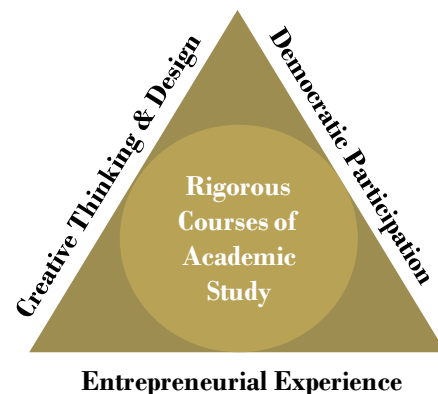


# Plan for the Montessori, I.B. Middle School

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## Introduction

Educating today's middle school students involves knowing how they learn as individuals and as adolescents. We must also understand the kind of world they will inherit. We live now in an ever-changing future. Given the scope of global-wide, technological and institutional change, we cannot know with certainty the kinds of challenges today's students will meet during their adult years. We do know the middle schools we attended will not sufficiently ready today's students for their future.



A Montessori middle school prepares students for life, and this includes high school, college, work, and citizenship. A Montessori middle school combines Montessori philosophy, current child and adolescent developmental research, projected 21st century workplace skills, and national standards to provide the learning activities and skills students need during their middle school years and for success after their graduation.

An International Baccalaureate Middle Years Program reinforces, enhances, and expands these goals, adding an international focus and global framework to the school's rigorous academic curriculum. Established in 1994, the International Baccalaureate Middle Years Program is both a stand alone program and a continuum of IB Primary Years Program and Diploma Program. Recognized for its academic rigor and international education focus, the non-profit IB educational foundation supports students in over 3000 schools located in 139 countries. The goal of all IB's programs is to "help develop the intellectual, personal, emotional and social skills to live, learn and work in a rapidly globalizing world" (*IB website, 10/20/10*).

The International Baccalaureate Middle Years Program supports Montessori's interdisciplinary approach to curriculum and provides professional development opportunities and access to a global community of teachers and learners dedicated to engaging, challenging, and meaningful international education. The MYP's three fundamental concepts, holistic learning, intercultural awareness, and communication (*MYP: From principles to practice, 2008*), resonate well with the practices and pedagogies of a Montessori education. In addition, the IB MYP's five areas of interaction – approaches to learning, community and service, health and social education, environments, and human ingenuity, help to frame and direct the interdisciplinary practices inherent in a Montessori Middle School program.

The requirements for successful living in the emerging 21<sup>st</sup> century necessitate adopting new approaches to learning. We should not be satisfied with learning defined narrowly as a test score given for memorizing forgettable information. Instead, we must understand how individuals learn. We must understand and help adolescent students satisfy their developmental needs. These should inform our decisions about the academic rigor and the opportunities for student creativity and responsibility we will offer. Students in a Montessori, International Baccalaureate middle school must engage in real and pressing global challenges. They must think creatively, design and implement workable solutions, participate in democracy, and act as entrepreneurs.

Through rigorous study and experiential learning, middle school students will develop a comprehensive knowledge of the world, grapple with complex issues and problems, embrace civic responsibilities, and engage with people who are different from themselves.

## ***The Middle School Years***

During adolescence, a child's brain and body reorganize into those of an adult. Becoming newly aware of oneself as a member of a larger society is a central preoccupation of the young adolescent. A Montessori IB middle school supports this natural process and guides students with academically challenging and developmentally appropriate experiences. Dr. Maria Montessori wrote, *"success in life depends in every case on self-confidence and the knowledge of one's own capacity ... The consciousness of knowing how to make oneself useful, how to help mankind in many ways, fills the soul with noble confidence ... The feeling of interdependence must be bound to the power to be self-sufficient."*

If there is one compelling need during adolescence, it is to belong – and contribute - to a community. The middle school community consists of several levels. Most immediately, the middle school is an academic community of classmates engaged in both individual and collaborative learning. Young adolescents require a place of their own; a place where they can develop responsible ownership. When they engage in this kind of place, middle school students:

- Become vibrant, self-sufficient, active learners.
- Develop strong academic habits and expand their knowledge base.
- Articulate their growing personal and global awareness through varying modes of self-expression.
- Engage in field experiences including land-based study and service to others.

The middle school requires, however, more than the classroom. Middle school studies occur throughout the school. In a Montessori IB middle school, all participants – students, parents, teachers, administrators – are critical contributors to an engaged community of learners. Every teacher and staff is a potential member of the middle school faculty. Students may be seen planning and implementing school gardening as a part of their biology studies. Students might observe and work with younger children as a part of their psychology class. The middle school is larger still as students utilize local, regional, and global resources. Many learning activities take place through community partnerships and in a variety of settings such as university campuses, museums, industries, government centers, art studios, and non-profit organizations.

In each of these communities, students engage in purposeful, meaningful studies and contributive work. Dr. Maria Montessori postulated that real achievement will build a personality readied for the challenges of our interdependent, global society.

## ***Courses of Study***

Our Montessori IB Middle Years Program provides a framework of academic challenge that encourages students to embrace and understand the connections between traditional subjects and the real world, and become critical and reflective thinkers. The curriculum consists of eight subject groups. These subjects are integrated through five areas of interaction. These five areas provide a framework for

learning within and across the subjects. The subjects of study are English, Spanish, humanities, sciences, mathematics, arts, physical education and technology. In the final year of the program, students also engage in a personal project, which allows them to demonstrate the understandings and skills they have developed throughout the program. The five areas of integration are called Approaches to Learning, Community and Service, Human Ingenuity, Environments, and Health and Social Education.

Each subject includes skill-based fundamentals (reading, writing, and mathematics), an experiential science curriculum, theme-based studies of the humanities, daily lessons in a second language, and extensive involvement with health & fitness, music, theatre, technology and the visual arts. The courses outlined here are for students enrolled in grades seven and eight.

While studies in mathematics and writer's workshops may occur at each individual's pace, the sciences and social sciences are integrated across a two-year course cycle. Life and Environmental Science and American History are offered during year one. The physical sciences (including Chemistry and Earth Science) and International Studies are offered during year two.

The classroom, as noted before, is the central location of study. The entire school campus along with area libraries, museums, theaters, and arts centers serve as extended learning environments.

### Mathematics

The sequence of math courses includes pre-Algebra, Algebra I, and Geometry. Students enroll in these courses based on readiness. Each course involves investigations, interesting and challenging problems, and discovering patterns and making connections to science, history, and literature. Making connections builds mathematical thinking and new understanding. Without connections, too many students struggle to learn isolated concepts and skills.

During the middle school years, topics of mathematics study typically include methods of problem solving; number sense (integers, rational, and irrational numbers); patterns, relations, and functions; geometric representations of algebraic ideas and algebraic representations of geometry; and statistics and probability. Additional topics examine economic fundamentals and are intertwined throughout the two-year cycle. Topics include checkbooks, profit/loss statements, balance sheets, wages, credit, and values-based decision making.

### Science

Middle school science takes place during alternating years: a year of Life and Environmental Science and a year of Physical, Chemistry, and Earth Science. Life and Environmental Science topics may include microbiology, ecology, comparative and human anatomy. Physical and Earth Science topics may include motion and forces, chemistry, machines, astronomy, and geology.

Inquiry and experimentation is central to these disciplines. While conducting an inquiry, students describe objects and events, ask questions, construct explanations, test their explanations against current scientific knowledge, and communicate their ideas to others. Students engage in science by *being* scientists; contextualizing their inquiries in real world problems, collaborating with community partners, and sharing findings with public and professional communities. A goal is for students to discover connections between mathematics and science, history, and literature. The ability to make these connections enriches a student's understanding of otherwise isolated concepts.

### History/Humanities

History/humanities thematic topics also take place during alternating years: a year of American History and a year of International Studies. Thematic topics are drawn from the disciplines of Anthropology, Economics, Geography, Government, and Psychology. Topics may include, for example, pedagogical studies of place; the historical origins, practices, and institutions of democracy; non-democratic ideologies; economic requirements for freedom; energy sources and geographical pipelines; global warnings; emerged populations – African nations, China, and India; and technological innovations.

### Writer's and Literature Workshops

A goal of the middle school writing program is to increase communication skills through a variety of genres. Students also complete individual and small-group lessons in spelling, vocabulary grammar, punctuation, and sentence/paragraph structure.

In the Literature Workshop, students read individual and class novels, poems, plays, and essays. Selections are multicultural and include classic adolescent literature and contemporary works that emphasize diversity and a variety of global challenges. Students also participate in Socratic seminars.

### Second Language

Studies of a second language during the middle school years further experiences begun during the early childhood and elementary years. A goal is for students to become fluent speakers, readers, and writers in a second language. If possible, an exchange program should take place with native speaking students of the second language.

### Micro-Economies

Developing and running small business connects, noted Dr. Montessori, the young adolescent to the supreme realities of social life. Learning to think and engage as an entrepreneur is an essential 21<sup>st</sup> century skill. By developing and managing a micro-economy, students learn about business plans, initial investments, supply chains, marketing, customer relationships, sales, and banking. Over the years, middle school business have included cooking and selling breakfasts and lunches, growing and selling farm produce, and manufacturing an array of products such as soap, jewelry, pottery, and books.

### The Arts

The arts are an essential component of a Montessori IB middle school. Opportunities for personal self-expression are in keeping with the developmental needs of the young adolescent. Art classes might include watercolor, drawing, graphic design, improvisational drama and drama production, dance, weaving, pottery, and woodworking. Music classes may include keyboards, guitar, songwriting, performance, and music appreciation. The arts are also incorporated in the other subjects.

### Health & Fitness

Health and fitness programs offer an understanding of wellness, nutrition, and participating in exercise classes. There may be a variety of classes depending upon the school's resources; for example, yoga, organized sports, and outdoor activities such as running, biking, and horseback riding.

## ***Instructional Experiences***

A Montessori IB middle school provides a variety of instructional approaches. Recognizing students' need for diverse instructional and assessment challenges is central as students are guided to become responsible for their own learning and challenged to make connections between topics as well as critically assess the value of information.

### Guided Instruction

Students further their academic skills through guided instruction and learn to, for example: apply mathematics and scientific reasoning; read and study a text; take notes; construct an argument; plan and organize a research paper; give an engaging oral presentation; demonstrate mastery; prepare for and take exams. Students also further their skills as leaders and learn to: identify a community need; present a vision of a solved need; identify needed resources to address that need; develop a business plan; and implement the plan and supervise its progress against achieved goals.

### Seminar Inquiry

In a weekly seminar, the class reads and explores ideas through a Socratic discussion. Topics include enduring philosophical questions, novels the students have read as a class, current political issues, and life issues faced by adolescents. A student or teacher acts as a facilitator as students share ideas, analyze multiple-meanings of text, offer factual support for their interpretations, and paraphrase and then respond considerately to each other. The Socratic seminar is a crucial part of the middle school because it develops critical thinking and clarity of expression.

### Scientific Research

Students learn to design and conduct experiments, observe and collect data, analyze data using scientific inductive and deductive reasoning, and present findings. These experiences can occur in both natural and laboratory settings.

### Individual Lessons

This approach occurs in every aspect of the program. One student, during an open period, may want an individual lesson on how the slope of a line predicts exponential population growth; another student may request help with organizing a business plan.

### Peer Coaching

In a Montessori middle school, students typically work in small groups. They contribute to and support one another's learning as project collaborators, peer editors, business partners, and community service providers.

### Technology

Technology is integrated into all aspects of the program. In today's world, students become fluent in, for example, word processing, spreadsheet analysis, database construction, website design, web-based communication, and digital photography, film, and music.

### Assessment and Student Outcomes

To assess learning, the program combines teacher assessment and student self-evaluation. A variety of means are used including projects, oral and written presentations, quizzes, tests, and portfolio activities.

Standardized tests may supplement this process. Student-led parent/teacher conferences take place two or three times each year.

## ***Field Experiences***

Experiential learning is a fundamental component of a Montessori IB education. Young adolescents naturally seek to contribute to others. Opportunities include community service, small businesses, internships, and land-based study. In each of these, students can see the results of their direct, hands-on activities.

### Community Service/Apprenticeships

Montessori middle school students should help with school events and care for its infrastructure. Middle school students should also complete at least 50 hours of volunteer community service a year.

### Land-Based Learning Experiences

An essential component of the Montessori philosophy for the middle school is the concept of the *Erdkinder*—“children of the earth.” Montessori envisioned middle school studies taking place in a rural setting in which students develop a sense of place, participate in real-life problem solving, and see their contributions improve the land around them. Although Montessori middle school programs today are located in a variety of settings, student work that enables them to make real social contributions to their learning and surrounding communities is essential. The Middle School students may, for example, take on managerial positions and engage in projects such as designing a barn, planning the garden, and eventually building a micro-economy based on the land. Ideally, these activities will occur at the same off-campus location, several times during the school year.

## ***The Schedule***

The school year may be divided into quarters of seven or eight weeks. The school year begins with a one week, off-campus program; this should occur at a place where students will also come back to at the end of each quarter. This is “their place.” While there, students engage in place-based studies involving the humanities, sciences and the arts.

A weekly schedule includes:

## A Middle School Daily Schedule

	Monday	Tuesday	Wednesday	Thursday	Friday
8:15 -8:30	Community Meeting	Community Meeting	Community Meeting	Community Meeting	Council Meeting
8:30 – 11:30 3 morning classes	Math Spanish Writer’s/Literature Workshops	Math Spanish Writer’s/Literature Workshops	Math The Arts/Music Health & Fitness Book Groups	Math Spanish Writer’s/Literature Workshops	Math Science or History Socratic Seminar
11:30 – 12:30	Lunch/Recess/Reading	Lunch/Recess/Reading	Lunch/Recess/Reading	Lunch/Recess/Reading	Lunch/Recess/Reading
1:00 – 3:15 1 afternoon extended class block	Science or History/Humanities	Science or History/Humanities	The Arts/Music Health & Fitness	Science or History/Humanities	Economies & Community Work
3:15 -3:30	Cleaning/Dismissal	Cleaning/Dismissal	Cleaning/Dismissal	Cleaning/Dismissal	Cleaning/Dismissal
3:30 – 5:00	To be developed: Afterschool Studios				

### Notes:

Science and History meet for alternating two- or three-week periods.

Classes for the Arts may include watercolor, drawing, graphic design, improvisational drama and drama production, dance, weaving, pottery, and woodworking. Music may include keyboard, guitar, songwriting, performance, and music appreciation.

Health & Fitness include wellness, nutrition, and exercise; classes may include yoga, organized sports, and outdoor activities such as running, biking, and horseback riding.

Afterschool studios offer additional study and experience in the arts, health, and fitness subjects.

## Summary

Middle school students desire a place of their own in which they can contribute to others. This involves making, implementing, and learning from their plans, decisions, and mistakes. They have already learned to make choices. A developmental task of young adolescence is to become mindful of and anticipate the consequences of their choices. These experiences open a new level of adult-like independence.

Early Montessori education emphasizes the careful construction of environments where children are appropriately challenged, engaged, and provided opportunities to develop independence and build academic, social, and intrapersonal skills. The Montessori Middle School continues this process by providing adolescents environments where they can begin to participate in their classroom, school, community, and world as engaged, productive citizens. Students continue to develop a sense of responsibility and ownership of their own learning, supported by a community of learners and curriculum that is situated in real, meaningful, purposeful contexts.

A Montessori IB middle school offers its students much more than a weekly schedule and rotation through academic courses. The Montessori *Erdkinder* approach emphasizes the immediate world students inhabit outside their classroom doors. The IB Middle Years Program adds a global context and framework to students' academic work that makes their locally relevant and meaningful education also relevant on a global scale. Students become adept at understanding and engaging with the complexities of life on both a micro and macro level.

During adolescence, students are compelled to contribute to their social community. A Montessori IB Middle School program provides appropriate challenges, opportunities, and environments for students to fully develop into engaged, thoughtful, independent learners.

## References

The International Baccalaureate. <http://ibo.org>

Montessori, Maria. (1972) *Erdkinder*. Appendix A. In *From childhood to adolescence*. Oxford, England: Clio Press.