

The Rudolf Steiner School

GUIDE TO THE CURRICULUM

Early Childhood through Eighth Grade
by Subject



It is the task of the teacher in the Waldorf School to know what may be appropriately imparted at any given age. The curriculum, in its distribution of subject matter, forms the basis of such knowledge. It lays down no laws, but expresses the needs of child nature (and human nature) ... at any given age.

-- W.J. Stein

WALDORF EARLY CHILDHOOD: NURSERY AND KINDERGARTEN

The Waldorf Early Childhood program provides a foundation that nurtures the body, mind, and soul of the growing child. Through creating a healthy multicultural program – based on imaginative play, artistic activity, simple crafts, language, verse, song, puppetry, fairy tales, and storytelling – the Early Childhood fosters the development of the whole child: physically, emotionally, intellectually, culturally, and spiritually.

The preschool, including the Kindergarten, is non-academic. At this age, a child's intellect and understanding of the world resides fully in his or her body, and it is through this physicality that the child apprehends the world. The child's energies are naturally taken up largely by physical growth. In the free play of creative fantasy, the small child transforms the content of his or her experiences into the substance of his or her own self. To divert a child's formative energies from this important work in the early years, in order to emphasize traditional intellectual understanding, is to take from developing children the endurance and strength they will need in adult life. Premature, abstract demands upon the intellect, sharp criticism, undue excitement -- for instance, from visual and electronic media -- and over stimulation of the senses combine to rob children of their native physical resources.

Given such a view, the teacher's task is to create a learning environment worthy of a small child's essential being – through the warmth, the clarity, the rhythm, and the harmony of the world inside the classroom. The preschool teachers strive to create a warm, protective environment, rhythmically repetitive and secure, in which a child can slowly make the transition from home to school. Here the teachers respond to the developing child in three important ways. First, they engage themselves in domestic, practical, and artistic activities that the children can readily imitate (for example, baking, painting, and handcrafts). Second, the teachers nurture the children's power of imagination by telling carefully selected multicultural stories; and third, they help the children to experience their lives more deeply by encouraging free play.

The day begins with a long period for free play. All toys are made of natural materials, with simple forms that stimulate the children's imaginations. Playtime is followed by circle time, consisting of verses, nursery rhymes, songs, and circle games. Then the children gather for a snack, after which they go to Central Park, where -- always under close watch -- they explore, dig, run, jump, and exercise their imaginations. When they return, the morning ends with a nature story or a folk or fairy tale. The week has its rhythms as well, and seasonal activities such as harvesting acorns and planting bulbs deepen the children's awareness of the natural world. Reverent celebration of festivals develops both a sense of greater community and a rich inner life of feeling.

These activities prepare and strengthen our students for their elementary school years. Songs and nursery rhymes cultivate intimacy with language and the world of words. Listening to stories, watching marionette shows, and participating in dramatic play strengthen the power of memory and imagination. Counting games and rhythmic activities build a solid foundation for arithmetic and number skills. Painting and crafts help the children develop small motor skills, coordination, and the ability to concentrate. Vigorous play develops their large motor skills.

In the natural, loving, and creative environment of the Early Childhood classroom, children are given both the freedom and security to prepare for the next phase of school life.

THE ELEMENTARY SCHOOL

The heart of the Waldorf philosophy is the belief that education is an artistic process. Whether the subject is arithmetic or history or physics, the presentation must live — it must speak to the child's experience. To educate the whole child, the heart and will must be engaged, as well as the mind.

Children move into the second phase of childhood at age six or seven. The intellect of the elementary school student is no longer restricted by the physically oriented learning mode of the very young. New energy is available and a vivid life of feelings and emotion emerges. The children can begin to grasp inner meanings and relationships, and are now ready to be guided by a teacher into formal learning. The arrival of new capacities is treated carefully, however. It is unreasonable, and may even be harmful, to expect performance or achievement that is not commensurate with a child's age. And while it is important to nurture the new intellectual abilities, we must continue to foster the imagination as the child moves through the elementary school. Therefore, all subjects — mathematics and social studies, language arts and science, music, and foreign languages — are taught imaginatively and artistically, in order to engage the children's feelings as well as their intellects.

The narrative content of the curriculum is intended to mirror the child's awakening consciousness. The children's need to find themselves in the stories -- of harmony broken and reestablished, of moral and idealistic struggle, of good versus evil, and of challenge to authority -- is addressed through the presentation of multicultural stories, biographies from around the world, and oral essays. In these years, the curriculum also emphasizes the thorough integration of all subjects rather than compartmentalized study.

In a Waldorf school, the arts are always an integral part of the curriculum. All students learn to paint and draw, and to work with clay, stone, and metal. They also learn to sing, play the recorder, read music, and to play an orchestral instrument. The practical arts, handcrafts and woodwork, which balance the students' academic and artistic work, are also requirements in a Waldorf school. Regular homework is not given until the third grade, reflecting our belief that young children should spend the afternoon playing and resting before eating dinner and going to bed for a good night's sleep, in order to be ready for the day ahead.

THE CLASS TEACHER

Children up to the age of puberty have a basic need for genuine authority, rooted in the child's love and respect for the teacher, and in the respect of the teacher for the child's inherent self. This need for authority leads to one of the most distinctive features of Waldorf education, the class teacher. The class teacher works with the same group of children for a number of years—potentially (but not always) from first through eighth grade. Each class is also taught by other

teachers who specialize in modern languages and the various arts. The class teacher closely follows each child's academic achievement and strives to help the students achieve their full potential. Through the years a special relationship grows between teacher and students. As the class teacher's knowledge of the children deepens, he or she is in an ideal position to contribute to the healthy intellectual, artistic, emotional, and social development of each child. In this time of rapid cultural and technological change, having a class teacher for a number of years brings the child security through the experience of being known and, thus, loved.

The class teacher also brings unity and continuity to the curriculum, unifying the various disciplines over the years. The teacher is able to select, emphasize, and draw upon those aspects of each subject that best address the needs and interests of the class. Through the challenge of teaching a new curriculum each year, the class teacher brings interest and enthusiasm to the work; and as students experience their teacher's ability to make the world of knowledge his or her own, they grow in confidence that they too can master the many subjects before them.

THE MAIN LESSON

Every day in the elementary school begins with the main lesson, an extended period lasting from ninety minutes to two hours. During this uninterrupted time, the class teacher presents the current academic subject. Each main lesson is planned to involve the thinking, feeling, and "doing" capacities of the students. The day begins with a greeting, recitation, music, and arithmetic concentration exercises, which carry the themes of the main lesson subject or season of the year. Students then review the previous day's lesson, after which the teacher introduces new content. In the lower grades, the main lesson might be an introduction to numbers or a study of fables. In the higher grades, it might be fractions, the Roman Empire, geography, or grammar. Students must be attentive and are asked to concentrate their energies during this time. There may also be physical activity, such as the acting out of a story, or walking and clapping rhythms, or sculpting with clay. Because of the length of the lesson itself, and the fact that the same subject is studied intensively for three to four weeks before a new subject is introduced, students are able to penetrate the subject with unusual depth. The main lesson provides an opportunity to work with academic material in a variety of ways and offers a balance to the fragmentation of our modern world.

THE MAIN LESSON BOOK

As they learn, students work on their main lesson books. These books, written and illustrated by the students, record the path of the student's experience with a particular subject. Each student thus creates his or her own textbook for every subject. As the students mature, their main lesson books become more and more individualized. The children are encouraged and expected to expend a good deal of time and effort to create these books. The care and devotion with which they work foster a feeling of responsibility and pride in their own achievements as well as a moral commitment to completing what they begin.

THE SCHOOL DAY

After main lesson and recess, lessons in foreign languages, music, eurythmy, arts, crafts, and physical education follow, each taught by a specialist. Beginning in the second grade, class teachers also return to the class in the late morning and afternoon for extra lessons, which are used for mathematics and language arts practice, or an artistic activity like form drawing or painting. Care is taken to ensure that the youngest elementary students have ample time throughout the day to rest and play. A quiet time is scheduled for the first grade every day. First and second graders have a double period of playtime in the park every afternoon, and the third grade has a daily afternoon play period. There is a conscious daily rhythm that alternates between seated classroom work and physically active participation in music, arts, crafts, and physical education. The greater activity of the afternoons balances the quiet focus of the morning and allows the children to leave school at the end of the day replenished and ready for the evening.

LANGUAGE ARTS

Having listened to their nursery and kindergarten teachers tell them stories from around the world and lead them in rhymes and verses, our students experience the richness of the English language long before they reach first grade. This experience fosters an appreciation for the beauty of speech and lays the groundwork for fertile imaginations and strong, varied vocabularies. In the elementary school, language skills are taught as an integral part of the work in all subjects, as well as in English classes and main lessons.

The *first grade* begins with a main lesson block in “form drawing,” during which the children experience straight and curved lines. They first walk the lines on the floor; later they draw straight and curved lines in various combinations on paper. Precision and clarity of line, essential to good writing skills, are emphasized. Form drawing helps develop eye-to-hand coordination, the sense of uprightness in space, right/left and up/down orientation, and the ability to mirror, all skills that are needed in reading.

After this introduction, the children learn the upper-case consonants in imagery from stories, through the progression from story to picture to letter. Then the vowels, both short and long, are introduced. Next, words and phrases are constructed as a class activity and written on the board by the teacher. Students copy these words into main lesson books. Thus, writing precedes reading, and the main lesson books that the children create become their first readers. Lower case letters are learned by year’s end. Through song, verse, speech exercises, games, and drills, phonics and a basic sight word vocabulary are learned. In addition, through the telling of fairy tales and the recitation of poetry, children are exposed to other cultures and skills in listening, re-telling, sequencing, and articulate speaking are practiced.

In the *second grade*, fables and legends from around the world serve as the backdrop for lessons in language arts. Typically, the students listen to a story. The next day, they are asked to recall it in order, in detail, and in their own words. Then, a summary is written on the board, and they copy it into their main lesson books, adding illustrations. Thus, the students refine their memorization skills and their ability to sequence events, as well as their reading skills and handwriting. Later in the year, the children begin to write their own compositions, which are

corrected and then neatly rewritten in main lesson books. The children also study word families and vowel teams, and learn to use context in order to read unfamiliar words. A large pool of sight words is developed throughout the year. Students attend library class twice a month, choosing a book to read during the following two weeks. They are strongly encouraged to read at home for at least ten minutes a day. The first grammar lessons are given in second grade, beginning with the introduction of nouns, verbs, and adjectives through playful games and activities. Every day, the class recites poetry, tongue twisters, and other speech exercises to encourage clear diction and enunciation. The class also performs a play, based on one of the stories they have heard.

In **third grade**, Old Testament stories and Native American tales form the basis of the language arts lessons. The children also study farming and housebuilding around the world, both of which are a rich source for compositions. In grammar lessons, the class looks at the parts of speech and is introduced to the four types of sentences. Students learn how to form and punctuate complete sentences, and they write compositions in class, usually based on main lesson topics. Time is spent on editing and perfecting compositions before they are copied into main lesson books. Spelling is a daily activity, with occasional spelling quizzes. The children are divided into small reading groups for in-class reading. Library class takes place weekly, and reading at home is expected. The children begin to learn cursive writing. Homework assignments are now given.

In **fourth grade**, grammar studies focus on tenses, syntax, and comparative adjectives. Accurate spelling is emphasized in writing assignments, and weekly spelling quizzes are given. The students also work in varied compositional styles, including journal entries, letters, and book reports. Main lesson books are created from stories that the class composes together and from independent writing, often based on the Norse myths that are the literature of the fourth-grade year. Handwriting, punctuation, and paragraphing are stressed, and the children learn to revise and edit their work. They also write their first research report on an animal chosen during the main lesson block in zoology. Local geography is another rich source of material about which to write.

Fifth-grade grammar studies become more analytical, as students begin to diagram sentences and to study active and passive voice. Composition skills and working from outlines are practiced, as is the appropriate use of direct and indirect quotations. Emphasis is placed upon the complete process of writing, editing, and rewriting, and students write expository essays as well as narratives and book reports. There are regular spelling and vocabulary quizzes. The myths, tales, literature, and contributions of various ancient cultures – India, Persia, Mesopotamia, Egypt, and Greece – offer an inspiring study for the fifth grade; the year ends with the history of Ancient Greece. In addition, the class teacher chooses several books as supplemental reading and gives the children daily reading assignments. given.

Sixth graders study Roman and medieval history, and the literary focus for the class includes books that deal with Roman history, as well as chivalric tales and medieval ballads. In main lessons, students write original narratives and expository compositions in history and world geography blocks, as well as document their observations of physics experiments in science blocks, requiring them to write clear, precise descriptions. Students are required to complete at least three book reports and should be able to discuss character, plot, and themes, while

developing summarizing skills. Beginning in sixth grade, a language arts teacher complements the ongoing work of the class teacher and focuses on grammar, spelling, vocabulary, and composition. Grammar includes the study of compound and complex sentences, as well as independent and subordinate clauses, a review of parts of speech and parts of the sentence, prepositional phrases, direct and indirect objects, and punctuation. Vocabulary and spelling practice focuses on prefixes, suffixes, and word roots.

In *seventh grade*, students are guided in their growing ability to read critically. They keep reading logs on books from an extensive outside reading list and write several book reports, in which emphasis is placed on plot summarization, character development, and theme analysis. The class also works on skills in note-taking, preparing outlines, and paraphrasing. The Renaissance is the major theme of seventh grade, and its literature is used as a model for creative writing. Short writing assignments for history and geography main lessons, or literature being read have particular goals for strengthening the mechanics of writing -- development of varied and complex sentence structure, organization and development of paragraphs, transitions, and sequencing. Writing for science main lessons emphasizes precision and clarity of expression. The class also works with the theme of “wish, wonder, and surprise,” expanding their ability to write creatively out of a mood or mode and in doing that to shape the English language accordingly. Students also write ballads and other poems, thus beginning an exploration of meter and rhyme schemes. Library research skills are introduced at this time, and children write longer research papers. Vocabulary and spelling quizzes are given, and students work with *Warriner’s English Grammar* and *Composition* as well as vocabulary builders such as *Wordly Wise*.

In *eighth grade*, folk tales and poetry from various cultures, which sometimes were read in the early grades, are now studied from a new perspective. In addition, students read Shakespeare and epic poetry. They select independent reading, keep reading logs, and write several book reports. Discussion, writing assignments, and quizzes address the student’s ability to recall textual detail, hypothesize about the text, and analyze theme, character, and literary style. Making an outline, note-taking, writing a research paper (citing of sources and making a bibliography), paraphrasing, summarizing, reading and writing essays, and newspaper and business writing are all addressed. Grammar studies are supplemented with exercises from workbooks, and vocabulary is developed through literature as well as through workbook assignments. The teacher guides students through the history of the English language. Creative writing encourages students to work descriptively with mood, style, and literary forms.

MATHEMATICS

Mathematics is explicitly taught each day in the morning warm-up activities, in main lesson blocks throughout the grades and, after first grade, in two or three additional periods each week. Mathematics also happens throughout each child’s day as he or she reflects a cross-stitch pattern in handwork or takes up a rhythmical clapping exercise in eurhythm. Beginning with sixth grade, a mathematics teacher also works with the class to complement the work of the class teacher. In the early grades, teaching is enhanced by games, songs, and imaginative pictures that engage the enthusiasm of play in the task of learning. In all grades the teachers choose topics rich in

mathematical content that can be approached at a wide variety of skill levels. Thus, more difficult problems are always available for students who are ready to take up an extra challenge. In the *first grade*, arithmetic is taught through movement -- walking and stamping, clapping, throwing a beanbag -- and through lively oral games. First graders are introduced to Roman and Arabic numerals and learn to count by ones, twos, threes, fours, fives, and tens. Through imaginative stories, the four operations (addition, subtraction, multiplication, and division) are practiced. Students also learn to solve simple number problems, often using manipulatives.

Physical movement is still an important part of arithmetic lessons in *second grade*. Place value is introduced, and the students continue to solve problems with the four operations, eventually working with larger numbers. Multiplication tables through 12 x 12 are practiced through clapping and beanbag activities. Students are encouraged to find patterns within the tables, and magic squares are introduced. Mental arithmetic develops the children's concentration and flexibility in thinking with numbers as they concurrently learn to read and write the language of mathematics in their practice and main lesson books.

Third graders are introduced to long division and double-digit multiplication, as well as longer word problems. A focus on measurement --with lessons on linear measurement, liquid and dry volume, time, and temperature -- emphasizes the practical application of math. Students continue to practice their multiplication tables with the goal of knowing them by heart. More complex mental math games are played in class. A few problems for homework, given on a regular basis, help to strengthen the students' math skills.

A whole new realm of numbers is introduced in *fourth grade* -- those from zero to one. Students learn to manipulate common fractions and mixed numbers in the four basic operations, and are introduced to the concept of less than and greater than. Estimation and methods for checking answers are taught. Mental arithmetic now involves multiple steps.

The *fifth-grade* year continues with increasingly complex work in the four operations, place value, measurement, rounding, fractions, and word problems. Decimals are introduced and are soon incorporated into all aspects of the arithmetic work. There is an emphasis on order of operations, mental arithmetic, factoring, and multiple-step word problems. Area and perimeter are introduced in a block of freehand geometry, which previews the work done in sixth grade with compass and straightedge. The vocabulary of mathematics gains importance (prime number, factor, multiple, etc.) and regular homework assignments allow for essential practice.

Beginning in *sixth grade*, a math teacher complements the ongoing work of the class teacher. The world of rational numbers is completed by the inclusion of the signed numbers, and students are now prepared to solve simple equations and to evaluate formulae of all kinds. The class learns the fundamentals of economics, including both the broad ideas of barter and currency, and the practical calculations of taxes, simple interest, discounts, and other percentages. The graphical presentation and interpretation of numerical data is considered.

Geometry is formalized in sixth grade as students move from the careful freehand work of the early grades into precise geometric constructions. Students learn the correct use of the compass, straightedge, and protractor as they bisect angles and lines, construct parallel and perpendicular

lines, and divide the circle. Polygons, stars, and spirals are among the figures they inscribe in circles, finally completing a portfolio of geometric drawings, in which accuracy and beauty are emphasized. Area and perimeter are further developed, and students learn to use the number π .

Algebra is developed in *seventh grade* as students learn to work with linear equations, and with expressions of increasing complexity. Their world of numbers is expanded to include irrational numbers, including the number ϕ . This emergence of abstract work is complemented by practical work with the metric system, volume, laws of mechanics, and simple computations in physics.

The geometry work incorporates both proof and calculation. The Pythagorean Theorem is a centerpiece, as is the pentagon's relationship to the Golden Mean and the Fibonacci Sequence. The students see this mathematics living in natural forms, such as the chambered nautilus and the pinecone as well as in paintings and works of architecture. Students also learn perspective drawing and its geometrical laws, creating a portfolio of careful and artistic drawings.

Eighth-grade math builds on the algebra of previous years, extending to factoring of all kinds, solving systems of equations, and the solution of quadratic equations. Throughout the algebra work arithmetic continues to be practiced, and students are asked to grow masterful in working with every kind of real number including integers, fractions, decimals, and irrational numbers.

The geometry work includes a special emphasis on solid geometry. The five Platonic solids are introduced through a variety of media which typically include clay, cardboard, compass and straightedge. The Pythagorean Theorem is extended to three dimensions, and the concepts of surface area and volume are applied to as many different solids as possible.

SOCIAL STUDIES: HISTORY AND GEOGRAPHY

Social studies begins in third grade and continues through the elementary school. History and geography are the major components of the social studies curriculum in the higher grades and are often taught together as parts of one lesson. For all history blocks, students create main lesson books that include compositions and creative writing assignments as well as maps, recreations of paintings of the period, and other illustrations. The class play usually draws on themes developed in main lessons.

HISTORY

Third grade social studies focuses on farming and house building. The heart of the third grade curriculum in all subject areas is the human effort to fulfill the basic needs of food, clothing, and shelter. Students examine Native American farming practices and how farming has changed, or not, over time. They also study the building of houses, including the ways in which houses must be built to accommodate varying climates and physical environments. At the end of the third-grade year, the class makes a one-week trip to the farm, where one of their activities is to plant vegetables, which they will harvest on their next trip in the fall of fourth grade. Often each student also constructs a model house out of authentic materials.

In **fourth grade**, students start their first real history lessons with the study of the history of New York City. Its growth is charted through the different peoples who settled there, through significant technological advances, such as the Erie Canal and the Brooklyn Bridge, and through biographies of important individuals. In their writing assignments, the students are introduced to a new writing style that involves organizing historical fact.

Fifth-grade history focuses on ancient cultures, including India, Persia, Mesopotamia, Egypt, and Greece, and on the time period from 10,000 B.C. to 200 A.D. The study of each region begins with its geography, and includes its mythology, anthropology, and literature. Students also learn about the peoples' practical achievements and the reasons for their decline. Because the study of ancient Greece is a focal point for fifth grade, there is a special emphasis on Greek culture, politics, and government. In connection with the history main lessons, the class performs a play dealing with mythological or historical themes.

The historical narrative continues in **sixth grade** with the study of the rise and fall of Rome, the birth of Islam, and the Middle Ages. Lessons emphasize Roman practicality and its continuing influence in the building of roads and aqueducts, the development of a professional army, and the codification of Roman law. The lessons also focus on how communities were formed and developed, from the early Christian churches to the Medieval monasteries. The class traces the growth of the power of kings and follows the invasions of Muslims, Vikings, and other tribes as events that had an impact on the prevailing ideas of the time. Each student prepares a project for presentation to the class.

Seventh-grade history covers the late Middle Ages through the Renaissance and up to the Age of Exploration. One main lesson begins with an examination of the changes in human consciousness that were taking place near the end of the Middle Ages, including chivalry, the rise of powerful monarchs, intense religious fervor, the development of cities, and the increasing importance of arts, crafts, and trade. A second main lesson starts with Elizabethan England. It includes the conflict between church and state, and progresses to northern Europe and the influence of Martin Luther. A study of the beginnings of natural science and Renaissance astronomy includes a look at the major astronomers and the conflict between religion and science. A final history main lesson covers Lorenzo de Medici and the flowering of Florence, the lives of the great artists, and the transformation of Rome into a city of culture. A study of Spain, the Inquisition, the Portuguese explorers, and the journeys of Christopher Columbus ends this lesson.

The study of history continues in the **eighth grade** with the colonial period in America and covers the American Revolution, the founding of the United States, the writing of the Constitution, the western expansion, and the Civil War. Students study the economic and social forces that shaped the emerging nation and later led to the War Between the States. The great waves of immigration in the early 19th century are also covered, as are the biographies of leading figures in U.S. history. Students read the Declaration of Independence, the Constitution, the Bill of Rights, and excerpts from Thomas Paine's Common Sense. Each student writes a paper about his or her family's immigration experience.

A final main lesson block is devoted to the study of revolutions, including the French, the Russian, the Industrial, and the contemporary Electronic revolution. The course ends with a survey of the major political events of the twentieth century. Biographies and narrative accounts enliven these studies. In addition to creating main lesson books, each student is required to complete a project.

GEOGRAPHY

In *fourth grade*, students begin a study of geography, starting with the local environment of the students' home and school and expanding to include all of New York City and the surrounding area. Mapmaking includes free-hand drawing of maps of everything from their own bedrooms to Manhattan Island. Topographical features are noted on these maps.

In *fifth grade*, the geographical view is widened to include New York State, the United States, and finally North America. Students examine the relationship between physical geography, climate, and human activity. Skills in making and reading maps are honed. Late in the year, each student writes a report on a particular state.

The geographic view expands in the *sixth grade* to a view of the whole world through climate and bioregions. Geology is an important aspect of the study, as students look at latitude and longitude, the equator, and the Tropics of Cancer and Capricorn. The curriculum may include a focus on Central and South America. In Spanish class, the ancient Maya, Aztec, and Inca civilizations are examined, as well as the consequences of European exploration and colonization. Every student completes a project on a country or area in Latin America, for which they write a report and create detailed maps.

Seventh- and eighth-grade geography focuses on Europe, China, Africa, and Asia, including the history of these regions. Map-making skills become more sophisticated, with emphasis on political and topographical maps. In the *seventh grade*, there is a study of the diversity of the peoples of the world, presented through the way different peoples live in contrasting climates in Europe, Asia, Africa, and North America. In *eighth-grade* geography focuses on how the peoples of the world interact through trade and communications; this complements the study of the industrial and information revolutions. Students also undertake the study of global atmosphere and the effects of wind, ocean currents, geological features, climate, and weather systems.

SCIENCE

Throughout the early elementary school, science, while not broken out as a separate subject, is woven into the curriculum. In the early elementary years, teachers focus on the natural environment the children experience every day. First through stories and then through daily discussion of the weather, close observation of animals, and the study of farming and gardening, the child's sense of belonging in nature and a reverent responsibility toward the natural world are nurtured. Before a child's ninth year, the teaching of science would be of little significance inasmuch as the child has not yet developed objectivity. Only when she or he begins to separate from the world does this ability emerge. Thus, the first block in natural science is taught in the

fourth grade. The science curriculum begins with the animal kingdom, as the closest to the human being, and moves to the study of plant life and the earth itself in the fifth and sixth grades respectively. Laboratory sciences are not introduced until sixth grade, when the child is able to grasp causal relationships. In the upper elementary grades, the emphasis remains holistic and experiential, and avoids a reductionist or analytical approach.

Science, as a formal discipline, begins in *fourth grade* with the study of zoology. The relationship between the human being and the animal forms the basis of these lessons, which also focus on how animals are both suited to and affect their environments. Representative species, from the simplest to the most complex, are closely examined. The study of animals culminates in the writing of a first research report on an animal chosen by the child.

The theme of *fifth-grade* science is botany. The first main lesson block focuses on flowering plants and trees, including the stages of development from seed to leaf to flower to fruit and back to seed. In the second block, students study the lower plants, which include algae, fungi, lichens, mosses, and ferns. During the farm visit, the children spend time observing and drawing plants and budding trees, including plants that we grow for food. The study of plants also includes the study of insects, especially the honeybee.

The study of geology is taken up in *sixth grade*. Topics include the three rock types, important metals, the formation of crystals, and the theory of plate tectonics. The causes and consequences of volcanoes, earthquakes, and tsunamis are discussed. Emphasis is placed on the water cycle. The main lesson book includes drawings and diagrams of ecological phenomena. During the class trip to the farm, the students observe many types of rocks, and take a challenging spelunking trip.

Physics is introduced in the sixth-grade year with a phenomena-based approach, that is, careful observation of physical phenomena, which is central to the students' experience. Demonstrations are typically performed by the teacher, and the students are required to observe carefully and describe their observations in detail. On the following day, students recall, discuss, and inquire into their observations, gradually forming clear, robust concepts that are flexible enough for the students to refine and expand in subsequent years. Sixth grade topics typically include acoustics, optics, heat, static electricity, and magnetism.

Astronomy is studied in *seventh grade* in connection with its importance to the Renaissance. The arcs and circles described by the stars, the sun's daily course, and the phases of the moon are observed and explained. The class considers the history of astronomy, especially its development from a geocentric to a heliocentric view of the universe, and the biographies of astronomers, such as Copernicus and Kepler. A mid-winter class trip to the farm allows for splendid naked-eye observation of the heavens. (See section below on "The Farm.")

As the *Seventh-grade* students begin to be more inward, they have a main lesson block in human physiology, also a vital discipline for Renaissance artists. Looking at the living body from the vantage point of health and human hygiene, the class covers such topics as the metabolic system, the organs of digestion, excretion, and reproduction, the respiratory and circulatory systems, the heart and lungs, the composition and circulation of the blood, and the immune system. Study includes the dynamic interplay of organs and functions throughout the body. The work with

digestion focuses on rhythms of digestion, nourishment, and nutrition as well as stimulants and poisons. Drugs, sex, addictions, and eating disorders are also addressed. The main lesson book includes detailed compositions and diagrams.

In the Seventh grade physics, students take an increasingly active role in creating the demonstrations. In addition to observing with their eyes and ears, every effort is made to have seventh graders experience the phenomena with their muscles and bones. The mechanics of simple machines provides impressive demonstrations here, as students lift heavy weights, including each other, with levers and pulleys. Physics becomes more mathematical as measurements are taken and calculations made. Mathematics can also be applied to the further study of acoustics, optics, and electrical circuits.

Chemistry is introduced in *seventh grade*. Topics include combustion, oxidization, acids and bases, salt formation, the lime cycle, and the environmental importance of water. Chemistry is taught not only as a laboratory science but also as a means of extending the students' vision of the earth and humanity. For example, students may read Jack London's "To Build a Fire" to deepen their understanding of fire's life-giving power. Students are required to take lab notes, write detailed reports, and complete carefully written and diagrammed main lesson books. Human anatomy and physiology is taken up in *eighth grade* with a focus on the skeletal system. Students see how form and function unite in the creation of a uniquely efficient structure, the human skeleton. The role of the muscles, the senses, the nervous system, and the brain are also examined. Main lesson books include detailed drawings of bones, including the human skull.

Eighth graders also study meteorology. In this class they are introduced to local weather systems, fronts, cloud formations, and storms. They observe daily weather patterns and attempt weather predictions, based on changes in barometric pressure and cloud formations. The study of planetary movement, wind patterns, ocean currents, and biomes enables students to look at present-day ecological concerns with a more informed eye.

Eighth grade physics investigates more complex relationships at work in physical phenomena. Fluid mechanics is a rich topic, with ideas such as the weight of air, challenging the students to form scientifically accurate concepts. Eighth graders are asked to integrate concepts so that mass and volume are both seen as contributing to density, and voltage and resistance together determine current. A centerpiece of the students' studies in eighth grade is the construction of a working electro-mechanical motor from the most elementary materials.

The *eighth-grade* study of chemistry focuses on organic compounds — carbohydrates, proteins, and lipids. The role of these compounds in nature, nourishment, and commercial products is examined. Students learn the history of sweeteners, the iodine test, and the properties of cellulose. Photosynthesis and respiration are presented as complementary operations. Nutritional chemistry is also addressed, including metabolism and the effects of organic compounds on the human body and health. Students often make rock candy, bread, milk, glue, cheese, or soap as demonstration projects.

FOREIGN LANGUAGES

All students at the Rudolf Steiner School take two languages, Spanish and German, from first through eighth grades. Each language is taught in two 40-minute periods a week. The study of these two languages, from two different language groups, Romance and Germanic, allow students to absorb knowledge of life from two different points of view and to develop an understanding and appreciation for other cultures.

In *first, second, and third grades*, language lessons consist only of oral work. At this age, children are easily able to acquire correct pronunciation, rhythm, and patterns of speech. Very little English is spoken in class, but the time is filled with songs, poetry, tongue-twisters, verses, and word games. Students create lesson books, filled with drawings taken from the lessons. By the end of third grade, they have a basic working vocabulary. Classes often perform short plays in Spanish or German at assemblies or for parent audiences.

In *fourth grade*, language study becomes more systematic. Basic grammar is introduced, spelling becomes a part of the lessons, development of vocabulary is emphasized, and the children begin to read and write. *Fifth-grade* language study becomes more complex. Textbooks are introduced, homework is now assigned, and quizzes are given in class. Although recitation, games, and singing remain important in *sixth grade*, the emphasis continues its shift to grammar, vocabulary, reading, and written work. There are regular tests, and students practice conversational skills in class.

In *seventh and eighth grades*, students read longer and more complex texts, and take tests on their comprehension. They continue to study grammar and vocabulary, to do regular workbook exercises and homework, and to complete written assignments. By the end of eighth grade, students are able to carry on basic conversations, read poetry, short novels and other texts, and write compositions. Fluency in one of the languages can occur after a student has gone on foreign exchange in the tenth grade.

MUSIC

Every main lesson throughout the elementary school begins with music. The children might sing or play the recorder. Often they work on songs that relate to the material they will be studying in the main lesson itself. In addition, there are two or three weekly music lessons taught by the music teacher. Older students often join the Interschool Orchestra of New York City or sing in the choruses of the Metropolitan Opera or the New York City Opera.

In *first grade*, the focus is on pentatonic melodies and echo songs to train pitch and retain the child's "high" voice. The children also begin learning to play a wooden pentatonic recorder. They learn to listen carefully, to match pitches, and to follow hand gestures. The overall intention in this year is to foster a love for music.

Second-grade students have three music periods each week. Folk songs are added to their repertoire as are simple rounds and harmonies. The teacher expects better concentration and develops memorization skills through more complicated and longer songs.

Third graders learn the rudiments of music theory and begin to read music, making their own music books. They switch from the pentatonic to the diatonic recorder. They learn musical notation, rhythmic values, and time signatures. Performances at school events give students a focus for their efforts.

In **fourth grade**, every student chooses an orchestral instrument for concentrated study. Weekly lessons are given at school, and daily practice on the instrument is required. Students who have already started studying an instrument may join the fourth- and fifth-grade orchestra. In addition, students receive choral and recorder music books and are expected to read music. Fourth graders are eligible to join the Junior Chorus, a volunteer choral group that rehearses once a week and gives concerts.

Fifth-grade students continue with their chosen instruments, now moving on to private lessons. They play in the fourth and fifth grade orchestra, where they learn to listen to several instruments at once and to follow a conductor. Many students now choose to play alto or tenor recorder. Students are still eligible for Junior Chorus.

Sixth graders continue individual lessons and join either the orchestra or band, which offer a challenging repertoire and give concerts during the year. Vocal work continues as well. Discipline, focus, and diligence are expected in singing and in three-part recorder music. Sixth grade students are still eligible for Junior Chorus.

In **seventh and eighth grades**, instrument study continues, as well as choral work and participation in the orchestra or band. More difficult music is learned and played. Students now sing and play a full repertoire of musical styles and periods. There are many opportunities for students to perform, both at school and in venues around the city.

VISUAL ARTS

In a Waldorf school, all students study drawing, painting, and the rudiments of clay modeling. In grades one through six, visual arts are taught by the class teacher. Drawing is part of the main lesson, while painting is taught in a separate period, although the themes are generally taken from main lesson subjects. The finest materials are always used, including high-quality watercolor paper, beeswax crayons, and good colored pencils. The overall purpose of the visual arts program is not only to teach students to draw and paint, but also to teach them how to see.

In the **first three grades**, the class teacher draws many pictures on the blackboard. The younger children copy these pictures using block crayons. In third grade, shading is introduced into the drawings, and block crayons begin to give way to more precise stick crayons. Color is emphasized, while stick figures and outlines are discouraged. Form drawing, a precursor of geometry, is taught in main lesson blocks, starting with simple straight and curved lines, and

moving on to mirror images and four-fold symmetry in second or third grade. Third graders practice running forms in preparation for learning cursive writing and forms that emphasize the relationship between the inner and outer parts of the form. Students also learn watercolor painting. Using wet paper and large brushes, the young children first experience the quality of each primary color individually. Later, as they learn to blend two colors, secondary colors arise from the painting. By second grade, they begin to see forms in the colors, and in third grade they are able to develop these forms themselves. In addition, all children model small figures out of colored beeswax, first warming it in their hands, and then creating forms based on nature or on main lesson stories.

In *fourth grade*, colored pencils are introduced. With these the students learn to draw maps and are also able to complete accurate sketches and diagrams for their science classes, especially botany and physiology in subsequent grades. Form drawing continues in fourth grade with intricate Celtic knots and in *fifth grade* with Greek frieze patterns. Calligraphy is introduced in *sixth grade*. From *sixth through eighth grades*, students also use their pencils to create the complex forms they study in geometry. In painting classes, older students begin sometimes to paint on dry paper, allowing them to return to their work over several days. They also pre-mix their own colors and study veil and layer painting techniques. Students are challenged to develop skill in creating fuller, more detailed compositions. In these grades, the children often work with clay during main lessons, creating animals, cuneiform tablets, and other figures based on main lesson subjects.

In *eighth grade*, having worked with color throughout the elementary school years, students are introduced to the new medium of charcoal. They work only in black and white this year, and are challenged to see their surroundings in a new way, as well as to handle this delicate medium with care.

HANDWORK

Handwork has been taught in Waldorf education since the first school in 1919. Handwork is a practical art that involves the senses of sight and touch as well as balance and movement. In doing handwork, fine motor skills are refined. The children learn respect for the process of making something and gain confidence in their ability to complete a task. Age appropriate projects are chosen for each grade. The children learn a variety of skills throughout the years, and a healthy respect for the natural materials used is fostered. Special care is taken to design objects that are practical and functional and also allow the children to work with color and form in a creative way.

In *first grade* the children begin the year exploring wool fleece. Their fleece is shaped as a cloud and then gently spun into a length of yarn that becomes a wool bracelet, necklace, or wiggly worm. This first experience with a natural fiber enlivens their senses of touch and smell and creates a reverence in the child for the gifts from nature. The children learn to finger knit a golden crown. They add gem colored bits of wool fleece to their crown by felting with the gentle friction of their hands. The children gradually learn to cast on stitches and knit. Rhymes help make learning the stitches easy to remember. The first knitted project is a small cat. Once

they have learned to knit, the children make a pair of knitting needles to take home and practice their knitting. Their main project is a recorder case. The children choose four colors of plant-dyed yarn to make this project. They complete this project with a wet-felted button made from the remnants of yarn. The children will also learn to sew a basic whipstitch on a sewing card and then sew a little clothespin gnome.

In *second grade* the children begin with a review of knitting and are also taught to increase and decrease stitches as well as purl. Crocheting is also introduced. This new skill focuses on the dexterity and coordination of their dominant hand. Their first project, a square potholder, strengthens their ability to make decisions, where to place their hook and when to add stitches. They will also learn to crochet in the round and make a chain bag for their eurythmy slippers.

The *third graders* begin the year crocheting. Their first project is a small pouch. They learn many new stitches that prepare them for their main project, a crocheted hat. This project challenges them to work with their own design of color choices and stitch patterns. The children also experiment with plant dying and use dyed wool felt to make a needle case. These cases remain in school and house needles, pins, and thread for future projects. Lastly, the children return to knitting and make a horse. The horse pattern is more complicated than previous projects, requiring the children to expand their forming and shaping skills, and building confidence in their abilities. This project coincides with their first Class Trip to the Hawthorne Valley Farm at the end of the year.

Handwork in the *fourth grade* focuses on the use of needle and thread. The children design and embroider a handwork bag that will hold their handwork for the next few years. They are taught several stitches to complete this bag, including the backstitch, invisible stitch, buttonhole stitch, and several embroidery stitches. Their next main project is a cross-stitched pouch. They work with several colors of embroidery floss, ranging from dark to light, blending the colors in a harmonious way while creating a mirror image pattern. This project especially awakens their awareness for a sense of beauty and logic.

The *fifth graders* return to knitting; their main project is a pair of socks. Their first project is a handwork pouch, which holds their sock pattern book, a pad, and a pen since they keep track of their progress. For the first time children “knit in the round” using four needles. This project calls upon the student’s ability to think spatially while creating three-dimensional forms. There are many challenges, as the many-step directions are complicated and, therefore, demand the children’s perseverance in the face of difficulty and complexity. Some children will go on to make mittens or try their hand at cable knitting.

The *sixth graders* design and create their own stuffed animal. They begin by making a charcoal drawing of their animal and make a pattern from their drawings. Careful thought is needed in order to create the necessary pattern pieces to ensure their animal is a freestanding three-dimensional object. They carefully hand stitch their animal and stuff it with wool fleece. This activity employs imagination, spatial reasoning, and fine-motor skills.

The *seventh grader* students learn the art of wet felting. Their first project is to felt a flat cloth, which can either be used as a mat or sewn into a different object. Their main project is to design

and make a pair of slippers. They make a pattern by tracing their own feet, noting their unique shape. They carefully select the colors of wool and then felt it, molding and customizing. If time permits, the students can also make a felted ball, wallet, or small bag.

As the *eighth grade* students study the Industrial Age in history and make motors in science class, they are introduced to the sewing machine in their handwork classes. All students learn to use the sewing machine, thread it independently, and sew accurately. To learn to operate the machine, the students do a simple first project of either a drawstring bag or nap pillow to be given to a child in the early grades. After completing this assignment, they complete an apron as their main project. The students first begin by drawing and designing their apron, after which they carefully take their own body measurements and create a pattern. The aprons can either be a traditional chef's apron, a half apron, or a carpenter's apron.

WOODWORK

The woodwork curriculum begins in fourth grade, with students spending a double period each week in the shop. The woodworking program teaches the use of basic tools, but it also teaches many other skills, including the important ability to carry out a project from start to finish, from design to completion. The children learn to take responsibility for their projects, to do their tasks thoroughly, and to take pride in a job well done.

In *fourth grade*, students complete a wooden mallet. During this process they learn about different woods, are introduced to the woodworking tools, and learn gouging and sanding techniques.

Fifth-grade students make a salad spoon and fork. They work to refine their technique with the gouge, the rasp, and the sander, and learn how to oil and protect wooden objects. *Sixth-grade* students, fresh from the study of geometry and acoustics, are given pieces of hollow bamboo from which to fashion working flutes, which are expected to be in tune. *Seventh graders* apply their knowledge of physics to the making of simple moveable toys or folding stools, based on the principles of the lever, the wheel, or the inclined plane. In *eighth grade*, students are able to select from more complex projects, such as boxes, table lamps, benches, or shelves.

EURYTHMY

Eurythmy, developed by Rudolf Steiner, is an art of human movement set to music, poetry, or speech. It is sometimes called "speech made visible," and is intended to be a complement to intellectual learning. By studying eurythmy, students learn dexterity of movement, grace, poise, balance, and concentration. They also develop a sense for sound and space and a feeling for social harmony.

The imaginations and pictures from fairy tales and nature stories are the main themes in the **first grade** eurythmy lessons. Arm gestures representing the sounds of the language are connected to the images of the stories. This is often followed by corresponding movement in space, accompanied by integrated music. Moving simple forms, differentiating straight and curved lines, helps the children to experience in their bodies the forms they are drawing in Main Lesson. It also helps them orient in three-dimensional space. The children practice listening skills by stepping and clapping simple rhythms found in music and verse.

In the **second grade** the imaginations and moods of the saint stories and fables are brought to life through movement and gesture. Spatial forms become more complicated and call upon the children to move with greater awareness of the group. Moving in mirror patterns is introduced at this time. Several social exercises are also introduced and practiced in order to awaken a feeling for harmonious social interaction. Listening skills are practiced by stepping and clapping simple rhythms in music and poetry.

In **third grade** the child begins to experience him or herself as separate from the world with an inner life that stands apart from the outer world. In eurythmy we help the child to find a healthy breathing between these two worlds by moving forms that involve contraction and expansion, and by introducing the inward minor scales and melodies as a contrast to the major scales. In speech eurythmy the content of the poems complement the Main Lesson blocks and include themes such as the Old Testament creation story, house building, and farming. The arm gestures representing the sounds of the language are now performed with greater consciousness. Simple copper rod exercises are introduced that help the children find a healthy relationship to their growing bodies and the surrounding space. Concentration exercises are also introduced, which help the children gain independence in their movement, since they are only successful when fully concentrated on the activity, rather than simply following along.

With growing self-awareness brought on by the nine year change, children in the **fourth grade** have a new relationship to space. Spatial forms are now moved with a frontal orientation, which brings a greater awareness to the different directions in space. Movement forms with crossings (as in figure eights) are also a theme. The children develop a new relationship to speech and language, strengthened by practicing forms in space related to the grammatical elements of language and by working with the strong alliterative poems, connected to the Norse Myths. In tone eurythmy the children learn gestures for the tones of the C-scale and apply these to simple melodies. Group exercises for the cultivation of a harmonious social life continue as well as concentration and rod exercises, which become more complicated.

The **fifth grade** Main Lesson curriculum offers rich material for movement in the eurythmy lessons. By working with different qualities of movement, we try to capture the mood and create an experience of the ancient civilizations studied in Main Lesson. In conjunction with the study of Ancient Greece, the children move archetypal rhythmic patterns with an emphasis on the hexameter. In tone eurythmy the students experience the difference between sharp and flat tones, and learn to express this through gesture. The fifth grade is often considered the “golden age of childhood”. Here the child is closest to experiencing a harmonious relationship between the inner self and the outer world. At this time the children learn a movement form called the

Harmonious Eight, which helps to cultivate this balance. The work with copper rods is expanded, and concentration exercises, which grow more demanding, continue to be practiced.

Sixth grade children are growing deeper into their physical organism. We support this in eurythmy lessons with an emphasis on copper rod exercises that help the children find a balance in their physical bodies as well as an awareness of the surrounding space. In tone eurythmy the students learn to identify musical intervals, complementing their Main Lesson block in acoustics, and then learn the eurythmy gestures to express the intervals in movement. The octave is emphasized, as this is the interval that Rudolf Steiner indicated would “uplift” the children at this age, preventing them from sinking too deeply into physicality. To complement the geometry lessons, the children move inversions and transformations of squares, triangles, pentagrams, hexagons, etc. Concentration exercises continue to help the students become independent in their movement while rhythm exercises help them to move more harmoniously as a group.

In the **seventh and eighth grades**, the eurythmy curriculum is still drawn from the main lesson work. As the children are entering puberty, the exercises are designed to support growth and to establish discipline in the body. Students learn to be aware of themselves in space and to take responsibility for their movements. They continue their work with complex rhythms and forms, and begin to do more difficult movements involving the throwing and catching of copper rods. As they consolidate their understanding of rhythm, form, and gesture, and become more self-confident, they are able to engage in longer and more complex presentations, sometimes performed in front of an audience.

PHYSICAL EDUCATION

Children in **grades one and two**, who do not yet participate in formal physical education, are given ample time for physical activity each day. Afternoon play time – two periods every day in first and second grades, and one in third – is usually spent in Central Park. Whether playing games organized by the class teacher, or engaging in free play, the students run, skip, climb, jump, throw, and catch in a free, imaginative, non-competitive atmosphere.

In **grades three to six**, classes are bused to the two gymnasiums at the 92nd Street YMHA for a full Physical Education program. They participate in a wide range of sports, activities, and games, which are taught in four- to six-week rotating units. Classes are designed to provide effective, challenging, and enjoyable activities to improve students’ level of physical fitness. The primary fitness objectives are vigorous activity, self-responsibility, a healthy lifestyle, and sportsmanship. Whenever possible, Physical Education classes also include exercises based on Bothmer Gymnastics developed by Count Fritz Von Bothmer in collaboration with Rudolf Steiner and Spatial Dynamics, forms of exercise and movement, developed by Jaimen McMillan, based on principles of Bothmer movement and Waldorf principles of age-appropriate education.

The **fifth grade** students have a block of the basic Greek gymnastics – running, jumping, wrestling, javelin, and discus – which culminates in a Pentathlon held with fifth graders from local Waldorf schools.

In *grades seven and eight*, physical education classes are taught by gender and grade level. They participate in a wide range of sports, activities, and games, which are taught in four- to six-week rotating units. More advanced skills are taught to this age group; and although competitive games are played, emphasis is placed on participation, effort, technique, teamwork, sportsmanship, and self-improvement.

Beginning in seventh grade students may join sports teams as an after school interscholastic program. Try-outs are not held. All students are encouraged to participate, regardless of skill level or prior experience. The Rudolf Steiner School is a member of the Big Apple Conference in The Independent Schools Athletic League. Our teams compete against teams from independent schools of similar size. Sports include soccer, volleyball, basketball, baseball, softball and track.

THE FARM

The Hawthorne Valley Farm School is located in Columbia County, New York. It is a small, working, bio-dynamic dairy farm, which markets milk, yogurt, and a variety of cheeses. The facilities, on acres of woodland, fields, and gardens, include a farmhouse that accommodates the visiting classes, a dining hall, a barn, a horse barn, a bakery, an organic garden, and a store that sells organic foods, including those produced on the farm itself. There are horses, cows, pigs, goats, and chickens.

The farm program was developed so that New York City students could learn in a rural environment. Every year, students in grades three through six spend a week at the farm. Their studies parallel and supplement the academic curriculum. As part of their study of farming, the *third grade* plants, composts, makes butter, and bakes bread. *Fourth graders* incorporate their study of the Hudson River Valley and are able to expand their lessons in zoology with firsthand observation. In connection with botany, *fifth graders* observe plants and bees and study the local ecology. Students in the *sixth grade* identify minerals and geological formations, explore local caves, and use compasses to find their way in the woods. In the *seventh grade*, students visit the farm in February for a focus on winter survival skills and naked eye astronomy.

The week at the farm also allows for other memorable experiences — being with friends away from home, hiking, sledding, catching frogs, collecting eggs, singing around a campfire, and sleeping under the stars.

TECHNOLOGY

Our school is different from many other schools in many ways, including that there are no computers in our classrooms. One of the goals of Waldorf education is for students to experience the natural world and the human world through their senses and imaginations. Another goal is that the children are able to express what they are learning competently, comprehensively, and artistically through handwriting, drawing, painting, and sculpting as well

as singing, reciting, acting, and expressing through movement. We think that computer technology will be most useful once the child has integrated these skills and capacities. The following describes the place that technology holds in the elementary school.

In *fourth grade*, under the guidance of the lower school librarian, our students are introduced to how to search for a book on a computer. *Fifth* through *eighth grade* students may do research at home on a computer; *seventh* and *eighth grade* students may write drafts or final essays on home computers.

While Waldorf early childhood and elementary school teachers do not teach their students to use computers, experiences of Waldorf high school students and graduates show that whatever technology they wish and need to utilize they deftly master. A core goal of Waldorf education is that our students learn how to learn. Waldorf graduates reflect a wide diversity of professions and occupations including medicine, law, science, engineering, computer technology, the arts, social science, government, and teaching at all levels.