this happen? How did Americans affect their environment, and the Native American's way of life? Would there have been alternatives? In the second semester of the year children learn about immigration. What groups of people come to this country, and in what ways was coming here voluntary or forced? What were their dreams and fears, their perspectives? How were they seen by those who already lived here? Students engage in a simulation about arriving on Ellis Island and take a field trip to Ellis Island.

Ethical: Hope and Courage

Drawing on the example of immigrants and pioneers, children learn about the importance of hope and courage in life.

Environmental: Wind

Air in movement is energy to be harnessed, the harbinger of change, a force that can be both destructive and beneficial. Children do experiments with air: learn that it rises as it heats up, that it can be used to propel objects, to power mills, etc. They investigate the role of winds in weather, the disastrous consequences of the clearing of the western lands that caused the dust storms, and begin to learn that human action can have an adverse impact on the environment that harms all life.

Fifth Grade

Academic: Solutions

Beginning in the fifth grade and ending in the eighth, children engage in the historical, chronological growth of civilization on a global basis. Building on the understanding of the interplay of environment and social organization and the creation of institutions as an answer to the exigencies of human interaction and activity, students begin the study of the rise and fall of ancient civilizations. Students study hydraulic civilizations -- Mesopotamia, Egypt, China, and India -- which rose by rivers as responses to the challenge of irrigating crops.

Ethical: Diligence and Perseverance

Human history and its parade of monumental efforts over thousands of years to harness the forces of nature, to create viable social organizations and institutions teach children the value of hard work and sticking with the hard wok until the goal is achieved.

Environmental: Water

Water is the unifying dimension of planetary life and is studied in that context. Biological make-up of living creatures, environmental reliance on water, geological history of water on earth, continental adaptations to water, creature adaptations to living in or with water including human inventions – these aspects of water become the foundation for scientific and historical study in the Upper School.

Sixth Grade

Academic: Conflict, Law, and Synthesis

Focusing on challenges created by migration and invasion, children study the rise of Ancient Greece as a response to the Persian invasion, and of Rome. This study also provides case studies for the inquiry into the following questions: How do we solve conflicts? How do human responses to challenges change the human and natural environment? What happens when people fail to adapt to new challenges in their transformed environment? Are militaristic responses to challenges effective ways to handle problems? What happens to a society when it ceases to come up with creative solutions to fundamental problems within itself and instead tries to hold on to its previous achievements through force and violence? What causes civilizations to rise and fall?

Ethical: Honesty and Justice

As children examine Roman Law and the need for impartial justice in solving conflicts, they will learn the importance of cultivating the virtues of honesty and justice.

Environmental: Fire

Connections with the many discoveries of natural laws by the Greeks, especially in physics, are explored. In addition children study earthquakes and volcanoes as examples of massive natural forces and their consequences. Children consider the destructive as well as constructive aspects of fire, the devastation it can produce often due to our carelessness and its role as a catalyst for change as in chemical reactions.

Seventh Grade

Academic: Similarities and Differences

In the first semester children study China and how this civilization responding to barbarian invasions created a very different society from the western model. In what ways was (and is) the Chinese world view similar to and different from the West? In the second semester children study Medieval and Renaissance history and contrast world views between the two as well as West and East. The year finishes with a study of the clash between Mesoamerican and European civilizations.

Ethical: Compassion and Forgiveness

The study of the clash of different world views and religions leads children to focus on the need for compassion and forgiveness in solving conflicts.

Environmental: Weather

Instruments invented to predict and describe weather are studied in depth with The Willow School's weather station. A key dimension to the year when similarities and differences are the academic theme, students take careful data to compare and contrast weather conditions according to seasons here on the Willow property. Additionally, they also compare and contrast data from other places on earth, particularly in areas studied historically in the past two years, such as India, Iraq, China, Greece, and England. This latter collection of data is provided by a consortium of international schools, of which The Willow School is a part.

Eighth Grade

Academic: Patterns and Systems

The eighth Grade is the culmination of the Willow School experience, in preparation for a curriculum to be continued in high school and college. It is a grade to tie together all the programs that have transpired for nine years at Willow. It draws together both local and world views, the interdependence of all living things, the patterns and systems that we live by and how they relate to an ethical commitment. Community activism on a local basis ties together with service as a world citizen, resulting in both an extended local community service project and also participation in global awareness such as joining in a Model U.N. with other schools.

Ethical: Responsibility and Wisdom

Responsibility, an attribute that is a prime focus in all the years, is the key virtue that ties in all the curriculum. The theme returns to the original query asked in Kindergarten: Who am I, and who are we? It is more complex, however, and adds the queries, Where am I? Where am I going? To whom do I belong? How do I affect the world, and how does it affect me?

Environmental: Earth

As a unifying theme for ecological studies over nine years, students focus on how patterns and systems have designed the earth we live on over the eons it has existed, and how humans have worked with (and against) those patterns and systems over history. The earth is placed into the context of the solar system and a universe of space/time mathematical patterns, illustrating how humans in their imagination as well as physical prowess have left earth to explore outer space.

LANGUAGE ARTS

The language arts program at The Willow School forms the heart of the school's academic program. At The Willow School, students are taught to listen thoughtfully, to speak eloquently, to read fluently, and to write clearly and compellingly. Within a balanced literacy program, strong foundations of phonemic principles are established in conjunction with rich literature.

The process of learning to read begins when children discover that print carries meaning and continues as children develop into fluent readers who comprehend and analyze the material they read. As part of a sequential, multi-sensory approach to language learning, the well-structured phonics program provides a solid foundation for young readers. Students learn to use this knowledge along with other reading strategies, such as making inferences, forming predictions, and detecting patterns, as they encounter books which will challenge and delight them.

Stories are also read to students, both in the classroom and as part of the Morning Gathering. Hearing stories read aloud improves listening and comprehension skills, builds vocabulary, and in the early grades exposes children to literature beyond their reading ability. This is an opportunity for teachers to help students develop strong comprehension and analytic skills as well as an understanding of the story elements.

Writing is an integral part of the school day, as children record their thoughts, predictions, descriptions, and observations in all of the subject areas. Students write creatively and have opportunities to choose their own topics so that they have a vested interest in their writing. They focus on the substance of their story, poem, or play, as well as the style. Teachers encourage students to work with increasing independence as they are challenged and their abilities are stretched.

Grammar is of critical importance in the language arts program. Children need to be taught the structure of language, as this forms the foundation upon which all subsequent learning is built. The study of Latin helps students understand the English language, and it helps them become more precise in their use of language. Studying Latin also develops an attention to detail and logical thinking.

At the Willow School each child has the opportunity to find his or her voice through music, drama, debate, and classroom discussion. Young children imitate all that they see around them. As they grow older they attempt to emulate the adults in their world whom they admire. The teachers and administrators at The Willow School model eloquent language and provide examples of worthy imitation for their students.

Kindergarten

In kindergarten children discover that the world of print is not the exclusive domain of adults. By being surrounded with print and good literature, by playing with words, enjoying rhymes and poetry, acting out stories, and playing phonemic awareness games, children learn that the world of language and print belongs to them. In kindergarten children become familiar with the alphabet and the sounds that each letter represents; they learn to segment words into syllables and phonemes, blend sounds into words, recognize common words by sight, and decode words because they are motivated to become independent readers. However, children learn from the beginning that the purpose of reading is not to decode words but to understand meaning. They discuss books and how they connect with personal experiences, how a story is developed, and how the author goes about communicating feelings and ideas. Through author studies, children become attuned to the style of different authors: they compare the illustrations an author frequently uses with those used in other books, the themes the author explores, the characters he or she creates.

In writing, they learn the formation of letters, common spelling patterns and grammatical conventions such as capitalization, punctuation, and the structure of sentences because writing is perceived as a fun and rewarding activity. Already in kindergarten children learn to see themselves as authors. At first they dictate stories based on the pictures they draw. They keep a journal in which they draw and write daily, and they "publish" books, which become part of the classroom library, or are shared with parents and friends. They take turns at the "author's chair" to read what they write and receive feedback from their classmates who learn to offer constructive suggestions and encouragement by praising some aspect of their peers' work. In kindergarten children read and write books, poems and journal entries relating to the self, family and immediate community of which they are a part.

First Grade

In first grade, students continue to gain phonemic awareness by isolating consonant and vowel sounds, segmenting words into phonemes, and decoding words. Basal readers such as the Houghton Mifflin Reading Program support phonological analysis and controlled vocabulary. Students also begin to use reading strategies that incorporate graphophonic, semantic, and syntactic cueing systems to decode text. They learn to read and understand simple written instructions and gain skills in comprehension through discussing how, why, and what-if questions in fiction and non-fiction. In the classroom Book Center, Language Arts Center, and Computer Center, and in the Library students are stimulated with a variety of reading activities that are teacher- or student-led.

Students utilize the D'Nealian program in learning handwriting and produce a variety of writing including poetry, journal entries, plays, brief stories, and descriptions. Spelling, grammar and editing are emphasized as students learn to correct their own writing. Students learn capitalization, punctuation, and

simple parts of speech such as nouns, verbs, and adjectives. Dictionary skills and online research skills are taught as well. Students are encouraged to read a variety of different genres including poetry (haiku, acrostic, and cinquain), fiction, fables, myths, legends, and folktales.

Second Grade

Second grade students learn to decode multi-syllable words by using knowledge of letter-sound patterns, comparing the sounds that make up words, and segmenting and blending a variety of sounds in words. Reading comprehension is emphasized as students are asked to recall incidents, characters, facts and details of stories as well as discuss similarities and differences between stories. Conventional structures of writing are taught, as students begin to organize their work into paragraphs and write stories with beginnings, middles and ends. Editing, revision, and clarification are stressed throughout the writing process in addition to spelling, mechanics, and presentation of final drafts. Grammar includes identifying subject and predicate, changing regular verbs from simple to past tense, forming plural words, recognizing common abbreviations, and understanding synonyms and antonyms.

Through discussions and brainstorming children begin to prepare interview questions before they go on field trips. They can write thank you notes, journal entries describing what they have learned during interviews, write letters to each other, and brochures with information about their exhibits in a museum. Poetry, non-fiction, and fiction books will be part of the weekly selection of books children will read. Historical fiction and non-fiction are introduced, as there are many wonderful books written in this genre for young children.

Third Grade

Children read a selection of works written by or about writers and thinkers who were born or lived in New Jersey. In third grade, students begin to learn how to do research in the library or on the computer; how to organize information and write short reports and summaries; and take notes. They begin to deliver short oral presentations and build skills of public speaking. Their study of suffixes and prefixes integrates their investigation of how other cultures and languages (especially Latin) influence the growth of the English language.

The students build vocabulary and spelling skills through reading. They discuss main ideas, themes, motives, and conflicts within and across pieces of literature. Basic knowledge of how to use tables of contents and indices to locate information is applied, as students learn how to research and gather information on different topics or themes and then organize thoughts into short reports or presentations. They learn prefixes and suffixes and how they affect word meaning as well as correct usage of homophones such as *their, there and they're*.

Children write poetry, autobiographies, and fictional diaries integrating what they learn in the other disciplines. They make quilts and relate patterning of quilts to grammatical structures and story-telling, and they write fictional diary pages about their hopes and tribulations as immigrants or pioneers. These and other craft items together with black and white photographs of family members of past generations are displayed as a special exhibit in the school museum. Children begin correspondence with a pen pal in different areas of the United States.

Fourth Grade

The fourth grade students independently read and comprehend longer works of both fiction and nonfiction, especially autobiographies and diaries. Among other authors, children read some of Laura Ingalls Wilder's books. Students read poetry related to the theme of movement in the many senses of the word, and reflective of different types of natural environment: desert, mountains, forests, etc. In their

discussion of books, they learn and use literary terms such as novel, theme, plot, setting, tone, and mood. In writing and research, the children produce a variety of types of writing (stories, reports, poems, letters) with a coherent structure or story line. They continue to learn how to gather information from different sources (Internet, encyclopedia, magazines, interviews) and on the basis of their research write reports with attention to understanding purpose and audience, defining and following a main idea, instruction and conclusion, and basic documentation. Structurally, they organize materials in paragraphs with topic sentences, use examples and details, and indent each paragraph. They begin to publish a Lower School newspaper of local news to which the entire school contributes articles containing reports of field trips, connections between what they are learning with national news, a science section with interesting articles about their ecological investigations, a book review section, highlights of school museum exhibits, etc.

In grammar and usage, the fourth grade student can identify subject and predicate and make them agree, distinguish complete sentences from fragments, and correct run-on sentences. The student knows the four basic sentences with appropriate end marks, know the parts pf speech (reinforced with the similar instruction in French), and knows and uses all basic punctuation.

Fifth Grade

For literature, children read myths and reconstructed stories of the ancients (e.g. *The Bull from the Sea, The Trojan Horse, David and Goliath)*. They use these literary pieces to write their own original pieces based on research of ancient civilizations, with their own illustrations. Part of their writing is to be aware of and use literary devices: conversations (with appropriate punctuation marks), mood, character development, conflict, climax, etc. Other literary terms are understood and used such as imagery, metaphor, symbol, and personification. These stories will be made into books for the library.

The curriculum also emphasizes essay writing and public speaking, with attention to genre (description, exposition, opinion, comparison and contrast). Examples of effective speeches which have become famous are studied. Writing and public speaking will be incorporated into social studies and science studies. In grammar, more advanced terms and punctuation are mastered, such as restricted and unrestricted appositives and underlining. This is also the year that students begin to understand the structure of grammar by diagramming sentences.

Finally, attention is given to the use of resources and the ethics of attributing sources of information for all written work, including homework. Standard bibliographical entries are part of the course work.

Sixth Grade

The sixth grade curriculum focuses on improving students' ability to communicate orally and in writing. It exposes them to challenging literature and fosters better understanding and communication skills. Our grammatical study focuses on sentence construction. After a careful examination of its parts, purposes, and functions, students begin to expend their ideas to form compound and complex sentences. Formal study of parts of speech continues to aid in their ability to write in clear, meaningful sentences. Writing begins to emphasize the prewriting, drafting, and revision process in connection with the structure and development of the paragraph. One formal writing is given every seven to ten days. Regular entries in reader-response journals also complement the writing program.

Children read primary sources such as excerpts of Thucydides' account of the Peloponnesian War, Cicero's speeches, Pericles' Funeral Oration on the Ideals of Athens, excerpts from Plato's dialogues, Greek plays and myths. They also read a variety of modern plays and compare them to Greek models. Finally they write and produce a play for performance in school. Children make field trips to the theater both to see a play and to investigate what happens backstage. In addition to in-class reading, students must meet a monthly independent reading requirement, an assignment that continues through eighth grade. The focus of this assignment is on classical literary pieces, all of which are in our library, for example: *Alice's Adventures in Wonderland, Anne of Green Gables, Black Beauty, Black Boy, The*

Descent of Man, Diary of Anne Frank, Dragon Masters, East of Eden, The Hobbit, A Journey to the Center of the Earth, Little Women, The Mill on the Floss, The Red Pony, The Reivers, Robin Hood, The Secret Garden, Tales of Edgar Allan Poe, Silent Spring, Sounder, The Travels of Marco Polo, Two Years Before the Mast, Tom Sawyer, Up From Slavery, White Fang, The Yearling.

Seventh Grade

Children continue to build on what was established in sixth grade. Writing assignments include narratives, biographical sketches, myths, and a short research paper. Classes emphasize discussion and the study of basic components of short stories and novels. Students are encouraged to read actively, to form their own opinions about what they read, and to articulate their views in discussions and writing assignments. Children read *Beowulf*, one of Shakespeare's plays, *Chanson de Roland* and other important works of literature of the Middle Ages and the Renaissance. They stage a Shakespearean play.

In writing, the paragraph is focused on as the main mode of expression. Student writings also include short stories, character sketches, descriptive, persuasive, expository, and narrative paragraphs and poems. Newspaper writing will be complemented by the writing of an ancient newspaper, *The Greek and Roman News,* in which children describe important news, write advertisements of important innovations of the time, and write editorials highlighting the importance of the events chosen for the newspaper articles. Grammar is studies primarily in conjunction with writing assignments. Students also keep a reader response journal, frequently writing both at home and in class.

Eighth Grade

This course explores a broad range of voices in American and global literature and urges students to develop their own voices through the writing process. A close reading of different genres presents a tapestry of the common voice of humankind through different cultural eyes. Children create plays, write essays, poetry, speeches about problems they want to solve in our country or world or about their hopes and wishes for the future. These are collected and published as a graduation magazine.

The eighth grade English course is taught in tandem with social studies. In both courses students are expected to have fulfilled the following in preparation for their high-school years: a) embrace and value literature with active, open and analytical minds by reading works of different styles, themes, and structure; b) become more sensitive to the world and personal issues through reading and writing; c) understand vocabulary in ways which will strengthen their grammar, usage, and spelling; d) speak and write in interesting and thoughtful ways with a well-rounded and conclusive form; e) respect the ideas of their peers and take pride in their own ideas; f) explore in depth issues of ethics and character development.

LIBRARY RESOURCES

The use of a library at The Willow School for study, enjoyment of reading, and research is intertwined by three different resources: the classroom library, the all-school library, and the learning center. It is important to remember that "technology" is not just computers and audio-visual equipment. Print technology has been in use for centuries, and a book is just as related to a technological device to access the voice of an author as a website or the Discovery channel. Hence, the classroom library is key in allowing children to read books for pleasure in the reading nook, either to themselves or having a teacher read to them, and the classroom computers are important for the child to write a paper or access research. The school library is visited as a group once as week for more formal instruction on how to resource and use different kinds of books for pleasure and information, but it is also there for individual use related to research, literature, and specialty information such as art and nature books.

Kindergarten-Fifth Grade

Library skills are directly related to learning to find books in a library either for reading pleasure or for information related to classroom projects. Accessing information by computer through CDs begins in the second grade, and websites in the third grade. Part of library studies also includes the practice of caring for books, being responsible for books to be taken from the library and returned, and practice in returning books to their proper places in the homeroom and school libraries. Group reading in the library by an instructor, a teacher, or a visiting author reinforces the concept that the library is a living receptacle as well as an instructional resource for literature, news and commentary, visual and auditory stimulus, and enlightenment.

Sixth-Eighth Grade

Reading for pleasure continues to exist, with books of classical and contemporary interest available for independent reading required in the Upper School program. Further, information is acquired through the use of computers either in the homeroom, resource room (where computer technology is taught), or the library. A librarian works closely with subject-matter teachers to find and display resources helpful to both the teachers and students related to units being studied. The school will be part of a consortium of public and private libraries and resource centers to allow the quick distribution of books, tapes, and CD-ROMS, and through Internet to allow access to information recorded in various libraries such as at Rutgers and University of Vermont.

MATHEMATICS

Mathematics begins with the understanding of language. Mathematical vocabulary, number sense, order, operations, logical thinking, and problem solving are rooted in the child's developing ability to internalize and express cognitive relationships with words. The growth of mathematical thinking in the child, from rote counting to the manipulations of symbolic algebra and the use of deductive reasoning, parallels his or her linguistic development from imitation and naming to the interpretation of literature and clear exposition in writing.

The mathematics curriculum integrates the child's natural sense of order, pattern, and number with the manifestation of these concepts in the physical world. Research shows that children are naturally drawn to mathematical explorations, and they are born with a natural aptitude and interest in exploring spatial relationships, balance, volume, counting, and creating patterns through playing with blocks, filling containers with water and sand, working with puzzles, etc. At The Willow School we observe the child's natural process of exploration and let it guide us in scaffolding the next learning step. Children learn through concrete manipulation of materials designed to develop certain concepts. They are challenged to use what they know to come up with solutions to new problems that are meaningful to them. They are taught to explain their thinking with words and pictures and to arrive on their own to increasingly more symbolic representations. They are encouraged to discuss different ways to solve problems and to see errors as great opportunities to clarify thinking and deepen understanding. Their experiences in geometry are used to develop number operation concepts; their work with patterns lays the foundation for later algebraic understanding. Every topic is connected to the other supporting the structure of mathematical thought that enables the child to invent an algorithm rather than to memorize one, and to solve an addition problem or later on a formula to calculate the density of solids.

Every child is a mathematician with innate analytical and intuitive abilities. The mathematics curriculum finds its basis in the exploration, recognition, demonstration and expression of ideas and relationships. The use of manipulatives in conjunction with guided discovery leads to clarification and understanding of concepts. A repertoire of problem-solving techniques grows out of students' increasing

ability to identify questions posed, develop and accurately employ effective strategies, and apply these strategies to future problems. Basic facts are committed to memory to serve as the mortar that binds together the increasingly complex mathematical structures students will encounter.

Willow School students become confident mathematicians through whole group and small group activities as well as individual work. They become proficient not only in arithmetic, but also in patterns, functions, geometry, measurement, probability, statistics, and logic. They finely tune the analytic skills needed for decision-making and data analysis. They learn to understand that different mathematical strands are related and recognize that mathematics is everywhere. This understanding is reflected in the curriculum as lessons are connected to real-world situations and integrated with other subject areas. Studies in music, art, nature, geography, and history all provide opportunities for children to explore and describe inherent mathematical traits and contributions. Children become mathematical communicators by contributing their ideas during class discussions and expressing their ideas through projects, journal writing, class discussions, drawings, symbols, charts and graphs.

Kindergarten

In kindergarten mathematics is played out as it is connected to the focus on the self. Students begin the year with measuring activities involving their bodies. They graph their height, find relationships between the measurements of different body parts, compare results, graph them, collect data about personal likes and dislikes and decide how it can be displayed as a graph, use their footprints to measure other objects including their tree and things they find in nature. They explore patterns with concrete materials and then discover the patterns they hear in bird songs, they count the letters of their names, and develop their number sense through estimating quantities before they count them. Grouping objects to facilitate counting as well as repeated experiences with grouping things in tens helps them build crucial understanding of our base-ten number system necessary for operations and all later work. Most of the mathematics curriculum is built on the use of movement and concrete manipulatives.

Children begin learning mathematics at the kindergarten level with basic number operations and relationships. They learn to count (by ones, twos, fives and tens), to compare (more than, less than, arrangement by height and weight) and to add and subtract with proper use of symbols. Units of money are identified, and basic units of measure are discussed: length, height, weight, time, area, capacity, and temperature. Children learn about patterns, shapes, similarities and differences. They learn the attributes of shapes and how to classify various shapes based on properties. They learn to detect and record patterns through such vehicles as graphing and Venn diagrams. The study of patterns is particularly important in the kindergarten, as it forms the basis for students to recognize, seek, and form patterns and connections in many and across many subject areas throughout their years at The Willow School. The Willow School curriculum recognizes that patterns form the basis of understanding not only our number system, but also of many higher-order thinking skills.

First Grade

At the first grade level, children learn to read and write numerals to 100 and to count forward and backward. Children learn odd and even numbers and fractions, along with adding and subtracting with two digit numbers, solving equations for a missing number, addition by mental math, and comparing of numbers. They are also introduced to place value. Children expand on their understanding of amounts and measurement by learning about length (centimeters and inches), degrees (Fahrenheit), area (square inches and square centimeters), and volume (cups, tablespoons, teaspoons and liters) and time. Children learn to count money and simulate buying and selling. They identify more shapes (such as sphere, cube and cone), draw congruent and symmetric shapes, and solve geometric problems. They study data analysis (including bar graphs and pictographs), estimation, and problem-solving strategies.

Second Grade

In second grade, children read and write numerals to 1,000 and read and write words for numbers to 100. They add to their knowledge of fractions and learn to use a number line. They add and subtract three-digit numbers, multiply one-digit numbers, and learn multiplication facts through fives. They begin to utilize calculators. Measurement study is continued in length, volume, area, perimeter, time, and temperature. Geometry continues with the use of tangrams, symmetry, reflections, congruence, and the concepts of vertical, horizontal, parallel and perpendicular. Problem-solving strategies encompass multi-step problems and equations. In virtually all of these learning experiences, children apply what they have learned to concrete manipulatives, including real-life situations in their classroom and in the natural world outside. This approach continues throughout the Lower School class instruction.

Third Grade

Third grade mathematics includes Roman numerals, negative numbers, identification of numerator and denominator, and writing of mixed numbers. Students learn to add and subtract fractions and four-digit numbers, add columns of numbers, multiply and divide whole numbers. They expand their understanding of the concepts of greater than, less than, and equal to. Measurement concepts include an expanded study of the metric system along with relationships between measurements: pound and gram, celsius and fahrenheit, inch, and centimeter. In geometry, students learn to identify simple polygons, line segments and angles. Problem-solving strategies include assessing the reasonableness of solutions and solving word problems with multiplication and division.

The study of fractions, multiplication, division, geometry, pattern, symmetry, and spatial problem solving is integrated into the thematic focus on movement and more specifically pioneers and immigration through a unit on quilts. The following is a description of this unit, to illustrate the care in which an integrated curriculum is used in the Lower School and to provide an example which is replicated in other grades.

The concepts children need to develop in order to understand multiplication are unitizing (thinking of objects in groups), understanding arrays (that an item can be part of a column and a row simultaneously), and properties (commutative, associative, and distributive). Through hands-on manipulation of geometric shapes, children learn these concepts and at the same time understand how the study of geometry, area measurement, and multiplication are connected. The multiplication table is then first constructed geometrically through an investigation of what types of arrays (1x24, 2x12, 3x8, 4x6) could be used to represent the number 24. Such investigation is conducted for every product in the times table, and the results ordered and displayed. In such a representation children actually understand the meaning of a "square number" because arrays for the numbers 4, 9, 16, 25, etc. have a square shape. This kind of deep understanding that the construction of concrete models afford are an essential part of every aspect of the mathematics program at The Willow School. Problem solving how many squares would be needed to make a quilt of X number of rows and columns would lead children to come up with their own algorithm for the area of a square. To discover the area of a triangle children would link their acquired understanding of area to their investigation of how many ways one can divide a paper square in half and coming up with two triangles as one solution.

Geometry activities with quilts allow students to develop spatial sense by describing, comparing, measuring, relating, and representing geometric shapes, investigating their properties, and visualizing their possible transformations as they are translated, rotated or reflected. The program assesses children's individual level of thinking and provides adequate scaffolding informed by what the research tells us about the cognitive development of children's understanding of geometric concepts which follows a specific path where steps cannot be skipped: from visual, to analytical, to informal deduction of properties and relationships between properties by the end of elementary school. By folding a square in many

different ways, playing with tangram pieces, creating and solving puzzles using geometric shapes, comparing polygons, creating tessellations, and solving specific problems, children develop a deep understanding of all these important concepts in an enjoyable way.

Children investigate fractions through folding quilt squares and discovering that two triangles or two rectangles can constitute half of a square and that halves do not necessarily have to look alike. They create designs with pattern blocks and are asked to figure out what fractional part of the design is blue, for example. By trying to figure out the area of a shape based on the area of a fractional part of its design, children connect fractions with geometry and the work with area they have done in multiplication. They expand their number sense by comparing fractions concretely. Finally they apply their understanding to problems of sharing which allow them to "invent" equal denominators (without being told to apply a formula or algorithm), equivalent fractions, doubling, and halving. Rather than teaching children to invert the terms of the divisor when dividing with fractions (a procedure that makes no sense whatsoever), children are challenged to explain why "dividing by _ is like multiplying by 2." If children are given small numbers to start with, concrete materials, time to discuss among themselves different ideas and solutions, and challenging but manageable problems, they grow in mathematical understanding, and confidence in their ability as problem solvers, rather than just in the list of skills they can perform by rote.

Fourth Grade

The fourth grade math program focuses on multiplication patterns using 0 through 9 as factors, and working with division concepts and facts, primarily with 1-digit dividers. In conjunction with division and multiplications concepts, fractions and decimals are explored in a variety of applications such as measuring length, capacity, weight, time and temperature. As part of their data collection in science, children read and make graphs, build their number and time sense, and explore measurement and probability.

Along with math skills, children end their Lower School experience by focusing on problem-solving strategies. They organize information they collect, classify and sort members of a set by their attributes, and learn to assess the reasonableness of a solution as well as checking the accuracy of a solution. They learn to solve multi-step problems, reason by analogy and inference, and recognize and extend patterns. Additionally, more than in previous grades, they create and solve number sentences for addition, subtraction, multiplication, and division problems involving whole numbers, fractions, and decimals.

Fifth Grade

Conceptualizing math through the use of the English language comprises much of the fifth-grade course. The course is designed to be both interactive and reflective. Interactive aspects engage students in problem solving in pairs or in small groups. Students spend a great deal of time practicing different kinds of problem-solving; they are also taught the theories behind concepts and are expected to understand why certain processes work the way they do; reflective aspects of the course engage students in discussions, analysis of processes, and writing about mathematics. This learning strategy continues throughout the Upper School math curriculum.

Children continue to build on addition, subtraction, multiplication, and division skills with more complex word problems, using 2-digit multipliers and dividers, mastering place value, and using remainders. Children explore solids, triangles, quadrilaterals and other polygons, and they measure perimeters, area, and volume. Adding and subtracting decimals and fractions continue their growth in basic computation.

Sixth Grade

The priority of the sixth grade mathematics program is to ensure that the students have mastered the basic computational skills necessary to be prepared for the pre-algebra course that is taught in the seventh grade. The focus for the remainder of the year is on decimals, fractions, percents, geometry, pre-algebra, graphs and statistics, and integers. Throughout the year problem-solving strategies are consistently practiced and reviewed. Manipulative materials are an integral part of the program and are used to help all students as well as those who might be having trouble. The Math Olympiad program may be used to challenge students.

Seventh Grade

The chief thrust of the seventh grade program is to have students master all basic computational skills and to lead them into the direction of mathematical reasoning and processing. This is emphasized with real life problems and technology. The main topics of the course are operations and integers, rational numbers, decimals, basic number theory, statistics, and pre-algebra and algebra topics.

Eighth Grade

The concluding course in mathematics at The Willow School is an introduction to Algebra I and builds on the pre-algebra work begun in seventh grade. The topics include the study of the basic concepts of geometry, congruent triangles, ratio, and similarity; the year concludes with work in probability, statistics, and systems of linear equations.

PHYSICAL EDUCATION, OUTDOOR EDUCATION, AND ATHLETICS

Physical education and outdoor education are considered academic courses, for the child to investigate the self in relation to the physical environment. In physical education, **c**hildren gain much through physical activity: the importance of exercise to physical and mental health; sportsmanship and teamwork; ball and equipment handling; control; skills; rules; safety; healthy competition; and fun. In addition, a body of vocabulary and concepts related to anatomy, physical and mental health, personal safety, and wellness are introduced at varying stages of the physical education program. In outdoor education, children experience the natural environment in all seasons and in all weather conditions, with the exception of extreme high wind, low temperatures (below 15 degrees fahrenheit), or lightning storms. Activities include identification of trees, bushes, and flowers; identification of birds by feathers and songs; building structures in the forest, such as a rope suspension bridge or a shelter; orienteering; animal tracking by footprints or scat; doing historical studies of the land surrounding the school; studying plots of earth according to seasons; stream and pond studies.

Interscholastic sports and athletics do not occur until seventh grade and are part of the after-school programs. The program acts independently from the physical education and outdoor education programs. While physical and competitive skills may be practiced during the course-work, neither physical education nor outdoor education is used for formal practice time related to the sports offered after school.

Kindergarten-Fifth Grade

Physical education in the younger grades, emphasis is placed on small- and gross-motor coordination in non-competitive activities where each child, based on his or her developmental level, can feel accomplishment and pride. Activities as diverse as juggling, dancing to music, and tumbling are combined with attention to warming-up exercises and recreational activities such as hiking and building structures such as a lean-to or a tepee. Competitive games are not ignored. Children learn sport

activities and learn basic rules of games, including healthy sportsmanship. For example, soccer and baseball played with a beach-ball in the youngest grades lead to regular games of soccer and softball by the end of fourth grade. Games of dribbling a ball and shooting a ball toward another person or hoop lead to the game of basketball in the same way.

Children meet once a week for an extended period of time outdoors. Outdoor education focuses on hiking through the woods; identifying creatures by bark, leaves, scat, feathers, bones, calls and songs; closely observing the conditions on a plot of land chosen by each child; orienteering; gardening; and composting. Several activities coincide with other classroom curricula, for instance, pond and stream studies and archeological studies, and building constructions related to their studies, such as bridges, paths, and shelters.

Sixth-Eighth Grade

In the Upper School physical education program, students meet at the end of the day for physical education classes. Students are taught a variety of movement concepts, motor skills, athletic team skills, and strategies. Experiences are intended to enhance both cognitive and affective development. Activities include floor hockey, softball, soccer, field hockey, volleyball, dance and creative movement, yoga, physical fitness, track and field, lacrosse, new games, and basketball.

In the seventh and eighth grade, the intent is for each student (barring physical restrictions) to participate in some level of interscholastic competition or activity during the fall or spring seasons. In the fall, boys have a soccer team and girls have a field hockey team; in the spring, boys have lacrosse and girls have softball. The Ski Club, Running Club, Biking Club, and Hiking Club allow opportunities to join with others in non-competitive physical activities.

Outdoor education in the sixth through eighth grade is more connected to studies in other courses. Gardening is more formally introduced in terms of soil management, organic farming, and harvesting crops for food eaten at lunch. Explorations of "place" on site lead to care for the land related to natural building of soil depth, the planting and maintaining of trees and shrubs, mapping and longitudinal studies of all plant life on the premises; managing stream and pond health. More relationships with off-site environmental groups such as Upper Raritan Watershed Association are in place for field trips, studies, and community service. A relationship with University of Vermont Environment Studies students makes possible periodic visits from the university for instructional purposes in field, pond, and soil studies.

SCIENCE AND ENVIRONMENTAL STUDIES

The Willow School science and environment curriculum brings children together with the natural and physical world in a program of exploration and discovery. Throughout the curriculum, children are taught and encouraged to ask probing questions, to formulate and test hypotheses, to draw conclusions, and to verify the accuracy of their conclusions. They are taught to experiment, to record results, and to analyze results for both expected and unexpected findings. The science program is integrated with other subjects, allowing students to explore such concepts as the impact of science on cultures, religions, and civilizations, the connections between scientific thought and the arts, and the many uses of mathematics in the scientific world. They also learn to apply scientific methods to research and thought in other subject areas.

The study of science continuously builds in ever widening circles of depth and understanding, like ripples on a pond. Using this analogy, as they touch their fingers to the surface of the water, children in the kindergarten learn that plants grow from seeds with light, water, air and nutrition. As the ripples flow outward in later elementary years, children study the basic concepts of photosynthesis and learn how

plants make use of these ingredients. As the circles expand to the edges of our pond, in Upper School (grades 6-8) students expand on their knowledge of photosynthesis by studying cell structure and cell growth. These foundational elements in natural and physical sciences establish the background they need for an in-depth study of chemical and biological concepts in their high school years.

Through the study of the ecology and the balance of nature, woven together with elements of chemistry, biology and physics, students learn about many aspects of the natural world, including plants and animals, earth and space, land and water. Environmental studies are a vital part of the Willow School science program at all levels. The school's 34-acre site is integral to the curriculum, allowing for on-site studies of forests, wetlands, water quality and groundwater systems, seasonal changes, environmentally sensitive building design, renewable resources, sustainable growth, and regeneration.

A vital component of the environmental studies program at The Willow School is teaching children that human life is an integral part of the larger system of nature, not separate and distinct from it. The study of ecology provides a logical starting point for teaching children to recognize and gain an understanding of the vast network of connections that exists in our lives and through our actions. Our purpose, using environmental studies as a launching pad, is to educate children so that they come to have a strong sense of self-confidence and an understanding of their relationship with the world around them. We believe this can only happen in an environment which fosters a connection to place and in which children experience the joy and sense the wonder of the natural world. This education enables students at The Willow School to develop an ethical approach to all relationships, to realize their full potential, and to effect positive change.

Kindergarten

The study of science at The Willow School begins with plants and animals. Kindergarten children learn to grow plants from seeds, studying the sprouting and growing process along with the needs of plants for water, sunlight, air, and nutrients. They study the parts of a plant and its life cycle. Animals are studied relative to their structure, behavior and needs. Children are taught about caring for human and animal babies, and given a basic understanding of heredity. Various natural substances are investigated relative to their properties: size and color, shape, texture, and weight. Seasons and weather are studied throughout the year, and students begin to practice conservation in the classroom.

Children adopt a tree and observe its growth, its changes, its root systems, its branches, and the shelter they provide for animals. They keep a journal of their observations and graph the changes they see. They also compare their tree with the many species of trees they see around them, feel the different textures of bark, collect leaves and make rubbings of them, explore the properties of wood, learn about the rings inside the trunk of a tree, and learn how humans have used natural resources for their needs as well as the importance of recycling those resources. They also explore insects they find in nature, draw pictures of them, and observe changes they go through. In focusing on the self, kindergarteners explore the role of the senses as a means to get to know the world. They take blindfolded guided walks outside and experience the natural world through hearing, smell, and touch alone. They learn to recognize and describe various textures of natural objects, and to discriminate the scent of different plants. In winter they begin to grow plants from seeds and in spring they transplant them to the school garden. They learn what plants need to grow, and how their care affects a plant's ability to grow into maturity. Similarly they learn about their bodies and what nutrients their bodies need to grow in a healthy way.

First Grade

First grade science focuses on ecosystems, as children also branch out in the social studies to learn about other places and civilizations. Utilizing the school's 34-acre ecosystem, children expand their studies of plants and animals, looking at seeds and eggs as the beginnings of life cycles, as well as

predators and changing populations. Beginning at home and then expanding their studies to other parts of the world, children become familiar with the characteristics of forests, meadows, wetlands, deserts, oceans, and other ecosystems. A special unit on insects looks at structures and behaviors of insects, metamorphosis, diversity, and helpful versus harmful functions.

Second Grade

In the second grade, Willow School children learn more about matter and the earth. They study solids, liquids and gases, and how substances can change from one form to another. They study the earth's materials, including soils, rocks, and minerals, and the earth's forces such as volcanoes and geysers. Third grade students study simple machines relative to force and motion, levers, friction, wheels and axles, gears and pulleys, wedges, and inclined planes. They also study the properties of sound. They learn about how sound originates and how it is received by humans. They study sound travel, pitch and other properties. A unit on magnetism and electricity brings to life magnetic fields and poles, compasses, electric currents, earth's forces, and magnets in space. A science unit on measurement relates closely to the mathematical study of measurement, as students gain hands-on experience with many different methods of measuring.

With a focus on soil, the second-grade curriculum investigates the geological components of the earth and how soil is made, sustained, and used; and they use the school's garden as a lab to understand the soil's properties. Students also learn how soil – the bedrock of oceans as well as of land -- contains and sustains a variety of life systems that are mutually interdependent. Students learn the classification of animals relative to their functioning with the earth: cold-blooded and warm-blooded, vertebrates and invertebrates; and how their various structures have adapted to become fish, amphibians, reptiles, birds, and mammals. Of particular focus is the design of the human body, and within that study the ability to use sound to understand physical objects.

Another important unit of the second grade science program focuses on oceans, lakes and underwater life. Second graders study oceans and ocean currents, coastlines, and the effects of human forces on underwater life. In this unit students will develop a classroom aquarium with plants and animals that will allow for scientific observation and discovery. The study of underwater life will be highlighted by trips to the New York Aquarium and the New Jersey shore. .

Third Grade

The curriculum is designed around environmental studies of the Willow property: its ecosystems (including the school's), habitats, bions, seasonal changes, impact of weather. Children learn about the different habitats in New Jersey and focus especially on environmental studies of the Willow School property. Students will keep their own data, each on a small plot of land (e.g. a square meter) designated to be his or hers under perpetual stewardship for as long as the student is at Willow and continuing thereafter as land preserved under that child's name. Students also maintain data using a weather station, and keep a log of varieties of growth in varying areas of the property such as types of trees, shrubs, and grasses, birds, animals and animal signs (scat, bird upchucks, dens, nests, bark scratches). They compare their findings by traveling to other parts of the state (in conjunction with social studies visits) e.g. investigating microscopic animals in a sample of water from a stream here, the Delaware and Hudson Rivers, and a pond near where each child lives. The year will conclude by studying one of the willow trees on the property: its adaptability, degree of growth in one year, its root and leaf systems, its survival needs, its seasonal changes, its age and ring cycles, its use as a symbol of the school.

Fourth Grade

In addition to gardening, students learn about air in movement, wind, and how its power can be used to develop technologies. They connect their study of how the clearing of the land in the interior for farming created the great dust storms carried by the wind to the East Coast. They conduct several experiments involving heating air and seeing it rise, inflating balloons and attaching them to a straw threaded with a long, taut string and seeing it travel from one point of the string to the other when the air in the balloon is let out. Finally children use the school's weather station and create a weather station of their own, and they investigate what produces wind. Their findings are logged in their science journals. Field trips to science museums enhance the children's experience.

Air in movement is energy to be harnessed, the harbinger of change, a force that can be both destructive and beneficial. Children can do experiments with air: learn that it rises as it heats up, that it can be used to propel objects, to power mills, etc. They investigate the role of winds in weather, the disastrous consequences of the clearing of the western lands that caused the dust storms, and begin to learn that human action can have an adverse impact on the environment that harms all life.

Other units, which extend the notion of air as a solid that is held to earth by gravitational pull, are the exploration of space and gravity in the universe, particularly the solar system. A history of our knowledge of the solar system and the universe accompanies this exploration, including discoveries about the earth and its own rotations, and the origins of myths encompassing the stars and their constellations.

Fifth Grade

The study of water and its level of importance in the earth's ecosystem is the major focus of the fifth-grade course. Water related to geology (erosion, landscaping the environment), geography (water tables, water levels), technology and engineering (hydraulic systems, canals, floating devices including ships), habitats (marshlands, deserts, forests), biological systems(blood, birth), health (sanitation), chemistry (water in various chemical compounds), conservation (The Willow School's own systems) will be used also to integrate with studies in social studies and mathematics.

This is the year that begins formal laboratory experiments, both in the classroom and in the field and continues throughout the Upper School science experience. Field trips are taken to water-related places: water treatment plants, canals, and water conservation projects. The Willow School has a particularly close relationship with the Upper Raritan Watershed Association, which is a neighbor, and much of the research in the fifth grade will also be done at their facility.

Sixth Grade

The study of fire is the theme for the sixth grade science course, and connects with geology, physics, astronomy (including the Big Bang theory and the dispersion of stars and galaxies), heat (solar, nuclear, atmospheric), and ecology. Science connections with the many discoveries of the Greeks, especially physics, are explored. In addition children can study earthquakes and volcanoes as examples of massive natural forces and their consequences. Children will consider the destructive as well as constructive aspects of fire, the devastation it can produce often due to our carelessness and its role as a catalyst for change as in chemical reactions.

Frequent laboratory experiences emphasize skills of observation, organization, and recording as well as developing students' understanding of scientific ideas, methods, and safety procedures. Cooperative learning is emphasized as a means of encouraging students to learn from and teach each other. Class discussions and activities highlight the use of information as well as the mastering of a body of basic factual knowledge.

Seventh Grade

Weather is the focus of the seventh grade science curriculum and includes global climates, local weather, cloud formations and the circuitry of water, and habitats in various weather conditions. Instruments invented to predict or measure weather conditions are studied in depth through the school's weather station. Students compare weather data with other schools globally in a consortium of schools, including China, a country studies in depth in social studies. A study of oceans and ocean life connects with the age of discovery and navigation, particularly related to the use of wind for exploration by most peoples of the earth.

An invention fair is designed for seventh grade in which students present their own inventions to the school and parents to illustrate the ecology of harnessing power from weather, including tides, wind, water, sun, and underground thermal conditions (fire, earth, water)

Eighth Grade

The eighth grade science curriculum places emphasis on earth studies and biology: what "life" is and how it may have originated: evolution of plant and animals species and how they were affected by the evolution of the earth (climate, land masses, cataclysms), bacteria and viruses and how their behavior affects humans, plants and their behaviors, animals and their behaviors, and how the balance among all living things keeps them all co-dependent. Attention is spent also on how living things use inert things, and vice-versa. Special attention is given to the development of wings on fish, insects, rodents, and especially birds: how they developed, how they helped survival, how humans through inventions using physics reproduced them for our own use. Time is allotted to a comparison to other planets as systems (and what may or may not be available to make them biosystems), and how the physics of the solar system keep it a stable system though with inevitable changes. Comparison of our solar system and our galaxy is then used with other systems in the universe to illustrate the vast patterns of which we are a part, and our attempts to explore those patterns as part of the understanding of our origin and our destiny.

In preparation for leaving the Willow school, children study flight and build kites and airplanes. A study of astronomy concludes the year, with a visit to astronomy labs at Rutgers University and interviews with scientists.

SOCIAL STUDIES

History is at the heart of the Willow School's social studies curriculum. It is through the study of history that children grow to understand themselves, their communities, their country and the world. This understanding helps them to grasp and analyze current events and become enlightened world citizens. By becoming familiar with other cultures, students are able to appreciate the diverse peoples and places around the globe. The study of history also supplies children with a context within which they can better comprehend the developments that have occurred in the sciences and the arts. Geography is an important component of the social studies curriculum as well, so that children may gain a solid understanding of the world's physical, governmental, and cultural divisions, and learn how location and natural resources have affected history. Through the social studies curriculum, children will also be exposed to aspects of economics, archaeology, anthropology, and the role of religion in historical and cultural events.

Children love stories. They are intrigued by the unknown. Willow School students learn to see history as an adventure, as they learn about far away peoples and places through literature, art, music and dance. Mathematics and science are also incorporated into individual units. A comprehensive thematic approach makes history come alive.

Kindergarten

Willow School kindergarteners primarily explore the concepts of self particularly as the self lives in the context of family. In this way they discover much about themselves and the immediate world around them. They learn about the roles and responsibilities of different members of a family and begin to apply these roles to a larger community like a school, and the ways in which such units are cooperative and mutually supportive. They learn how rules are established and decisions are made when individuals live and work together, and the many benefits and services that a family and a community offer to their members. Each child begins to discover his or her own place and importance in and expanding his or her world view.

Children read a selection of picture books focusing on the idea that each child is unique, and they are encouraged to see that being different from others is an asset that adds richness to the social environment. They bring in pictures of themselves at various ages and discuss what they were like at those ages and then write autobiographies illustrated by those pictures. Their reading of books about relationships with family members leads to further exploration and writing about their own relationships with family members, what kinds of activities they enjoy doing together, how members of a family help and support each other, how household chores are distributed so that everyone may enjoy a neat and safe environment. Children are encouraged to bring their parents for a visit to the classroom and introduce them to their classmates. This is an opportunity for families to share with the children information about culture, occupation, or things they enjoy doing together. These experiences allow children to find out interesting similarities and differences between families and to prepare them for conducting and using interviews as a method for investigation of a topic. During Thanksgiving children observe how families across the United States share some of the same celebrations, and this is compared and contrasted with the diversity of customs in December celebrations. In January, while learning about Martin Luther King, children become aware that differences between people have sometimes caused conflict and how it is important to respect each other's differences and protect the rights of all despite these differences. Throughout the year children have opportunities to celebrate their growing abilities through events in which they share what they have learned with parents and friends.

.

First Grade

The first grade social studies program focuses on the community, building from the kindergarten program of the self and family. Children explore the various formal aspects of community such as economic organization, law and safety, social structures, division of labor, communication, health and physical maintenance, moral imperatives and beliefs that bind the community. Children build on their understanding of community by using their own class as its own replication of what a community means, and they build constructs of communities to see how one function in a community needs all the other functions of a community to make it work. In modeling a post-office, for instance, a child understands the need for architects and builders to make the post office; postal workers to operate the post office and to exchange money for services; currency to send mail; the artist to design stamps; the print shop to make the stamps and stationery; the carriers to deliver the mail; the makers of pencils and pens to write with. Students learn these intricacies by writing letters in proper form to each other, mailing them properly addressed and stamped, paying and collecting money for the service, and seeing that the letters are delivered in a timely way. Other simulations similar to the above of community interaction and visits to local community institutions complete the social studies program.

In a more formal way, community service begins in first grade and continues throughout the school grade-by-grade until the end of eighth grade. This is the year the students on a routine basis visit others outside of school to help them; in return, they see how they can be helped by others. For instance, an institutional relationship with a nearby retirement community allows students to develop ongoing relationships with others, with visits and social engagements occurring both ways.

Second Grade

By comparison and contrast, students study two different cultures that had similar motives and goals but different ways to accomplish them: the Leni Lenapis of the Delaware Valley and the European colonists who inhabited what was to become New Jersey. What were important concerns the Native Americans had? What challenges did they have to respond to? How successful were they? What was life like from their perspective? How did their life-style fit the climate and environment they lived in? How were tribes different from each other? What were the colonists' challenges? How did they see the Native Americans? Do people today also often fear what they do not know? Do they fear differences? What was the Native American concept of land ownership? What if colonists and Native Americans had reacted differently to each other? What other ways could they have solved particular problems? Several New Jersey on-site historical organizations offer workshops with hands-on activities about the Lenape and colonists. Children engage in a simulation where some students become Native Americans and some become colonists and set about solving problems dealing with the environment and social interactions that respect diversity and foster compromise, using William Penn's model of negotiation. This simulation involves creating colonial and Native American crafts (candle making, weaving, etc) and toys, building a canvas tepee, and collecting the materials they need for these activities from nature.

Community as it relates to nationhood is explored in the latter parts of the year, with a focus on historical figures in America who worked through conflicts and growth related to community, such as Lewis and Clark, Abraham Lincoln, Harriet Tubman, Mark Twain, Theodore Roosevelt, and Susan B. Anthony.

Children collect visual material such as black-and-white family photographs, make quilts (one of the few movable items pioneers and immigrants carried with them), and write fictional diary pages about their hopes and tribulations as immigrants or pioneers and create a display of these items for a special exhibit at the school museum to which parents and friends are invited.

Third Grade

New Jersey becomes the setting for the investigation of the American Revolution – its conflicts of governance and loyalty, commitment to patriotism and revolt, the creation of a new constitution both state and nation, the ideals set forth by founding fathers and mothers, the struggle to meet those ideals. New Jersey is seen for its participation in that struggle, and students investigate the definition of statehood, confederation with other states to create a larger nation, the relationship of governance structures vis-à-vis local and state. Students also explore what makes a community: why towns and cities grow where they grow (e.g. proximity to water, mountain gaps, or rich soil), what causes centers to change according to transportation inventions (e.g. canals, trains, cars, interstates, and computers), how communities relate to each other (e.g. N.Y. Giants stadium in New Jersey, Appalachian Trail, Newark Airport). Several field trips test these observations, including a walk on the Pennsylvania and New Jersey sides of the Delaware River along the canal towpaths, a visit to Trenton and the State Capitol, and Fort Lee. Children engage in a detailed research of the Willow property as a historical tale of the locale: who owned the house, what was the property used for (what the soil could sustain economically), where the roads were, who were the neighbors, etc. An on-site archeological dig – with "salted" artifacts actually found on the property -- is part of the investigation.

Fourth Grade

In fourth grade children expand their concept of community to include the whole country. Each student focuses on a geographical region of the US and studies its climate and topography and how physical geography influences social and economic organization creating regional cultures with different

values, needs and goals. Children consider that within America there are many cultures. Students begin correspondence with pen pals: students in Alaska, the West Coast, the Midwest, and the South can provide information about their education, hobbies, and activities and receive information from our students. This experience provides personal information about different regions and allows this investigation to become meaningful to students at a much more personal level. Each student then creates an oral presentation about his or her geographic region to the class.

Within the context of different communities in one country, children study the westward exploration and expansion of the early Americans as part of the theme of migration. Continuing this theme around the migration into this country, a field trip to Ellis Island provides the concrete experience for the introduction of a simulation in which students become the immigrants arriving in the US. Children also interview relatives and senior citizens in the community who have immigrated into the United States to ask about their experience.

Fifth Grade

Children begin a historical sequence that begins with the study of ancient history (10,000 BCE to 400 CE) and concludes in the eighth grade with the study of modern times (1850 to the present). Building on the understanding of the interplay of environment and social organization and the creation of institutions as an answer to the exigencies of human interaction and activity, students begin the study of the rise and fall of early civilizations. The story opens with the first organized cities at the beginning of "high" civilization in Mesopotamia and along the Indus River about 5,000 BCE and proceeds through the next millennium to the first preserved writings of the ancient Sumerians, which date back to about 4,000 BCE. Students progress in their historical studies through the Bronze Age, the pharaohs of Egypt, the Trojan War, the ancient Greeks and the rise of the Greek city-states, and the first Olympic games. The age of philosophers and religious leaders is studied, e.g. Moses, Buddha, Zoroaster, Manes, Socrates, Plato, Aristotle, Lao Tsze, K'ung Fu-tsze (Confucius), Jesus. The Roman Republic and Empire conclude the fifth grade study of history with the years 200 BCE to 400 CE as children study the times of Cicero, Virgil, the Caesars, and Constantine.

Early cities in Mesopotamia, Egypt, China, and India were hydraulic civilizations which rose as responses to the challenge of irrigating crops and finding useful transportation to import and export people and goods at a common center. The students compare these civilizations to our own. What geographical features caused the growth of civilizations, and are they the same as today's? How were these civilizations similar and different from each other? How do world-views and religious beliefs influence society? What challenges did past civilizations face, and are they similar to or different from what our society faces? How are we responding to them? Students brainstorm a list of challenges we face and research how our country has responded to them through its history. Those challenges can include environmental problems, the exploration of democratic rule, pan-national influences and conflicts, civil rights, economic inequality, health care issues, welfare, and education. Students pick a topic of study, research it and then offer a presentation to the class. Findings and a history of the way problems have been handled throughout our history are published in the school newspaper. The study of civilizations takes the format of simulations in which students create artifacts, clothing, dramatize myths, participate in ancient events, and produce events for the study to be shared with the rest of the school and parents.

Sixth Grade

In sixth grade, children study the European medieval period through the early Renaissance (400 AD to 1600 AD). They learn about the fall of the Roman Empire, Leif Ericsson's and Marco Polo's discoveries, the Dark Ages, and the High Middle Ages. In their study of the European Dark Ages they learn about serfdom, invasions, barbarism, and other great challenges of the time. Students parallel their studies of

Europe with the growth of Islam and its ascendant culture and power as it spread through Europe, Asia, and Africa. Through the study of the High Middle Ages, students learn of Chaucer and Dante, the Crusades, the beginnings of nationhood and representative governance, and the changing role of the church. They conclude with the many advances during the early part of the Renaissance by studying such individuals as Columbus, da Vinci, Copernicus, Michelangelo, Magellan, Shakespeare and Galileo.

Seventh Grade

In seventh grade, children study the late Renaissance to early modern times (1600 to 1850 CE). Their studies include European discovery and control of lands on a global basis, and research into such people and events as Galileo, Jamestown and the early American settlements, Russia under Peter the Great, the Enlightenment, the agricultural revolution, the French revolution, and the industrial revolution. They learn about Native American cultures, the struggle with Mexico for land and loyalty, and the California gold rush.

Students also study how, through colonialization, there was a growing awareness by the West of other cultures. In the final third of the year children study China and how this civilization responding to invasions created a very different society from the European model. In what ways was the Chinese world view different from the west? As an exploration which continues in the eighth grade, students begin to examine how different cultures, evolving in different parts of the earth, grew in different ways with very similar motives involving economics, protection, and expansion. In this final portion of the seventh grade, students may select topics such as Christianity and Islam, Europe and Meso-America, China and the United States, Greek/Hebrew influence on law, the growth of democracy through the Constitution. History simulations show children that many of the issues we struggle with today were present long ago in both western and eastern cultures.

Eighth Grade

The Willow School social studies program concludes with a study of American history from 1850 to current times, including issues relating to military conflicts from the War Between the States to the Vietnam War, the growth of civil rights, America's economic and political evolution, and its use of the Constitution as the basis for stability and growth. Children study how forces transpire to accumulate and to distribute power and wealth, and how mixtures of points of view and of spiritual and natural forces have been and can be used for the purposes of life, liberty, and the pursuit of happiness. American history, global in perspective, looks at recent migrations, times of enlightenment, moments of empire building, and contemporary attempts to balance power with stewardship and the sharing of resources. Also investigated is the United States' engagement both in law as derived from the Constitution (growth of voting rights, rights to ownership of land, land claims by Indian nations, etc.) and in more global efforts at world law (wildlife protection, pollution control, control of seas, Antarctica, and other planets, integrity of national boundaries, etc.). Students participate in a Mock Trial and a Model U.N. program and design proposals to their local government for new laws or law changes.

TECHNOLOGY

The Willow School seeks to instill in its students the ability to use computers and other technologies with confidence, the knowledge to use such technologies effectively, the wisdom to use them for productive purposes, and the understanding to assimilate future technologies into their lives as those technologies become available. Students learn computer technology through four perspectives: utilization of the computer as a teaching method; use of the Internet for purposes of research, communication, and sharing of knowledge; development of a working knowledge of basic tools of the computer (spreadsheet,

word processor, etc.); and development of an understanding of the present and potential future impacts of technology on society.

Technology at The Willow School is essentially transparent in the curriculum. That is, students learn to use computers and other forms of technology through their lessons in the various subject areas of the curriculum, rather than studying technology as a distinct subject area. This underscores the Willow School philosophy that computers have progressed in our society to an integrated status in our daily lives.

Kindergarten-Fourth Grade

Computer technology in the youngest grades is primarily used in work stations in the classroom, where students employ the computer as a tool to access programs and educational games related to their studies in language arts, math, social studies, and science. In this context, students learn the rudiments of the functions of computers: the use of icons, essential instructions, the use of the keyboard, etc. In third grade children receive, in a computer lab setting, instructions in keyboarding. They begin to use the computer for writing stories, reinforcing the understanding of math equations and geometrical forms, creating charts and diagrams for science and social studies. By fourth grade, students are using computers to access information for research related to their core studies.

Fifth-Eighth Grade

By the end of the fifth grade, Willow School students have established good keyboarding skills, a clear familiarity with the utilization of educational software, ability to use basic word processing software for writing reports and term papers, ability to use email communication appropriately and effectively, an understanding of the uses of the World Wide Web for research purposes, the ability to discriminate between valid and invalid information on the Web, and an understanding of the enormous impact that technologies have had, and will continue to have, on our society.

These skills are reinforced throughout the Upper School program, so that by eighth grade student papers are drafted, critiqued, revised, and completed on computer, with written dialogue between teacher and student accomplished on computer as well as in one-on-one conferences. Students who wish to write exams in class on computer may do so. Assignments can be accessed at home through the Internet. Research is routinely conducted via the library/learning center or in classrooms through websites connected to local libraries as well as other academic institutions and information sites normally associated with World Wide Web.

Careful instruction will continue to be part of the program related to appropriate kinds of information to be accessed on the Internet and the ethical application of communication by Internet. As with careful selection of books for the library, careful use of firewalls school-wide allows children to select appropriate information on the Internet.

VISUAL AND PERFORMING ARTS

The Willow School seeks to teach children to express themselves in the various languages and symbols of the arts. While one goal of the program is to teach children to produce fine works of art in a variety of media, there is much more to the art program at The Willow School. The school also teaches children to develop skills in looking and listening reflectively, understanding the processes of creating various forms of artistic expression, and appreciating the historical, philosophical, and cultural traditions of art.

The arts are an integral part of the curriculum, connecting in various ways with all of the other subjects. There are ties between music and mathematics, art and history, drawing and writing; and of

course art is inextricably intertwined with the appreciation of nature. At The Willow School students explore these relationships and come to have a greater appreciation for the beauty and mystery in the connectedness of all things.

In the visual arts, children explore many elements and principles of design such as line, shape, size, color, texture, form, patterns, space, color, balance, contrast, and harmony. They experiment in a variety of media, while learning the joys of self-expression, discovery and creation. A particularly exciting feature of Willow School art education is the Visiting Artists Program, wherein professional artists visit the school, teaching children a variety of techniques and applications while sometimes also sharing their work on campus.

The art curriculum involves the exploration of different art media and techniques. Activities are open ended in that no adult-specified product is intended. Art is completely embedded in the academic curriculum. Children enjoy the illustrations in a book they read and discuss them, trying to figure out what media and technique the illustrator used. They are then introduced to that technique: finger painting, collage, different kinds of printing techniques, watercolors, oil and chalk pastels, etc. They are also exposed to art prints by many artists and discover together how color communicates mood, how brush strokes can create certain feelings or illusions. They compare styles of portraiture or landscape painting, and build sensitivity to how the use of colors, composition, and brush strokes impacts the viewer. As they become familiar with many different techniques and media they make their own choices for illustrating the books they write or creating art-work for display.

Handcrafts are an important aspect of the earlier grades, and this program continues through all the grades. Folk-crafts of one kind of another follow the course of studies in the core curriculum: weaving, quilting, making decorations for celebrations, making cider, making musical instruments, crafting pottery, building structures from blocks to design houses or from wood and canvas to build tepees.

In music, children begin with simple elements of musical expression (beat, pitch, rhythm, harmony, and so on) and gradually expand their understanding to include musical notes and scales, orchestral instruments, and many different kinds of music. The beauty and joy of music is vital to The Willow School both in and out of the classroom and also forms an important element of the daily Morning Gathering. As children learn the fun of movement and dance in association with music, they are exploring dramatic expression. Artistic expression through the dramatic arts thus begins in kindergarten, gradually progressing to the more complex and sophisticated forms of drama at higher grades.

Kindergarten-Fifth Grade

In kindergarten the visual arts are combined in the core classroom with the curriculum, illustrating stories or words, combining pictures with words and paper to make books, practicing styles of painting of the masters, taking workshops with artists brought to the school, documenting creatures and objects from nature. The concepts of design, shade, and color are integrated with studying the art of great artists with creating art of their own.

Art begins formally as its own program in the first grade. The guiding principles in the younger grades are to experiment according to texture, color, shade, symmetry, balance, imaginative rendering, and careful observation. Children explore the possibilities of materials and media: cardboard, wood, natural and “found” items, water colors, oil paints, papier-mâché, clay, paper (hand-made), printmaking, bookbinding, ink, charcoal, and pastel. They draw with attention to detail in still lifes, landscapes, and portraiture. Some attention is spent seeing how other artists, past and present, have dealt with visual interpretations of the outer and inner world. The more technical aspects of art-work is introduced gradually through the younger grades: primary and blended colors, shading, highlighting, perspective.

The handcrafts curriculum is designed to integrate nature with the child's development of fine motor skills, his or her sensibility to the textures and colors of the natural environment, the harmony between human activity and the seasons, and to the ways humans can use natural resources thoughtfully and respectfully. Children learn to card wool, make yarn and do finger knitting. They learn to work with clay, to make dyes from plants, to create baskets, and to use natural objects in pleasing and creative ways. In the older grades woodworking and metalworking, using traditional tools, are introduced for making utilitarian objects that also induce their own set of esthetic principles.

The music program presents a varied repertoire of standard American songs and songs from other cultures that can be sung from memory, in addition to creating opportunities for solo and partner singing in class and before larger audiences. Children learn to sing in tune, blend vocal timbres, and with clear articulation and appropriate dynamics. They grow from their voices to the playing of other instruments, performing in rhythm with other instruments such as percussions and recorders. Their creativity is challenged by short vocal and instrumental answers in the "question and answer" or "call and response" style of improvisation, composing short melodies and singing or playing them, and learning terminology for dynamic levels. In music theory, students learn to maintain a steady beat y clapping or playing an instrument, read short phrases with pitches from "do" through "la," and begin identifying and using basic time signatures. Finally, children learn to identify both visually and aurally a variety of band and orchestral instruments, listen to a piece of music and map its patterns and events, and identify music from various cultures.

In theater, children will have each year the opportunity to present their musical and theatrical abilities in a play or a concert.

Sixth-Eighth Grade

The role of the visual arts is to foster individual and communal understanding of aesthetics and the creative process through practical experience. Students learn to find their own creative potential and the value of the visual arts in their lives. The arts are taught by units designed to emphasize specific art and design principles: drawing, painting, weaving and sewing, ceramics, mixed media, print and papermaking, pottery, sculpture, and architecture. Art appreciation is augmented by close study of classical artists' works and visits to The Metropolitan Museum of Art, The Frick, and other museums in the area. The eighth-grade course is more final-product oriented than in the younger grades that focus on the learning of technique and the use of a variety of media. As a result, exhibition of work is more emphasized, along with working closely with accomplished artists.

In music, the children become familiar with and are able to perform solo and in small groups a wide variety of musical styles -- classical, contemporary, and folk music of many cultures -- with clear articulation, appropriate dynamics, good breath control, expressiveness, and in two- to three-part harmony. Similarly, they learn to play on more advanced instruments (string, wind, brass, percussion) with more intricate rhythms and melodies with accompaniment. They are able to improvise musically as well as write and play or sing their own compositions and know terminology (allegro, largo, etc.). They are able to read, notate, and sight-sing musical notations and values learned in K-4, and identify and count rhythms of greater complexity (6/8, 3/8). They will also be able to identify musical forms such as theme and variations, rondo, and sonata, and be familiar with music, musicians, and composers from medieval times to the present

Performing arts are more emphasized in the older grades. A combined course with physical education provides a dance curriculum, which culminates in a performance for the school. Public speaking – reading to an audience one's own book or essay, making speeches for a candidate, presenting topics the class has worked on – become a more important experience. In theater, children present a play each year of classical or contemporary origin to an audience; the play itself may be offered in conjunction with the

Language Arts or Social Studies curriculum In addition, children have ample opportunity to choreograph a piece, create a video, produce a play or a skit that they have written themselves.

WORLD LANGUAGES

The study of world languages is vital to increasing communication among peoples and promoting cross-cultural understanding. Willow School children begin their study of a second language in the kindergarten, when they commence their study of French language and culture. In the fourth grade, students add the study of Spanish to their language program, and continue with the study of both French and Spanish through the fifth grade. Upon reaching the sixth grade, Willow School students have the opportunity to select either French or Spanish and continue with an intensified study of the language of their choice through the eighth grade.

French in the early grades is primarily conversational and involves an abundance of games, music, dance, and other activities. Students build vocabulary, sentence structure, and communication skills. They also begin to gain an understanding of the French culture and the cultures of other nations in which French is spoken. Students in grades kindergarten through three learn a variety of greetings and the words phrases, and questions of basic communication. They will learn to count in French as they are learning to count in English. They will learn the days of the week, the months, the seasons, phrases to de3scribe the weather, and they will learn to tell time. French words for colors and shapes will be learned, as well parts of the body, objects in the classroom and school, and many items at home from the kitchen to the clothes closet. Professions, places, sports, foods, and other common vocabulary words will be associated with frequently used verbs to form a strong foundation in the language. In the second and third grades, students begin to read and write in the French language.

The Upper School world language curriculum (grades 5-8) comprises three separate languages: French, Spanish, and Latin. In the fifth grade, a program combines both French, which the children have studied since kindergarten, and an introduction to Spanish. The study of French continues with a curriculum that combines the spoken language with a reading/translating program. Grammar is also formally studied as a reinforcement of English grammar. Spanish is introduced to show dimensions of parallel and similar grammar and comparative vocabulary. Simple phrases and sentences, used both in French and Spanish, help to build correlatives in both languages. In sixth grade, the student chooses whether to continue in the study of French or of Spanish for the remainder of the Upper School.

In seventh and eighth grades, students take a Latin course, primarily as an adjunct to the learning of English, French, and Spanish. Its purpose is three-fold: a) as a language base for the study of linguistic process and evolution which leads to Spanish, French, and Norman English; b) as a logic base that uses the structure of Latin as a way to analyze the structural logic in contemporary languages; and c) as a cultural base to illustrate through language study the history, mythology, art and architecture, and thought of Roman culture and how it continues to be at the center of much of Western culture today.

For the purposes of this portion of the curricular description, only the French program is outlined.

Kindergarten

The Kindergarten class is an introductory class that meets once a week during the course of the school year. The theme of the class is animals and insects. The program is designed to give students an exposure to French while making the language fun to learn. The goal is to promote rudimentary communicative skills by exploring simple sentence combinations through pictures. Basic grammar and vocabulary are

reinforced through a variety of games and activities. Students learn to identify the animals and insects and begin to be able describe them and their activities.

First Grade

The first grade program is a further introductory course that meets three times a week and which builds upon the Kindergarten program. It is designed to make French both fun and easy to learn. The goal is to promote communicative skills as well as introduce vocabulary by exploring sentence combinations through pictures. Pictures are used to introduce vocabulary, which enable students to visualize and create sentences. Grammar, as well as vocabulary, is reinforced through dialogues, a variety of games, activities and songs. This class focuses on everyday life objects, verbs, numbers, colors, animals, activities and places.

Students develop the following competencies in each module: a) the child understands various phrases aurally and/or written; b) the child is able to produce numerous phrases orally and/or written; c) the child shows his/her openness to learning another language and culture. Included in the vocabulary and speaking skills are the following: count to 50; use the days of the week, months, and year; describe the weather; respond to questions regarding animals, insects, colors, objects, clothing, people, and places; responds to greetings and leave-taking expressions; recite the alphabet. In grammar, students are able to conjugate in the present tense regular verbs and some irregular verbs, and can correctly use various prepositions in sentences.

Second Grade

The goal of the second grade program is to promote communicative skills enabling students to speak in complete sentences while fully understanding what they read and say. This class focuses on themes such as family, friends, food items, places, miscellaneous objects and day-to-day activities. Pictures allow students to explore sentence combinations and to visualize sentences. They are also used to demonstrate grammatical topics. Students participate in hands-on activities and games, which permit them to visualize and create coherent sentences while reinforcing grammar and vocabulary. The focus is on speaking and reading, but writing also comes into play as the students progress. With class work as well as homework, the students learn to construct longer sentences with ease.

Included in the vocabulary and speaking skills are the following: count to 100; perform basic introductions, role-play with dialogues on various themes. In reading and writing, students are able to do the following: read sentences, short paragraphs, and dialogues, describe pictures in writing. In grammar, students learn to express sentences in the affirmative and negative, understand interrogative sentences, and correctly use prepositions and conjunctions in sentences.

Third Grade

The Third grade program continues the program described in second grade. This program is designed to teach French as a second language specifically to young children. The emphasis is placed on oral communication; yet, students also learn to write in French via diverse writing activities. The program uses a progression of grammar and vocabulary, which allows students to build on previously learned acquisitions and to use this information in other contexts. Dialogues are at the heart of each unit. The dialogues permit students to make rapid progress in their oral communication, and it is around the dialogues that other activities come into play. Songs and games also enable students to revisit grammar concepts.

In vocabulary and speaking skills, students learn to the following: answer questions in complete sentences, describe the location of people and objects, describe the weather in complete sentences, and

describe how s/he feels physically. In reading and writing, the student can do the following: answer questions in written form, write short sentences. In grammar, the students can do the following: conjugate regular verbs in the 1st, 2nd, and 3rd person singular and use them in complete sentences; conjugate a specific list of irregular verbs in the same way as above; recognize and use masculine and feminine forms of nouns and adjectives.

Fourth Grade

The fourth grade French program is based on the continuation of the third-grade program, with increasing emphasis on written as well as spoken French. An ease of fluency using dialogues that are spontaneous rather than rehearsed is encouraged. Students continue to master vocabulary by describing in detail his/her day-to-day activities as well as activities of others using the verbs and content vocabulary. In grammar, students are able to do the following: correctly use pronouns in sentences; use interrogative sentences in a variety of ways; use the infinitive after a conjugated verb; use the sentence beginning with "Il y a . . . ".

Fifth Grade

The fifth grade French program is based on the textbook *Tandem*. *Tandem* consists of a student book and a student workbook. Emphasis is placed on oral communication and intonation, as the goal is not only to speak, but also to be understood. Consequently, *Tandem* is comprised of numerous listening activities. There are dialogues, stories, and vignettes based on the daily lives of people and above all, children and teens. Writing is not neglected. There are simple writing activities aimed at giving students confidence in this area. There are plentiful oral activities, which are used to teach and reinforce grammar. Finally, there is a cultural component taught by way of themes introduced throughout the textbook. Culture is reinforced at the end of each unit, via a French girl, Sidonie. Sidonie speaks about her daily life in France, which permits students to better understand French life.

Sixth-Eighth Grade

In French, students complete their coursework in preparation for either Level 2 or Level 3 French in high school. Students master the basics of French conversation for practiced and impromptu conversations in various situations in both one-on-one conversations and classroom conversations. In addition, they read simple French stories and poems and discuss them in class in French. As with previous grades, the course is divided into content/vocabulary, grammar, and culture. For content/vocabulary, students learn to speak in various situations using appropriate vocabulary and syntax: e.g. interrupting a conversation, leaving a restaurant, expressing regret, making hypotheses, asking about one's health, giving advice. In grammar, they review all the tenses learned, including the imperfect and subjunctive; and they will practice the use of gerunds and present participle, the plus-que-parfait tense, infinitives in the past tense, passive voice, past conditional tense, possessive pronouns, and placement of adjectives and adverbs. In the culture related to the language of French, students will study works from both France and countries where French is spoken. Students explore cultural similarities and differences where French or its dialect is spoken: Haiti, Quebec, interior Louisiana, Belgium, Martinique, Cote d'Ivoire, Algeria, Switzerland. Students will work from a textbook, workbook, videotapes, and audio interactive CDs on the computer.

CONCLUSION

Thus ends the Curriculum Summary for The Willow School, grades K-8. For details of scope and sequence for each subject in each grade, The Willow School has notebooks by grade and by subject which we are happy to share with you. Both the Curriculum Summary and the Scope and Sequence are reviewed, assessed, and if necessary changed on a yearly basis by the faculty.