

# THE HARKER SCHOOL

## PRIMARY & ELEMENTARY ACADEMIC PROGRAMS

K-GRADE 5 • 2015-16



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**HARKER®**  
*Est. 1893 • K-12 College Prep*

Lower School  
4300 Bucknall Road  
San Jose, California 95130



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## LANGUAGE ARTS

In all grades, grouping by performance level allows us to meet the needs of individual students. Ongoing evaluation through the year ensures flexibility, and students are moved as necessary to ensure optimal learning. A solid foundation in language fundamentals is established by utilizing an integrated approach to language arts that builds skills in the areas of speaking, listening, oral and written communication, vocabulary development, and grammar and mechanics.

### **Kindergarten-Grade 2:**

Reading skills are developed using phonics and a literature-based program with a focus on comprehension and critical thinking. Teachers also read aloud to students, exposing them to a rich variety of genres. Thought-provoking discussions about the reading selections enhance comprehension, as does the introduction of literary components (plot, characterization, mood, the author's purpose).

Vocabulary development is an integral part of the process. Writing skills involve instruction in both the mechanical process of forming letters and the gradual development of the ability to communicate through the written word. Grammar is taught both as part of the writing process and as an individually practiced skill.

### **Grades 3-5:**

Reading, comprehension, grammar, vocabulary and writing (mechanics and composition) are the continuing components of the language arts curriculum. In addition to selections of poetry and nonfiction, students are reading longer books and novels. The foundations for literary analysis begun in the earlier grades are expanded and gradually become more sophisticated. Analysis of plot, character development, conflict, theme and the use of literary devices such as metaphor, simile, imagery and symbolism present opportunities for rich classroom discussion and eventually become topics of writing assignments as students' skills develop. Creative writing is an additional component of the curriculum.

## READING SELECTIONS

### **Grade 3:**

Students read selections from the Junior Great Books anthologies and four selections from the following list, depending on placement: *I Have a Dream*, *Abel's Island*, *Because of Winn Dixie*, *James and the Giant Peach*, *Little House in the Big Woods*, *Riding Freedom*, *The Lion, the Witch, and the Wardrobe*, *The Adventures of Ulysses*, and *Yang the Youngest and His Terrible Ear*.

### **Grade 4:**

All students read short stories, poetry selections and *By the Great Horn Spoon*. Students also read two of the following books depending on placement: *Call it Courage*, *Tuck Everlasting*, *From the Mixed Up Files of Mrs. Basil E. Frankweiler*, *Island of the Blue Dolphins*, *Caddie Woodlawn*, *The Secret Garden*, and *The Wind in the Willows*.

### **Grade 5:**

All students read short stories, poetry selections, and *Out of the Dust*, *The Hobbit* and, depending on placement, *The Miracle Worker* or *The Call of the Wild*.

## MATHEMATICS

As with language arts, students are placed in performance groups that allow them to learn and be challenged at a pace that is optimal for them. The groups remain flexible so students can move to a different performance group should their needs for optimal learning change throughout the year. Since math is spiral in nature, there are some topics introduced at one grade level, but practiced and mastered at subsequent levels. All students will meet regularly for a math lab class where the focus is on using manipulatives and practicing problem-solving approaches that further understanding and allow for application of mathematical concepts.

The topics listed below for each grade level define the core concepts.

Our K-2 math program places an emphasis on number sense, problem-solving and mental math. Children also develop their computational fluency, with exercises and drills to promote accuracy and speed in their basic facts.

### **Kindergarten:**

Designed to provide a transition from the child's real-life experiences to thinking mathematically, kindergartners develop their understanding of math concepts through a variety of activities. They engage in daily lessons that include hands-on materials, group discussions and independent practice. A range of topics may include patterning, counting, coin value, shape recognition, and recognizing attributes of length, weight and time.

### **Grade 1:**

A balance of logical reasoning, critical thinking and computation allow children to make a connection between their daily life experiences and math. Children deepen their understanding of previously learned concepts and examine new topics through hands-on activities and written exercises. A range of topics may include place value, describing attributes of 2-D and 3-D shapes, time, money, graphing, and standard/metric units of length, weight and liquid.

## MATHEMATICS, CONTINUED

### **Grade 2:**

Children extend their understanding of foundational skills and continue to strengthen previously learned concepts. Children use a variety of tools, develop varied strategies and use efficient methods to communicate their mathematical thinking. A range of topics may include using larger numbers, multi-digit addition/subtraction, multiplication/division, understanding fractions, identifying and measuring angles, calculating perimeter and area, and working with elapsed time.

Our grade 3-5 math program extends all of the concepts learned in the primary grades with a major focus on mastery of multiplication and division of whole numbers, fractions and decimals. Problem-solving is heavily emphasized both in oral and written form. As the students begin to increase their ability to think more abstractly, bar modeling (or whole and part model drawing) is emphasized as a major problem-solving strategy.

### **Grade 3:**

Problem-solving is an increasingly important component of the mathematics curriculum. Strategies for problem-solving include drawing bar models to obtain solutions. There is review and extension of measurement, geometry, fractions, and computation operations including multi-digit multiplication and division. Addition and subtraction of multi-digit numbers with regrouping and multiplication facts are mastered. Other topics include working with decimals, relating decimals to fractions, and common factors.

### **Grade 4:**

Fourth grade mathematics is about developing fluency with multiplication and division, while honing estimation strategies that allow students to find quotients using multi-digit dividends and divisors. Place value is revisited as decimal understanding and application is strengthened and expanded. Number theory is introduced and applied to the students' continued work with fractions and mixed numbers.

## MATHEMATICS, CONTINUED

Bar modeling is extended and used to express percent as well as to solve problems involving ratio and comparisons. Real-life problems are included throughout the year and geometry expands to include the study of surface area and volume.

### **Grade 5:**

The concepts of fourth grade will be reinforced and taken to the next level in fifth grade. Major focus is on moving the students to middle school with a solid mastery of all four operations on fractions and decimals, and a good working knowledge of percent. Major emphasis is on modeling proper format and technique when problem-solving and using number sense to check if solutions are reasonable. Depending on the performance group, students will practice introductory algebra skills and explore them in the context of linear functions and the coordinate plane. They will also progress in their geometry exploration to solving complex problems involving overlapping plane figures and calculating surface area and volume of more complicated 3-D figures. Additional topics of study are data analysis, integer functions, and proportional thinking (especially as it relates to measurement conversion).

## SCIENCE

Beginning in grade 1, science classes are taught by specialists with degrees in science and related fields. Hands-on exploration and an inquiry-based approach are the cornerstones of the program, incorporating the scientific method from the primary grades onward.

### **Kindergarten:**

The program focuses on adding to and extending children's natural curiosity about the world in which they live through the following topics: animal habitats, changing seasons, dental health, endangered species, environmental awareness, five senses, plant life, the solar system, oceanography and weather patterns. The STEM specialist also meets with kindergartners once a week, introducing students to hands-on projects that develop critical thinking, reasoning and problem-solving skills.

### **Grade 1:**

Topics covered are the states of matter, properties of solids and liquids, balance and motion, air and weather, insects, animal adaptations, introduction to plant life cycles, light, prisms and color.

### **Grade 2:**

Topics covered are metric measurement, water, human body, electricity and magnetism and sound comprise the curriculum.

### **Grade 3:**

Topics covered are the plant life cycle, animal classification, environments, the sun, the moon and the solar system, earthquakes and volcanoes.

### **Grade 4:**

The fundamental laws that govern the physical world are the focus, including motion, forces, work, power and energy. Specific topics include simple machines, electricity, magnetism, the properties of sound and light, the structure of matter and the periodic table.

### **Grade 5:**

This course is a survey of living things, their origins and relationships. Characteristics and adaptations provide the curriculum for this year. Specific topics include use of microscopes, cell structure, classification of living things, viruses, bacteria, protists, fungi, plants and animals.

## SOCIAL STUDIES

As children grow, so does their awareness of the world and their place in it. The social studies curriculum supports that growth and development by gradually enlarging the parameters of study, focusing on both the cultural and historical aspects of the individual and society.

### **Kindergarten:**

Students develop an awareness of their roles as citizens in a variety of communities. They engage in activities that provide opportunities for learning about the school, the neighborhood and the city. Units on citizen responsibilities and civic duties, economics and transportation are incorporated. In addition, traditional American holidays and celebrations and those reflecting cultures represented in our diverse community are studied and observed. As part of the school community strand, students learn about similarities and differences between schools internationally. This topic culminates in a video conference with peers at our sister school in Japan.

### **Grade 1:**

Students are introduced to map skills, landforms and the world beyond their immediate community. Students develop an awareness of and appreciation for the similarities and differences of people around the world as they participate in lessons that focus on the cultures, customs and unique qualities that distinguish the seven continents. Students learn about the daily life of those who live internationally, and participate in a global education project with a school in Saudi Arabia as part of those lessons. Students are also guided in developing the critical thinking skills that will facilitate their ability to participate successfully in class discussions and collaborative projects.

### **Grade 2:**

Students “travel” through the five regions of the United States. They learn about the different landforms, climates, natural resources, landmarks, important people and early American history with each region. Additionally, students are introduced to and learn about patriotic symbols and their significance. As a final project, students research and present a state report, highlighting important information and interesting facts relating to a particular state.

## **SOCIAL STUDIES, CONTINUED**

### **Grade 3:**

In this course, topics include native Californians, explorers and settlers, the mission and rancho days, the 1849 Gold Rush, statehood, the transcontinental railroad, and agricultural advances, all interwoven with a thread of California's vast diversity of cultures and people. In order to become informed, active participants in a representative democracy, students will also learn about the institutions and people who make decisions concerning their lives, their country and the world.

By learning about the three branches of the federal government and making comparisons with the structure of their state and local counterparts, students become cognizant of their roles and responsibilities as citizens of a democracy.

### **Grade 4:**

In this course, world geography and cultures are covered, with an emphasis on encouraging students to think as geographers. Students write a research paper on one of the countries of the world, in addition to researching and presenting current events on world news topics.

### **Grade 5:**

In this course, students will engage in a thorough study of United States history. Students will study the events of early European exploration of the Americas and will learn about the long-lasting effects of European influence. Students will also learn about the U.S. as an emerging, independent nation, examining the U.S. from its independence through the Civil War. During this course, students will also participate in a comprehensive study of the research process as they write a research paper about a famous American.

## SPANISH

Spanish is introduced in grade 1 with the focus on developing listening skills and oral language, reflecting the way children acquire their first language. Songs and games are utilized as learning tools. In grade 2, more emphasis is placed on oral proficiency, and by grade 3 students begin to practice reading and writing in Spanish, though the focus is still on oral skills. There is continued emphasis on immersion in the language and the use of context clues to understand new words.

An increase in the importance of reading and writing occurs in grade 4, with written assignments and short written quizzes. Rules of grammar are introduced in grades 4-5, and students learn about the gender of nouns and adjectives and conjugation of verbs in the present tense.

Learning a language includes learning about the culture of the people who speak it, and a discussion of the Spanish holidays as well as games, songs and stories of the Hispanic culture enrich the lessons.

## COMPUTER SCIENCE & APPLICATIONS

### **Kindergarten:**

Students are introduced to the names of a computer's parts, the uses of computers and how to handle hardware and software, hand placement on the keyboard, the use of special function keys (return, control, delete, etc.), mouse skills, and how to create, print and save simple files. Students will create thematic multimedia projects that reinforce concepts from kindergarten social studies and science classes. Projects will include original drawings and text. Students will also use various programs to practice logical reasoning, sequencing and problem-solving skills. They will also learn programming fundamentals through an online app called Kodable.

### **Grade 1:**

Students learn the names of a computer's parts, the uses of computers and how to handle hardware and software, proper keyboarding technique, the use of special function keys (return, control, delete, etc.), mouse skills, and how to create, print and save files. Students will create a multimedia projects that incorporate original drawing, animation, text and video. They will also learn programming fundamentals through a board game called Turtle Robot.

### **Grade 2:**

Students practice proper keyboarding technique while trying to improve their accuracy and speed. Throughout the course, students practice basic computer navigation (to and from files and applications on the harddrive). Students create a multimedia presentation that includes imported images, original drawings, text, animations and video. They will learn to export their project to view it as a slide show or movie. Students will also learn programming fundamentals by programming a mini robot called a BeeBot. Students will work as a team to move their BeeBot to a specific area on a game board and will also use the related iPad app to practice using directional language and algorithmic thinking.

## COMPUTER SCIENCE & APPLICATIONS, CONTINUED

### **Grade 3:**

Students use presentation software to create a presentation on the Gold Rush. Information Literacy is introduced and practiced in context of creating the Gold Rush presentation. Students also are introduced to online collaboration tools and will share their work with their teachers online. Keyboarding proficiency is emphasized throughout the trimester. Students will also learn programming fundamentals in an online game called Kodable.

### **Grade 4:**

Students will learn basic network navigation, will practice keyboarding, and will create all elements of a video game simulation using a visual programming language. Digital Citizenship will also be the focus of two class meetings.

### **Grade 5:**

Students will learn basic network navigation, will practice keyboarding, and will learn a few computer science fundamentals (binary numbers, algorithms, image representation, compression). Students will also create a 3- to 5-minute public service announcement that incorporates images, music, voice-overs, student-created video footage, transitions and titles.

## PERFORMING ARTS

From K-5, each grade level's performing arts class consists of three-fourths music and one-fourth theater. All grades learn patriotic and traditional folk songs, as well as songs from other countries, Broadway musicals and popular artists. Music theory is explored at all levels, as are proper singing techniques and music appreciation. Memorization of songs for performances is standard. Improvisational theater and creative dramatics games are used in every grade to promote creativity, self-confidence, and good listening and concentration skills. In conjunction with the physical education department, all students participate in dance classes, which allow students to focus on moving their bodies and limbs with agility, strength and fluidity, while teaching them to use momentum and control as they move. There are additional opportunities for students to participate in dance in the after-school program and in the annual dance productions.

### **Kindergarten:**

Students participate in rhythm activities, note matching games, story-telling theater, a video conference performance for Tamagawa Gakuen, our sister school in Japan, and an annual spring production.

### **Grades 1-3:**

Musical concepts, especially pitch and rhythm, are explored through singing, playing and listening to music. Students also work on their development of musicianship, explore improvisational studies, and are introduced to composition and instrumental studies. Winter holiday programs develop stage presence and encourage a team atmosphere; grade 1 has an afternoon holiday recital, and grades 2-3 combine for an evening holiday performance.

### **Grade 4:**

The curriculum includes written assignments in the basic symbols and terminology of written music, ear-training exercises to develop musicianship skills, and breathing exercises to teach proper vocal production. Activities in music appreciation expose students to world music and to the compositional styles of a variety of classical composers. Students engage in improvisation activities in music and

## PERFORMING ARTS, CONTINUED

theater and performances at the Harker Family & Alumni Picnic and Grandparents' Day.

### **Grade 5:**

The curriculum builds upon skills developed in grade 4 music. Music topics include reading and performing music, exercises for musicianship, development of proper singing technique, improvisation activities and playing the recorder. Compositional styles of various classical, jazz and musical theater composers are explored. Theater topics include improvisation games, pantomime, exercises to develop creativity, and a monologue project that explores character development. Productions include the annual grade level musical performance and the grade 5 promotion ceremony.

### **K-5 Physical Education Dance:**

Three weeks out of the school year all K-5 students attend a dance class with a Harker dance instructor. The dance class enhances students' coordination and flexibility, and allows them to focus on moving their bodies and limbs with agility, strength and fluidity. It teaches students to use momentum and control as they dance and gives them the opportunity to explore moving to the rhythm and tempo of music.

This program provides basic dance skills in jazz, modern and ballet. Students build on these skills from grade level to grade level. A creative dance component allows students to explore creating their own movements in small groups and alone.

### **After-School Performing Arts:**

The Bucknall Choir (grades 4-5), K-5 dance, instrumental lessons, orchestra, winds and jazz band all meet as part of our performing arts after-school program. For details and performance schedules for these groups, please refer to our lower school performing arts brochure.

## VISUAL ART

At all grade levels, art courses use a variety of art media to build a basic foundation and understanding of the elements and principles of art and design. Lessons focus on engaging students' imaginations, enhancing their critical thinking skills and developing technical and perceptual skills, as appropriate for the different grade levels.

The program is sequential and cumulative, giving students both the knowledge and technical skills to use art as a means of personal expression and communication. Students are encouraged to think creatively, and to respond to problems with originality, flexibility, fluency and imagination. Students learn to appreciate and value art as an important realm of human activity and a lifelong source of insight, understanding and personal and social development. Understanding art within its social and historical contexts and its relationship to other fields of knowledge are also goals of the program.

### **Kindergarten-Grade 3:**

Components of the curriculum include an introduction to the elements of art and design concepts such as line, pattern, texture, positive and negative space, color mixing, symmetric and asymmetric design, and balance. Projects include ceramics, collage, drawing, painting and printmaking. Students develop hand-eye coordination and fine motor skills. Students are also introduced to art history through selected movements and artists including, but not limited to, Piet Mondrian, Joan Miro, Gustav Klimt, Pablo Picasso and Henri Matisse.

### **Grades 4-5:**

Students practice the elements of art such as form, line, shape, color, texture, space and value. In addition, the students are introduced to the principles of design (emphasis, balance, harmony, variety, movement, rhythm, proportion and unity). Students have the opportunity to work with a variety of art media such as pencil, colored pencil, chalk and oil pastel, watercolor, paint and printmaking. They also have opportunities to work in 3-D through ceramics and sculpture. Students learn the skills needed for specific art tools and select technical skills that help the development and hand-eye coordination, fine motor skills, confidence

## **VISUAL ART, CONTINUED**

and personal expression. Students are also given the chance to relate their work to specific historical movements through art history; this includes, but is not limited to, artists Vincent Van Gogh, Henri Rousseau and M. C. Escher.

## PHYSICAL EDUCATION

The physical education program offers opportunities for students to participate in a wide range of physical activities, learn the fundamentals of team and individual sports, learn personal fitness skills, interact within their social world, and develop healthy lifetime habits and interests. Health topics, including mental as well as physical health, family life, maturation and drug education are a part of the physical education curriculum.

Two categories – movement concepts and skill themes – characterize the physical education curriculum in K-5. Movement concepts are space awareness (self-space, general space, levels, directions, pathways, extensions), effort (time, speed, force, flow) and relationships in the physical world. Skill themes begin with traveling (walking, running, hopping, skipping, galloping, leaping, sliding) and progress through increasingly sophisticated skills (balancing, fleeing and dodging, jumping and landing). By grade 3, the program is helping students develop skills in rolling, kicking, throwing, catching, volleying, hand dribbling, foot dribbling, and striking with racquets and bats. Grade 4-5 students continue to enhance the development of these skills, as they provide the foundations for students to experience success when playing team sports.

Dance is part of the program beginning in kindergarten, swimming begins in grade 1, and fitness testing is introduced in grade 2. [These are components of physical education throughout the lower school program.]

## STUDY SKILLS & CHARACTER DEVELOPMENT

### **Grades 3-5:**

The study skills course is designed to assist students in developing strong individual study habits. The course focuses on organizational and time management skills. Topics are introduced in grade 3 and are reviewed and expanded through grades 4-5. Specific topics include creating a good study environment, organizing materials, organizing assignments, developing a study plan, setting priorities, note taking, test preparation and research skills. While a variety of topics are taught in each course, each grade level has a particular focus:

Grade 3 - how to keep an organized binder and an organized locker;

Grade 4 - how to study for a test over multiple nights and how to make flashcards;

Grade 5 - how to use teacher feedback and how to best utilize the extra help period.

In grades 1-2, the focus is how to get ready to do homework and how to pack and unpack one's backpack, respectively.

A portion of each grade 3-5 study skills class period is set aside for students to begin their homework assignments.

### **Kindergarten-Grade 5:**

Every Harker student is respected as a valuable human being, and every student is expected to extend that same respect to others. Kindness, respect and integrity permeate daily campus life and have formed the heart of a Harker education since the school was founded in 1893. We expect our students to follow the Harker Honor Code of honesty and personal accountability. Structured, interactive lessons are also part of the comprehensive character development included in the Harker educational experience.

Social and emotional skills are essential to academic learning and success in life. Building resiliency and empathy for others are important goals we have for our students. Students learn tools that encourage self-awareness, self-management, healthy relationships and responsible decision-making.

## **LIBRARY**

The library is a place where students have access to print, audio-visual and electronic data. In addition to using the library for pleasure reading and homework assignments, the students are taught library skills and are introduced to the best of children's literature by professional librarians. Children meet once a week with a librarian in K-4.

### **Kindergarten:**

Topics include folk tales, picture books, poetry, book care, library appreciation and the ability to discuss books.

### **Grade 1:**

Students explore countries of the world using books, creative dramatics, movement and music.

### **Grade 2:**

Students listen to and act out 21 different fairy tales, culminating in their presentation of the annual Ogre Awards.

### **Grade 3:**

Topics include library organization, computer catalog, basic reference resources, evaluating Internet sites, reading poetry aloud and interpreting poetry.

### **Grade 4:**

Library skills at this level include advanced searching on the computer catalog, Dewey Decimal System, basic reference tools, magazines, literary genres, creating a bibliography, Internet activities, and a research unit about poets.

### **Grade 5:**

Students participate in the "Book Talk" program, facilitated by our librarians. Students also participate in special research projects.







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