

# MONTESSORI ACADEMY EDISON LAKES

## Junior High Curriculum Ages 12 through 14 years

The two-year curriculum is organized through themes which integrate science, health, personal knowledge, social studies, literature and writing. Students in both grades work together through the annual cycle of the year, thus completing both A and B cycles during the two-year enrollment.

Year A Cycle Themes	Science	Health	Personal Knowledge	Social Studies	Literature	Writing
<b>Beginnings</b>	Problem Solving	Digestive System / Nutrition	Self-Discipline & Responsibility	Early Civilizations	<i>Seven Daughters &amp; Seven Sons</i>	Informative Essay
<b>Explorations</b>	Atoms Elements Compounds	Infectious Diseases	Courage / Perseverance	Medieval History	<i>The Alchemist</i>	Speech
<b>Identity</b>	Environmental	Genetics	Honesty	Renaissance	<i>The Revealers</i>	Scientific Report
<b>Relationships</b>	Plate Tectonics Evolution	Endocrine/ Reproductive Systems	Compassion	Eastern Religions	<i>The Killing Sea: A Novel of the Tsunami</i>	Independent Research (Paper)
<b>Interdependence</b>	Energy Resources	Fetal Pig Dissection	Friendship	Africa	<i>Waiting for the Rain</i>	Independent Research (PowerPoint)

Year B Cycle Themes	Science	Health	Personal Knowledge	Social Studies	Literature	Writing
<b>Structure</b>	Rocks/ Minerals	Cells	Covey's Habit #1: Be Proactive	Constitution	<i>Outsiders</i>	Informative Essay
<b>Forces</b>	Newton's Laws of Motion	Circulatory & Respiratory	Covey's Habit #2: Goals	Civil War	<i>Glory Field</i>	Speech
<b>Changes</b>	Work/Power/ Simple Machines	Substance Abuse	Covey's Habit #3: First Things First	Immigration/ Civil Rights	<i>To Kill a Mockingbird</i>	Independent Research
<b>Power</b>	Meteorology	Bones/ Muscles	Covey's Habit #4: Win-Win	Great Depression/ WWII	<i>Parallel Journeys</i>	Independent Research (Paper)
<b>Balance</b>	Photosynthesis	Nervous System	Covey's Habit #5: Listening Skills	Cold War/ 60s and 70s	<i>Red Scarf Girl</i>	Independent Research (PowerPoint)



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### *Mathematics:*

The first level of math is designed to meet the student at his or her own level of understanding and build upon that knowledge. The purpose of math is to strengthen the student's overall mathematical thinking and at the same time familiarize the student with both algebraic and geometry terminology. Upon completion the student will have a more abstract ability with both math and geometry and be able to use an algebraic approach to problem solving with enhanced critical-thinking skills. The second level of the mathematics curriculum is a continuation of skills and abilities gained in the first level. Students are challenged to extend their math knowledge beyond basic Algebra I to work with Algebra II and higher level geometry work. The work focuses on story problems and the practice of analyzing different approaches to critical-thinking problems.

#### *Level I Mathematics:*

- Observing numbers
- Integers
- Pre-algebra concepts
- Applications with real numbers
- Properties
- Basic algebra
- Basic multiple steps in algebra
- Fractions and variables
- Inequalities
- Functions
- Graphing

#### *Level II Mathematics:*

- Working with complex numbers
- Special functions
- Complex patterns, roots and radicals
- Graphing multiple equations
- Solving systems of equations
- Factoring
- Graphing nonlinear functions
- Solving equations with special functions

### *Geometry:*

Geometry curriculum is concurrent with the Level I and Level II algebraic course work. The goal is for the students to be able to work solely on narrative-based geometry problems by applying their understanding and knowledge of geometry. Students work together and discover ways of problem solving. This process of learning eventually leads the students to think and reason algebraically and become very creative thinkers.