

Alta Vista Lower School

Curriculum Overview

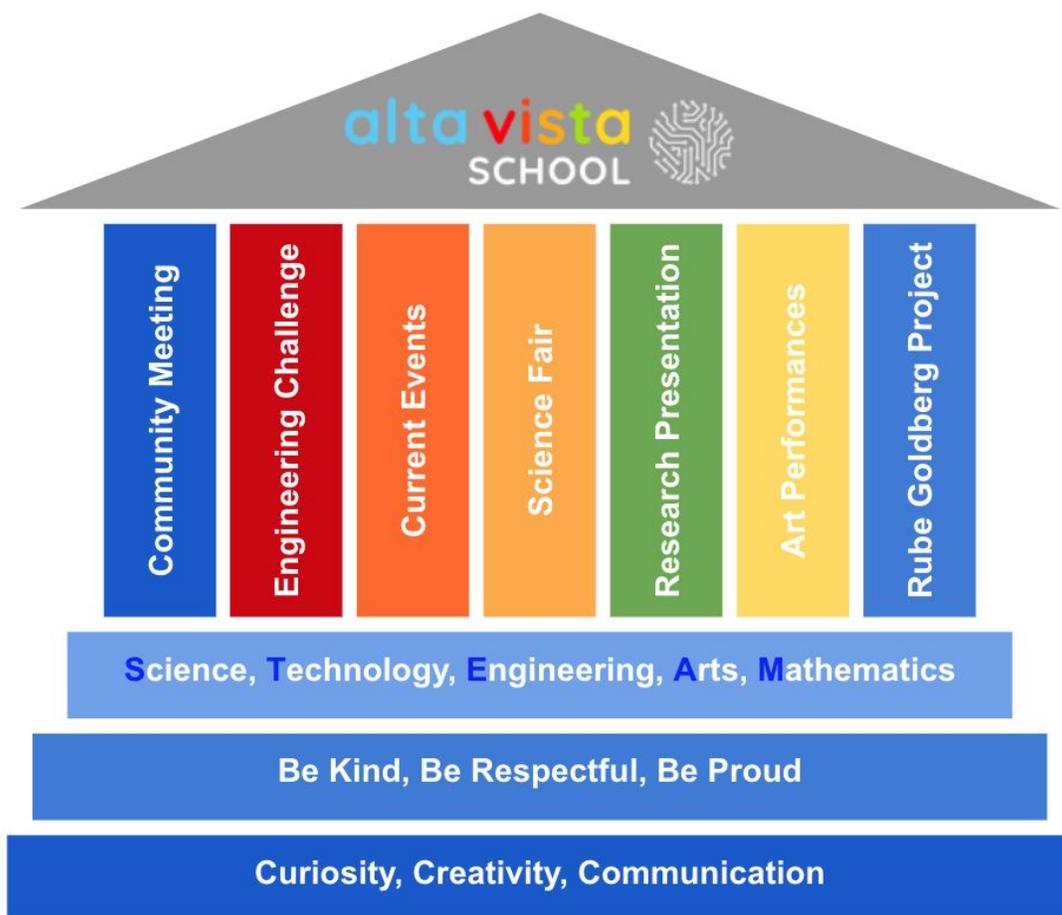


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Introduction

Alta Vista School prepares students to thrive as creative thinkers, innovators, and catalysts for positive change in the world. These education goals guide students to discover the world and themselves, imagine new possibilities, and act as drivers of change. To this end, curiosity, creativity, and communication are the foundation of the Lower School program. This is achieved through inquiry-based, hands-on, and experiential curricula that inspire love of learning. Within each subject area, students explore and pursue their unique interest, talent, and voice to further their self-awareness and self-knowledge.

An interdisciplinary and collaborative approach is emphasized within the core subjects of science, mathematics, literacy, and social studies such that a particular topic is considered through multiple lenses and across disciplines to reflect real-world experiences and challenges. This robust STEAM educational approach promotes critical thinking, multiple perspectives-taking, and creative problem-solving. The core program is enriched with classes in Spanish, garden, visual arts, tinkering, drama, music, and physical education. Learning also extends well beyond the four walls of the school as the neighborhoods of San Francisco are embraced as an extension of the campus to provide meaningful, relevant, and immersive experiences.

The academic school year is divided into trimesters, each spanning approximately ten weeks. The curriculum draws on grade-level and grade-next standards¹ that balance planned content and flexibility for creative expression based on students' interests. Lessons and units are framed by guiding and essential questions. Specific examples of curricula and learning standards are provided to families weekly through Week Ahead newsletters that are emailed to parents and posted on the school's website, ongoing teacher communications and conferences, and year-round opportunities to visit the classroom during learning celebrations and exhibitions. Informal and formal assessments are ongoing, research-based, and designed to motivate students' growth and learning rather than act solely as evaluative tools.

To develop students to serve as future thought leaders, innovators, and changemakers, AVS also prioritizes public speaking and presentations, collaboration, community service, and social and emotional learning, which are deeply integrated into rigorous academic practice.

¹ Standards derive from California Common Core State Standards (CCSS), Next Generation of Science Standards (NGSS), College, Career, and Civic Life (C3) Framework for Social Studies State Standards, and The Fountas & Pinnell (F&P) Literacy Continuum

Social and Emotional Learning

Emotions are fundamental and foundational to understanding the human experience and integral to maintaining healthy relationships and community. Emotions drive curiosity, creativity, and decision-making, which all promote optimal learning. At AVS, young learners practice how to recognize, understand, label, and express emotions with care and concern. This practice of developing emotional intelligence (EQ) and literacy supports students to build positive relationships, make helpful choices, and act responsibly.



The three habits that students are continuously asked to practice as caring and contributing community members are be respectful, be kind, and be proud. These “three be’s” of behavior are routinely and playfully highlighted with kindness cape, respectacles, and proud pins during school-wide weekly Friday Morning Meetings, which center on social and emotional learning.



Learners develop their EQ skills through the use of a common language (e.g., three be’s), shared tools (e.g., mindfulness), and modeling (e.g., restorative justice). These practices are demonstrated regularly during weekly morning meetings, classroom conversations, and recess conflict resolution training. For instance, when a conflict arises at recess, students learn to take the peace path course of action to restore their relationship, such as using I- statements to take responsibility and express needs, listening to each other without interrupting, and apologizing for any wrongdoing.

Overall, the students are guided to develop the following social and emotional skills:

- Emotional literacy by using coping strategies that name feelings, navigate frustrations appropriately, and practice positive communication skills.
- Empathy and compassion by taking the perspective of others.
- Personal responsibility by using I-statements and being aware of one’s actions.
- Collaboration by cooperating during work and play as well as continuously striving together to resolve conflict.

Empowering the learners with this knowledge, attitudes, and skills support the actualization of the school’s vision each day to be a rigorous, safe, and innovative learning environment.

Science

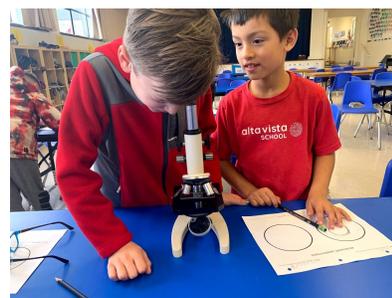
The scientific method is the foundation of the overall curricular approach and is woven within the study of science, engineering, and technology. Through inquiry-based instructional practices, students are guided to generate questions that can be answered through investigation. By continuously asking deeper questions about their observations and the information they find along their exploration, students expand their curiosity and re-examine their initial conceptions.

Teachers facilitate conceptual understanding of increasingly complex ideas by solving problems within a demonstration, experiment, or challenge. Moreover, the scientific understandings are connected to students' interests and life experiences to engage the learners and reveal the relevance of scientific knowledge. By focusing on core ideas in science and engineering, the students have more time to explore each idea in greater depth. Understanding of these core ideas occurs over multiple grades at increasing levels of sophistication.

Curricular themes and essential questions are designed to inspire the budding scientists and engineers to ask questions, generate predictions, explore individually and as a group, make observations, and conduct research. Hands-on experiments and labs offer opportunities for further investigation. Science fairs, expositions, and research projects further enhance understanding by encouraging students to draw on their passions and become experts in areas of interest. The program objectives are to instill dexterity in asking questions; obtaining, evaluating, and communicating information; planning and executing investigations; developing and using models; analyzing and interpreting data; engaging in argument from evidence; and constructing explanations and designing solutions.

Disciplinary ideas are organized into four domains:

- Physical Sciences
- Life Sciences
- Earth Sciences
- Investigation and Experimentation



Fundamental, all-encompassing standards include:

- Students ask questions and conduct investigations using appropriate tools and techniques to gather data.
- Students think critically and logically on the relationships between evidence and explanations.
- Students construct and analyze alternative explanations and communicate scientific arguments.
- Students understand the connection between and among the three main disciplines of science (Physical, Life, and Earth Sciences).

Mathematics

Students develop a rich conceptual understanding, procedural fluency, and real-world application of the following domains:

- Number sense
- Algebraic thinking
- Measurement and geometry
- Statistics, data analysis, and probability
- Mathematical reasoning

Students investigate and explore mathematics within hands-on experiences, such as designing and measuring animal play areas and learning coordinate planes through playing Battleship. Through mathematically rich activities, students expand their problem-solving skills by developing their abilities to recognize patterns, creating representations, making generalizations, and learning to choose tools and strategies to support their reasoning. Critical-thinking and communication skills are strengthened as students collaborate with teammates to share their own mathematical reasoning and constructively critique the arguments of others.

At AVS, students develop a strong, flexible number sense in order to provide the fundamentals needed for problem-solving. By providing students with a variety of meaningful tasks and activities, students gain the capacity to flexibly work with number systems and build conceptual understanding of the different math domains. From here, procedural fluency is developed through classroom activities, such as number talks, games, and puzzles. By way of independent, partner, small group, and whole class learning, students engage in integrated projects to explore problems in depth and discover numerous methods to solve these problems. In addition, students construct viable arguments for solutions with efficiency, accuracy, and flexibility.

The following learning standards from junior kindergarten through fourth grade aim to maintain understanding through fluid, spiraling review, progress along a continuum that prevents gaps in learning, and encourage appreciation of math in real-world application:

- The Number System and Place Value
- Fractions/Decimals/Percents
- Addition and Subtraction
- Multiplication/Division
- Patterns and Algebraic Thinking
- Time and Money
- Measurement Comparison
- Graphing/Charts/Data Analysis
- Perimeter/Area/Volume
- Two and Three Dimensional Shapes and Angles
- The Coordinate Plane

Technology Integration



21st century education requires competency in using technological tools to support the learning process. However, technological tools are thoughtfully used to assist the learning process, not become the process.

Starting in second grade, students practice typing and word processing with tools such as Google Docs. The Scratch program is used to gain a beginning understanding of computer coding. Matific program is used for

differentiated math homework for second through fourth grades. In second and third grades, students become proficient in typing and using their Chromebooks. In fourth grade, technology is more integrated into the students' learning experiences. For example, students use Google Drive for writing and editing their own writing as well as collaborating with their peers in multiple subject areas. They learn to use voice-to-text typing and audio recording software to record radio advertisements or interviews for research projects. Some students use Chrome extensions to produce stop-motion animation clips.



Internet safety is a prime component of whole group lessons. Through the Common Sense Media program, students learn about the impact of leaving a digital footprint online. Only after discussing and learning about internet safety do students use laptops to explore their chosen research projects.

Computer programming is integrated into various courses, creating cross-curricular projects. First graders learn about direction and measurement by programming robots through mazes. Second graders program their own interactive name poems. Third graders use Scratch to demonstrate their knowledge of the rock cycle. Fourth graders create an interactive math game that uses random number generators.

Literacy

The beauty and power of the written and spoken word are fostered to promote the joy of reading and writing. Moreover, students are encouraged to express feelings, ideas, experiences, and questions clearly with purpose and tell stories in sequential order with understanding. Critical-thinking strategies are invigorated and explicitly modeled by activating schema, generating predictions, questioning, making connections, and learning to recognize inferences. This is achieved through an integrative approach along these overarching topics:

- Word Analysis, Fluency, and Systematic Vocabulary Development
- Literary Response and Analysis
- Genre Studies
- The Writing Process
- Written and Oral Writing Conventions
- Listening and Speaking Strategies and Applications

Students learn to communicate orally to a variety of audiences for different purposes; read widely for meaning; engage in the reading process to decode, comprehend, evaluate, and appreciate texts; and use the writing process to create organized compositions with a developed style. Students understand that clear speaking enhances communication, reading involves thinking and constructing meaning, and writing is a powerful vehicle to communicate and share information.

Initially, phonetic spelling is encouraged to promote assurance of encoding skills. High-frequency and sight words are introduced on classroom word walls as students move toward conventional spelling. During this process, students are given tools to expand their understandings of conventional spelling via instruction in morphology, etymology, and phonology. Students explore author studies, poetry, fiction, and expository texts as well as read across genres as they navigate the world of literacy through both imaginative play and real-world exploration. By way of the story, letters, procedural, persuasive, opinion, informational, and research writing, students incorporate the concepts they learn to communicate with various audiences.

Fluency instruction and practice enables students to experience well-orchestrated reading. During guided reading, students practice decoding unfamiliar texts by tracking print, using illustrations, and creating meaning, as they develop and refine a repertoire of strategies. The self-selection of independent *good fit* books within a diversity of literature and informational texts is encouraged.

Social Studies

Social studies systematically combines multiple fields of social science (i.e., history, government, economics, sociology, geography, and anthropology). Integrated thematic lessons expose students to all aspects of human society and demonstrate the interconnectedness of social relationships. The geographic and historical connections between past and current events are explored, ranging from the Big Bang Theory to imagining future societies based on modern developments. Beginning in first grade, students participate in debate, research, analysis, perspective-taking, cause and effect, and citizenship in the following domains, which become progressively complex over the years:

- **History** - create chronological sequence of events; explore significant change; compare past and present life; compare differing perspectives of an event; analyze sources and documented evidence; and generate argument for causes of various events.
- **Civics** - discuss roles and responsibilities of leadership, the application of values and principles, and the process of making rules and laws.
- **Economics** - consider decision-making in dividing resources; exchange of goods and services in the marketplace; and national and global economy.
- **Geography** - understand models and representations, human-environment interaction, human population patterns and movement; and global interconnectedness and exchange.
- **Culture** - reflect on personal identity through patterns of behavior and traditions in family, social groups, and institutions as well as appreciate differing worldviews and belief systems.
- **Research and Presentation** - report on a topic or text, tell a story, or recount an experience with appropriate facts, relevant details, and clear speech at a fluent pace while drawing evidence from reliable sources to support analysis and reflection.



Service learning is also an integral part of social studies to promote civic responsibility and empower students to spark positive change linked to learning goals. For example, first grade students visit the local elder care facility once a month to read and play games with their older friends. Fourth grade students volunteer at a local homeless shelter. Students are encouraged to take initiative, persevere, and realize their vision during service projects. Partnerships with other organizations are formed locally, nationally, and even globally to create meaningful opportunities for students to recognize their potential for contribution and making a difference.

Spanish

The program not only offers exposure to the Spanish language but also to the customs of the Hispanic culture. New vocabulary is introduced in each thematic category, such as feelings, body parts, family members, adjectives, and days of the week. This is followed by lessons in customs and traditions. Students are expected to describe themselves and others, express how they feel, and articulate their likes and dislikes in Spanish, both orally and in writing.



In junior kindergarten through first grade, students learn the vocabulary for colors, numbers, shapes, family members, days of the week, and body parts. This content is introduced and reinforced through fun games, puppet shows, videos, role-playing activities and songs with the music teacher. By fourth grade, students are expected to write full sentences in Spanish to express their feelings and describe characteristics of family

members and themselves. Projects become the medium of learning so that students can work on team-building, collaboration, and cooperation as they continue to practice their writing and oral skills. Below are the main components of the Spanish academic program.

Verbal and Written Communication

Students are exposed to simple commands, questions, statements, and short conversations. By fourth grade, students are exposed to written Spanish, verb conjugation, and project-based learning.

Vocabulary

Initially, students become familiar with the sound of the Spanish language and begin to label and identify the vocabulary. Over the years, previously learned vocabulary is reinforced and introduced as written words.



Cultural Awareness

Students develop an understanding of the similarities and differences between Spanish and English. Important people, customs, and traditions of Spanish-speaking cultures are explored. Key elements of Spanish and Hispanic history are also read and discussed.

Garden and Regenerative Practices

The foundation for a lifetime of environmental stewardship, healthy eating, and connection to nature is developed in the outdoor garden classroom. *Ecological literacy* -- the ability to understand and interact with the environment sustainably -- is learned through games and special projects. Overall, students are better prepared for the world they inherit by



exploring academics through the lens of solutions-based practices that are regenerative for soil, water, and communities.

Vital skills for regenerative living are practiced through units during a weekly garden class. Core curriculum are as follows:

- Nature Connection and Appreciation
- Soil, Composting, and Microorganisms
- Water and Watersheds
- Ecological Design
- Food Systems and Nutrition

- Changemakers and Communities

Students are empowered to serve as the next green leaders through ecological literacy, which is infused into the wider school culture and values in the following ways:

- Zero-Waste Week
- Water Appreciation Day
- Engineering Challenges
- Naturally built cob playground structures made of repurposed materials
- Faculty practices: 100% recycled paper and non-toxic school cleaning supplies

This infrastructure allows students to experience sustainability values and promote a creator culture, rather than a consumer one. Below are some examples of sustainability in action at AVS:

- Outdoor classroom benches and playground structures created with *bottle bricks* (plastic bottles stuffed tight with items that would otherwise be sent to the landfill) and cob (a mixture of sand, clay, and straw)
- 1000+ gallon rainwater catchment system
- TerraCycle program to recycle mylar plastic wrappers in the lunchroom
- Tinker Zone - outdoor makerspace where students are invited to upcycle and make objects from found material



Visual Arts and Tinkering

The fundamental building blocks of art are introduced to cultivate artistic perception, creative expression, historical and cultural context, and aesthetic valuing. Visual art and design instruction are organized to cover the basic building blocks of both skill and idea development. The units are organized into monthly segments for each grade level and culminate in the completion of one or more projects. The units comprise of the following:

- Ceramics
- Digital fabrication/art technologies
- Self Expression
- 3-D Fabrication
- Line
- Pattern
- Color
- Shape/Form
- Value
- Contour and drawing
- Architecture



Additionally, every unit connects to an art movement, artist, or grade level thematic curriculum. The students learn how to articulate artistic perception, which includes building vocabulary and describing works of art using proper terminology, such as 3-D form, contour, and primary and secondary colors.

Students apply the artistic processes and skills using a variety of media to communicate meaning and intent in original works of art. They practice fine motor skills and art making dexterity, such as holding scissors and drawing utensils, attaching parts together, and applying controlled pressure in clay modeling. Students create work using a wide range of materials, such as charcoal, paint, motorized drawing bots, ink, mixed media, clay, metal, and wood. In art making, students embrace mistakes, setting personalized goals, and developing their creative confidence.

Students also analyze the role and development of the visual arts worldwide, noting human diversity as it relates to the arts and artists in a historical and cultural context. Artists studied include Faith Ringgold, Ai Weiwei, Georgia O'Keeffe, Romare Bearden, Salvador Dali, Sonia Delaunay, Matisse, Pollock, Alexander Calder, and Kandinsky. They also examine movements and histories of art, such as the surrealists, the gorilla girls, artists with synesthesia, the pottery traditions of Greece and Korea, and California architecture.

Students assess and derive meaning from works of art, including their own, according to the elements of art, the principles of design, and aesthetic qualities. These are the stepping stones for lifelong aesthetic valuing and appreciation. Students apply what they learn in the visual arts across different subject areas, such as their study of the redwood forest. They develop competencies and creative skills in problem-solving, communication, and time management, which are applicable in any domain. They also learn about careers in and related to the visual arts and its connection and application to everyday life through interacting with art and artists during field trips.

Music

Music class is participatory by design, where students perform and create their own compositions. Using the Orff Schulwerk approach of imitation, exploration, and improvisation, students become familiar with the basic elements of music: rhythm, pitch, form, timbre, and meter.



The first benchmarks are marching or clapping to a steady beat, repeating short rhythmic phrases, and matching two tones in a singing voice. By the time students complete fourth grade, they will be able to perform multipart pieces in a variety of genres and styles from around the world by singing as well as playing pitched and unpitched percussion and recorder. Along the way, students will play games, dance, use body percussion, and perform with

a variety of instruments to practice their musical skills.

Music of various styles and cultures is introduced across the grades, with an emphasis on Spanish language repertoire to collaborate with the Spanish curriculum. Lessons also support learning across others subject areas, such as math (fractions), social studies, and social-emotional learning. Basic rhythmic notation begins in first grade and extends to the following years.

Overall, music is used as a tool to build community. It is woven into many school activities such as weekly singing times in kindergarten and first grade, morning assemblies, winter concert, and graduation.

Drama

The drama classroom is a vital and vibrant place where students learn to tell stories with their bodies, their voices, and their hearts. A central component of the program is the study of theater, which is a dynamic, living, and breathing art. Students develop the vocabulary of theater, such as *actor*, *audience*, *director*, *script*, *warm up*, *troupe*, in addition to stage directions, such as *stage left* and *stage right*. The physical elements of theater help students to control their bodies, focus their minds, and follow directions. The emotional elements of theater help students to identify feelings and how to appropriately express them.



Students also learn how to identify personal characteristics and how to transform their own bodies and voices into different characters onstage. All students work towards developing articulate and confident performance voices as well as projecting proud and charismatic stage presence. Through the collaborative nature of theater, the students learn the value of working together creatively as a group.

They also imaginatively express themselves and perform playful scenarios and stories that they create as a team.

The world of theater teaches students how to be a good audience, practice whole body listening, and empathize through embodying another character. It also instills the value of learning from each other and supporting each other respectfully while others are onstage. Overall, drama provides students with the invaluable life skills of creative storytelling, empathy, teamwork, flexibility, confidence, and positive problem-solving.

Physical Education

The goal of physical education is to provide a fun and imaginative arena where students experience success, acceptance, security, understanding, and self-respect through mindful movement. Students practice safe body actions while working with others to become effective and versatile movers. Students develop locomotor skills (e.g., running, sliding, galloping, skipping), non-locomotor skills (e.g., curling, twisting, stretching, bending, swaying, spinning, swinging, sinking, rising, opening, closing), and manipulative skills (e.g., striking, collecting, carrying, catching, throwing, kicking, dribbling).



The PE program encourages holistic mind, body, and heart connection for a lifelong pursuit of staying active and healthy. In the lower grades, students explore dance, tumbling/gymnastics, and play through games centered on body awareness and personal space. In the upper grades, PE classes start with tai chi warm-up stretches that focus on full circular motion, followed by a team huddle to develop game strategy and foster collaboration. Students also work

on their upper and lower body strength on the infamous Alta Vista scooters.

Throughout the year, various sports games, such as soccer and basketball, are played to instill teamwork and grit. Students also learn the technical skills of the sport. For example, in basketball, students learn to dribble, pass, and shoot with a ball as well as practice control and changing direction. The fitness fun unit consists of a wide range of activities, such as jump rope, juggling, hop-skip, and gymnastics to practice rhythm, speed, self-control, balance, and coordination.



Current Event Presentations

Public speaking is highly valued and encouraged at every grade. One of the regular opportunities to practice this important skill is during current events presentations. From junior kindergarten through fourth grade, students give oral presentations about current events of their own choosing to their peers and parents in class. These presentations encourage students to connect with news from around the world, understand nonfiction text, and translate the information into their own words. Since these presentations are done each year, students become increasingly proficient at finding relevant articles, taking notes on their reading, synthesizing information, and preparing an engaging demonstration to educate others on a topic.

Tuesday through Thursday, each grade conducts current events at the beginning of the school day where one student presents in front of their entire grade with their parents and siblings in attendance. Current events typically start after the second week of school and continue until the end of the academic year. This gives each child multiple opportunities to present.



The students' five minute presentation is followed by audience questions and compliments. Students are encouraged to use visual aids (e.g., trifold with pictures, images to project under a document camera, Google Slides) to accompany their talks. Students are also trained to stand with a calm body, speak clearly and loudly, and make eye contact with the audience. Where developmentally appropriate, students may write speaker's notes for themselves and to refer to them when needed during their presentations but discouraged from reading off their notes during the entire event.

Research Papers and Projects

Research projects enable students to pursue in-depth investigations into a topic of their interest. In so doing, they learn how to identify reliable references, take notes, and synthesize information from different sources. Their investigation culminates in writing a research paper, which teaches students how to form an introduction, answer essential questions, frame an argument, support key ideas, and craft a conclusion. In this process, students practice writing in complete sentences, using transition words effectively, and creating well-organized paragraphs. Once the papers are written, the students present their work to others in a clear and innovative way. For instance, the third grade students presented their research projects on famous pioneers by staging a living museum, whereby the student dressed and acted as the explorers they researched, painted a background to provide context for the exploration, and answered questions and gave information to parents and fellow students who visited their stations.



Second through fourth graders conduct their own research projects once a year. Each grade uses a theme that guides their research, which is often based on the science and/or humanities curriculum. Examples of past themes include the California Gold Rush, changemakers, national parks, and San Francisco landmarks. Typically, students will choose from a range of options given by their teachers that fit the grade level theme.

Though more than one student may have the same topic, students conduct their research and write their papers independently.

Although research papers are written individually, the project presentations may be performed in groups. That is, students may work independently or in groups to create interactive games based on their topic, create slideshows, dioramas, or other visuals.



Science Experiments and Fairs

Science fairs play an integral role in building students' confidence in finding answers to questions of their interest and developing proficiency in the scientific method. Preparing for the fairs also help students to learn how to communicate clearly, both verbally and in writing about their scientific process and findings. Furthermore, the science fairs require students to manage their time in order to complete a large scale independent project by a certain deadline.



First through fourth grade students conduct their science exhibitions every year. For four to six weeks, the students practice the steps of the scientific method, formulate their testable questions, make prediction/hypothesis, test their hypothesis, perform data collection and analysis, and arrive at their conclusion.

A common question that arises among the audience during the presentations is *What is a testable question?* A testable question is one that can be answered through hands-on experimentation (e.g., direct observation, measured with scientific tools) by the student. The key difference between a general interest question and a testable question is that testable questions involve changing one thing to observe or measure the effect on another item. This means that a testable question contains two parts: an independent variable (changeable by the student) and a dependent variable (measured by the student in the experiment).

Testable questions follow this format: How does changing the independent variable affect the dependent variable?

An example of an untestable question is *How do rockets fly?* The testable version of this question would be, *How does changing the shape of a rocket's payload (pointed nose of the rocket) change its flight?*

The science fairs are presented to parents, other students, and faculty. Each student makes a display to showcase the steps involved in their experiment and practices explaining these steps to others without reading off of their board.



Engineering Challenges and Rube Goldberg Machines

Engineering challenges are the hallmark of hands-on and experiential learning at AVS. A challenge comprises of a problem or provocation and a number of constraints, such as specific materials or lack thereof. A metric (e.g., time, weight, distance) is used to determine the winning design. An example of an engineering challenge is to design a wind dispersed seed that flies the farthest on fan-created "wind." The materials/constraints given include one bean that acts as the seed, adhesive (e.g., tape, glue), flight device/wings (e.g., piece of paper, tissue paper, thin plastic film), and scissors to shape the flight device/wings. A student's model of a wind dispersed seed is then tested by dangling it at the center of a standing fan to simulate a seed hanging from the plan, releasing it to let it be carried by the fan's "wind," and measuring the distance the seed travels once it lands.

Every grade participates in the engineering challenges, which are proposed every month by a teacher throughout the year during monday morning meetings. Students are encouraged to design prototypes, test, and iterate their solutions over a few weeks prior to the engineering challenge presentation and winner announcement, which is held during a monday morning meeting. Through attempting repeated challenges, students learn to not fear mistakes, fail forward, take feedback, celebrate risk-taking, innovate, and become fascinated with how things work and are connected.



An annual engineering tradition at AVS is building a Rube Goldberg machine -- a contraption that uses a chain reaction to teach the concept of cause and effect. The students carefully observe the cause and effect relationship, make necessary adjustments accordingly, and continually test until the desired outcome is achieved.

This challenge also encourages students to tinker with a variety of simple machines, namely inclined planes, levers, pulleys, and wheels and axles. Building such a machine requires persistence, resilience, flexible thinking, and creative problem-solving. Creating these contraptions in pairs instills teamwork skills, such as listening to and incorporating others' ideas, patience, taking turns, and clearly articulating one's own needs and ideas while meeting those of someone else.

The machines grow in complexity as students advance through each grade. In junior kindergarten through first grade, the process focuses more on exploration and less on the final product. In second through fourth grade, students undergo one to two-weeks of trial and error during the building process before presenting their final machines to parents either in person or through a video compilation.

Assessment and Reports

Assessments continually inform instruction and curriculum development. Pre, post, formative, and summative assessments are scheduled throughout the academic year. Following each assessment, data is collected and analyzed to measure the learning growth of a student, inform differentiated grouping, and support any necessary interventions. An assessment is used to generate a clear narrative of a student's progress within each trimester and across the academic year.

An evaluation scale is used by teachers to determine a student's academic and social performance of various skills within each subject area. Teachers use the evaluation scale when observing and reflecting on a student's output during daily activities, work products, projects, and class discussions. When a trimester ends, teachers gather evidence of a student's progress between the two trimester periods. Throughout the year, teachers closely capture student progress in reading and math fluency through standardized one-on-one assessments, such as reading inventories and math tasks. These assessments are administered three or more times a year to provide clear data on student progress over time and calibrated with national grade level norms.

Evaluation Scales

Academic Evaluation Criteria 2019-2020

Mastery

Student consistently demonstrates an in-depth understanding of the targeted skills and content by completing *advanced* applications of the subject.

Proficient

Student demonstrates a proficient level of comprehension for the targeted skills and content by completing applications of the subject.

Emerging

Student demonstrates an understanding of the foundational material that supports the targeted skills and content, but is still working to demonstrate comprehension of the material.

Novice

Student demonstrates an understanding of the foundational material for the class with support, but has yet to independently demonstrate comprehension of the material.

Introductory Exposure

Learning target has been exposed by not been assessed or evaluated yet.

Social and Emotional Development Scale 2019-2020

Often - Student often demonstrates...

Sometimes - Student sometimes demonstrates...

Rarely - Student rarely demonstrates