Brickton
MONTESSORI

Upper Elementary Curriculum Overview (4th – 6th grade)

Language

The Upper Elementary language program is designed to develop student's reading comprehension and writing skills. By increasing students' understanding of vocabulary, grammar concepts, editing skills, and writing styles, they are able to analyze text and produce a variety of written works successfully.

Reading

In the Upper Elementary program, students begin to explore many levels of reading comprehension. Fact-based understanding is the foundation for comprehension and is where we begin our curriculum. Students in this stage learn to identify characters, settings, and plot. They outline story lines in fiction writing and use text features to analyze non-fiction passages. From here, they create simple charts to represent problems and solutions within writing and compare and contrast information found in short passages. Evaluation is the next level of understanding, where students begin to move into more abstract thinking, using prior knowledge to draw conclusions. Summarizing, character exploration and analysis of solutions or outcomes are the key components of evaluating texts. This asks students to use the facts presented to draw logical or alternative conclusions to text passages. Finally, the students focus on their inferential skills. They are asked to make logical predictions, use text support to justify responses and interpret the tone of the writing and the author's reason for the text.

Students develop these skills using both fiction and non-fiction texts. Weekly literature discussion groups allow students to meet with a small number of peers and a teacher to discuss novels of their choosing. Each student within a particular group reads the same novel and brings their understanding of the reading to the group. Through discussion, students are able to hear one another's interpretation of the chapters and develop a deeper understanding of the story. Students also work through short non-fiction passages independently throughout their work week. They use two comprehension series sets to accomplish this activity: Reading about Science and Reading Comprehension in Varied Subject Matter by Jane Ervin. At times, an additional group is formed with students who need more extensive comprehension practice using the Taking the High Road to Reading, Writing, and Listening series. This group will work in pairs to read a variety of short text passages and come together as a larger group to discuss their understanding of the reading. It is often helpful for students to read aloud and discuss the passages immediately in order to gain better comprehension.

Grammar and Vocabulary Development

Grammar and vocabulary activities in the Upper Elementary program are practiced multiple times per week. Word study activities center on the concepts of synonyms, antonyms, homonyms, compounds, and the etymology of words. Students work independently with these exercises, moving through each concept with increased levels of difficulty. Great Source

Vocabulary for Achievement and Sadlier-Oxford Vocabulary Workshop workbooks complement our word study and grammar lessons by breaking up new vocabulary in similar components. These workbooks are used weekly, beginning with a lesson at the start of the week. Teachers introduce the lesson, and students work through activities with the words for the remainder of the week. They are encouraged to incorporate these words into their writing assignments as well.

Grammar lessons build on students' prior knowledge from the Lower Elementary program. As students enter our program with an understanding of the nine parts of speech, they are now exposed to more detailed types of speech. For instance, the students' work on the advanced concepts of verb tenses, rather than simply identifying the word as a verb. This helps students when they are asked to diagram and dissect sentences written by others, including literary passages from famous novels which we do weekly. In addition, older students work with more complex grammar concepts, such as sentence analysis, gerunds, appositives, participles, and linking and intransitive verbs.

Written Communication

In the Upper Elementary program, we work on various structures of writing. Students continue their mechanics work from the Lower Elementary program with proper punctuation, capitalization and usage of words. They practice editing skills both in isolation during lessons and when creating finished written products. To support accurate spelling, we employ the Spellwell workbook series for students who require additional practice with spelling rules and phonemic patterns.

During weekly writer's workshop activities, students begin to develop strong pieces of descriptive, narrative, and persuasive writing. Through engaging lessons, they understand the purpose of each type of writing and how to effectively use it. Six Traits of Writing are implemented in the Lower Elementary program, and these traits are regularly referred to during workshop sessions. Within each piece of writing, students are expected to participate in every step of the process. Initially, students will complete pre-writing activities, involving brainstorming sessions with their peers to fill out graphic organizers. As this work concludes, students are ready to begin a rough draft for the assignment. They work alone or in pairs to create a solid first attempt at the writing. The editing process is often the most extensive portion of the writing cycle. Students will often complete several drafts before creating a publishable finished product.

Research writing takes on more depth in the Upper Elementary program as students work for several months on one cultural project during the second half of the school year. Our Cultural Fair research begins with students choosing individual topics and creating research questions for that topic. At each stage of the research, students meet with a teacher to check-in about the process. Teachers, at this initial stage, might ask students to dig deeper into their questioning or move on to see if enough resources can be gathered for the research. Once students have their resources, they are asked to take notes on the information they are gathering. Notes are then organized, with adult assistance, to begin writing a rough draft. Part

of this organization is to create an outline that will later be used as a table of contents for their finished research. Students go through many drafts with teacher support in order to reach conclusion of the writing process. As students master various components of this process, they are introduced to more parts of research, such as bibliographies and end notes. The end result is a formal paper, supported by a visual aid, to present their research.

Oral Communication

Oral communication is a daily part of the Upper Elementary environment. Students participate in discussions with small and large groups of peers during group meetings, lessons, literature discussions and independent work time. We help students to develop language that is appropriate to the setting and allows them to express their thoughts effectively. We do this by expecting students to take turns speaking, use precise vocabulary and listen devoutly to peers during discussions. These same skills are practiced during conflict resolution, along with the use of "I-statements."

Public speaking is a relatively new skill in the Upper Elementary program, as students present Cultural Fair research to the school body at the end of each year. Prior to this day, older students work with younger ones to help them develop more strategies with this task. As the Cultural Fair date nears, the students will practice in front of the entire class and their teachers, receiving feedback upon completion. Students are assessed on this skill as part of their larger grade from the Cultural Fair day.

Mathematics

In our Mathematics curriculum, there is a strong focus and reliance on moving from concrete Montessori materials to abstracting ideas and concepts. Students are able to experience concepts through not only visual and auditory activities and lessons but also kinesthetic activities, which strengthens understanding, and ultimately leads to mastery. This approach allows students to be introduced to advanced concepts early on and gives them time to practice with the materials to gain mastery.

Numeration

In the Upper Elementary program, we begin our work with numeration by introducing students to expanded notation and manipulation of whole numbers through rounding and estimating. Students work through activities that allow them to practice these concepts before moving on to explore them with decimal numbers. Decimals are a foundational part of our curriculum and provide the students with another way to express a part of a whole, rather than just as a fraction. In our program, fractions and decimals are used interchangeably, and students work with materials as well as abstractly to make the connections between the two forms. More advanced work takes place in the Upper Elementary in numeration with integers. They are introduced to nomenclature such as rational, irrational and real numbers. They work with positive and negative numbers, both operationally and in word problems. Additionally, concepts of ratios and percents are introduced to our older students.

Computation/Operations
The Upper Elementary students begin their work reviewing all four operations with whole numbers. Students usually enter the environment with addition, subtraction and multiplication facts mastered, along with abstraction of at least addition and subtraction operations. Younger students generally pick up on abstract understanding of multiplication and long division problems relatively quickly, having worked regularly on these concepts with concrete materials in the Lower Elementary environment. In addition to whole number operations, students work through lessons that are devoted to the understanding and mastery of addition, subtraction, multiplication and division of fractions, decimals and integers. These concepts are usually completed by sixth grade, allowing many students the opportunity to work with more advanced pre-algebra material. Lastly, students are introduced to simple order of operations. They learn the rules and order for exponents, parentheses, multiplication/division, and addition/subtraction.

Measurement
The Upper Elementary students work on measurement within the context of other areas of the mathematics curriculum. Within the Geometry curriculum, students learn the differences between standard and metric units for length, mass, and volume. They are given opportunities to work in both systems and taught simple conversions. Students also become adept at measuring angles with a protractor, in order to solve geometric problems. In addition, older students work through formulas for area and volume using materials initially, in order to understand how these formulas relate to one another. Students end their work in Upper Elementary using these formulas to solve practical area and volume problems.

Graphing is used in the areas of mathematics, language and cultural subjects. Students will create graphs to compare data, analyze trends over time and express percentages. They also work to analyze graphs through direct instruction with graphing exercises and within articles found in our news magazines for homework.

Problem Solving
Word problems are a regular part of the Upper Elementary curriculum as students work with problems that contain multi-step directions and extemporaneous information. Students need to analyze the information to determine what is necessary and how to proceed with what is given. Initially, they may only do problems that deal with whole numbers and have only a few steps. As they become more familiar with different types of numeration, word problems may include fractions, decimals, percentages, and integers.

Our work with pre-algebraic concepts also falls under the heading of problem solving as we create binomials and trinomials with concrete materials. As the students begin to determine the formulas involved in these problems abstractly, we present lessons that show the relationship between these formulas and the process for solving square roots of large numbers. This sequence of lessons is repeated to find formulas related to cubing and cube roots.

Patterns and Relationships
In the Upper Elementary curriculum, we begin our work with patterns and relationships by continuing the work of factors and multiples from the Lower Elementary program. Students add on to this initial understanding by learning about primes and composites, in order to practice with concepts of prime factorization and greatest common factor. In addition, students learn to find least common multiples. One strategy that is used for determining both GCF and LCM is to begin by finding the prime factorization for each number. Students work with this strategy in order to solve these problems using large numbers.

Younger students also find patterns in simple multiples to one hundred in order to realize rules of divisibility. Once the pattern has been determined, students create a working rule with the teacher to use for practical applications. All students are presented lessons in making comparisons between decimal and fraction numbers, learning how to use the two interchangeably to solve problems. These comparisons are expanded to include percents, once a student shows readiness for these presentations. Finally, older students devote time to working with different base systems as they learn how to convert to and from base 10 from other bases. In general, this advanced work takes place in the student's last year, as the complex nature of this concept requires the prerequisite of other experiences with comparisons and observing relationships between numbers.

Geometry
The geometry curriculum in our program begins with the review of angles and different types of lines. From here, we divide our work with two-dimensional shapes into two categories: closed, curved figures and polygons. Students learn that polygons are any closed, straight-lined figure, and we begin in-depth work with the study of triangles. We continue our exploration of polygons through decagon, before moving on to circles. After this work has concluded, we examine the concepts of congruency, similarity and equivalency in preparation for our work with area and volume formulas. Within each of these studies, concrete materials are used initially to present the concept before students move on to abstract understanding of how geometry is used in everyday life.

Cultural
In our cultural subjects, we hold true to Maria Montessori's idea of Cosmic Education. We introduce concepts as "big picture" presentations to spark an interest in the students and encourage them to ask questions and further their study by completing research.

Science
In the Upper Elementary program, we foster scientific inquiry in several ways. We continue our studies of botany and zoology from the Lower Elementary level by delving deeper into the kingdom charts to understand how plants and animals are classified by scientists. In order to do this, we look at a variety of characteristics within individual species that come together to create common attributes with other species. In the Upper Elementary, we also expand this work to include the other three kingdoms of living things: fungi, monera, and protista. Similar

work is done with these three kingdoms in order to understand their commonalities and how they are different from animals and plants.

The students devote a significant amount of time to the study of the human body in our program as well. We begin with the Montessori Great Lesson entitled the Great River. From this impressionistic story, we begin to look at the internal body systems and how they function independently, and in tandem, to keep our bodies working properly. Our studies are enhanced by our news magazine Science World by Scholastic, as it has many engaging articles about the functions of the human body and issues of health and disease. Every other year, the students also take a trip to Robert Crown Health Center to participate in a puberty talk. Boys and girls receive independent lectures about the changes their bodies will undergo over the next few years and how to continue to take care of themselves.

We begin to work more deliberately with physics and chemistry in the Upper Elementary program, using this terminology with the students. With regards to physics, students participate in hands-on experimentation in order to understand the concepts of kinetic and potential energy, inertia, forces, heat and light energy, and magnetism. Through these experiments, we try to show students the importance of accurate measurements, careful observations, and precise note-taking. We teach them the scientific method and how to use variables to adapt the experiment. For our chemistry component, the students learn about the parts of an atom, the classification of the periodic table, elements, compounds and molecules. The curriculum incorporates educational videos and identification of mystery elements as some ways to gain understanding of advanced concepts.

The science curriculum is supplemented each year by a week-long overnight trip to Nature's Classroom Institute in Wisconsin, where students participate in field group experiences ranging from dissections to pond studies.

Social Studies

Our geography and history curriculum cover a range of topics that are often interrelated, forming a deep understanding of time and place. In physical geography, students continue their understanding of land and water forms by creating continental maps which include major features of the land. These might include large rivers, mountain ranges, lakes, seas, and deserts. In addition, we talk about biomes and the attributes of each ecosystem. Students also practice locating countries and their capitals onthe different continents, along with an added study of American states and capitals. Upper Elementary students also work generally with the atlas, practicing with lines of longitude and latitude in order to find locations within the resource.

Cultural history and geography in the Upper Elementary is studied through planned and spontaneous lessons. In the Lower Elementary, students begin to explore notions of the fundamental needs of people. We continue this work by exploring these needs in detail within a specific ancient civilization. For example, we may spend one year of our three year cycle researching the interworking of Ancient Egypt, developing an understanding of how they met

their needs for shelter, food, clothing, transportation, defense, and art. During another year in the three year cycle we may study the needs of our modern cultures, as we focus on studies of world religions, types of government, and international trade. The final year of the three year cycle is devoted to major concepts in our own country's history. This year, we study Native American culture, as well as the Europeans that founded our country. Still using the foundation of fundamental needs, we explore migrations, revolutions, and expansions in U.S. history.

The social studies curriculum is supplemented each year by a week-long overnight trip to Nature's Classroom Institute in Wisconsin, where students participate in evening simulations exploring real world social issues, like immigration, slavery and poverty.

Specialty Classes

Spanish

Students in the Upper Elementary program receive two to three small group lessons in Spanish weekly. The Spanish curriculum includes speaking, reading and writing Spanish as well as cultural appreciation. Students study vocabulary, basic grade level grammatical concepts, conversation, poetry and folktales, and Latin American cultures and countries. They are assessed on written work, quizzes and tests, as well as observations during lessons.

Music

Students receive a weekly lesson in music with a music specialist instructor, using the Orff Schulwerk method. Within this method, students develop movement skills, learn musical terminology, gain more experience with barred instruments and continue work with recorders. In addition, Upper Elementary students participate in a chorus class once per week that culminates in an end of the year choral concert. They also have the opportunity to take instrument lessons and participate in band twice a week.

Art

Students are taught by an art specialist, and they concentrate on working with a variety of media, including pencil, crayon, pastels, watercolor, and clay. They learn the characteristics of each medium and how to use materials responsibly and to their full effect. Examples of each medium by practicing artists support understanding of the uses of various media. Students are taught technique including shading, lining, contour, color and lighting.

Physical Education

Physical Education covers gym, health and safety. Classes with our physical education teacher focus on team building, fitness, and sports skills. Our program may include additional on-site and off-site activities, which in recent years have included yoga, zumba, tae kwon do, swimming, ice skating, dancing, and improvisation.

Health and safety is integrated into the daily experiences of the classroom. Presentations and exercises that focus on personal health, welfare and safety are given by classroom teachers, guest presenters and field trips. Topics include healthful eating, cleanliness, the importance of sleep, germ reduction and street crossing safety.