

TUESDAY CLASSES

	STEM #1	STEM #2	LUNCH ROOM
9:00 AM	SPAN 1 (45m)	FRENCH 1 (45m)	
9:30 AM			
9:45 AM	MIDDLE SCHOOL MATH (45m)	ANIMAL & ENVIRONMENTAL SCI (45m)	
10:00 AM			
10:15 AM			
10:30 AM	ALGEBRA 1 (90m)	CHEMISTRY (90m)	
10:45 AM			
11:00 AM			
11:15 AM			
11:30 AM			
11:45 AM			
12:00 PM	LUNCH		
12:30 PM	PRE-ALGEBRA (90M)	BIOLOGY (90m)	SEWING 1/2 (90m)
1:00 PM			
1:15 PM			
1:30 PM			
1:45 PM			
2:00 PM	ALGEBRA 2 (90m)	STUDY HALL	
2:15 PM			
2:30 PM		ASTRONOMY (60m)	
2:45 PM			
3:00 PM			
3:30 PM		DISMISSAL	

## Course Descriptions

(\*Registration Fee is \$75/course/student, sewing registration is \$25)

### 2019-2020 SCIENCE COURSES

#### MS Exploring Animals & Environmental Science

In this split course, students will understand their vital role in helping to maintain God's beautiful Creation and all about the various types of animals that He created. In **Exploring Animals** we will study: Sponges, Cnidarians and Worms, Mollusks, Arthropods and Echinoderms, Fishes, Amphibians and Reptiles, Birds and Mammals and Animal Behavior. Labs will include (but aren't limited) to: Population growth of Yeast, Exploring an ecosystem, Designing a terrarium, Pollen and Flower Diversity, Exploring a Wind turbine, Cleaning up an Oil Spill, Dissection of an earthworm, clam, and grasshopper, Studying the life cycle of butterflies and frogs and Dissection of owl pellets. **Environmental Science** will include: Populations and Communities, Ecosystems and Biomes, Living Resources, Land, Water and Air Resources, Energy Resources and VA Flora/Fauna(3 pamphlets). Students will be responsible for taking notes, turning in homework, taking tests, completing several projects and participating in labs. Through the course of our studies, students will be introduced to various hot-topics such as over-population, evolution, and global warming which will be supplemented with materials from various Catholic sources.

#### Books:

**First Semester:** [PRENTICE HALL SCIENCE EXPLORER ENVIRONMENTAL SCIENCE](#) – 2005 (ISBN-10: 0131150901) and (3) pocket guides: Virginia Wildlife: [A Folding Pocket Guide to Familiar Species](#), [Virginia Trees and Wildflowers: A Folding Pocket Guide to Familiar Species](#), [Virginia Birds: A Folding Pocket Guide to Familiar Species](#)

**Second Semester:** [PRENTICE HALL SCIENCE EXPLORER C2009 BOOK B](#) (ISBN-10: 0133651010)

**Grade Level: 6th - 8th**

**Tuition: (45 minute class) \$325 per student plus \$40 lab fee which includes all lab materials - \$365\***

**Teacher: Penny Starrs**

## **MS - Astronomy**

“ From the foundations of the world men have caught sight of His invisible nature, His eternal power and His divineness, as they are known through His creatures.”

- Romans 1:20-Knox Catholic Bible

*From the text...*

What would living on Venus be like? Are there really black holes? How did God create the cosmos? Curious kids want to know! This book (course) covers the major structures of our solar system, starting with the sun and working towards Pluto. Along the way, the student will also learn about Earth's moon, the asteroid belt, and the Kuiper belt. After that, students will move outside our solar system and learn about the stars and galaxies that make up God's incredible universe. Finally, the student will learn about space travel and what it takes to be an astronaut. The activities and projects use easy-to-find household items to make the lessons come alive! Activities include simulating the use of radar to reveal a hidden landscape, making a telescope, and making an astrometer to measure the brightness of a star.

**Books:** Apologia's *Exploring Creation with Astronomy, 2nd Edition Text*; Apologia's *Exploring Creation with Astronomy Notebooking Journal 2nd Edition*

*Optional Text:* Lab Activity Guide

(This complete, full color, spiral-bound Science Kit Guide covers the 63 activities in the *Apologia Exploring Creation with Astronomy* textbook.)

**Grade Level: 6th-12th**

**Tuition: (60 minute class) \$325 per student plus \$40 lab fee which includes all lab materials - \$365\***

**Teacher: Rosario Reilly**

## **HS Biology**

In this course, students will study the living systems as a means to discover God's creation through lecture, class activities and lab work. Units to study include: The Nature of Life, Ecology, Cells, Genetics, Evolution, Microorganisms and Fungi, Plants, Invertebrates, Chordates and the Human Body. The labs will include; but are not limited to: Scientific Tools, Identifying Attributes of Living Things, pH Values, Observation of Microscopic Pond Life –Cellular structure, Permeability of Cells, Building an Atom, Extraction of DNA, Fossil identification, Growth of Bacteria/Effects of Antibacterial products, Dissection of several specimens including a worm, crawfish, and fetal pig. Dissection of a sheep eye, heart and brain. We will also study the life cycles of butterflies and tadpoles. Students will be responsible for taking notes, turning in homework, completing several projects and participating in labs. Through the course of our studies, the students will be introduced to various hot-topics such as over-population, evolution,

human-cloning and stem cell research which will be supplemented with materials from various Catholic sources.

**Books:** Prentice Hall Biology Textbook, Copyright 2006, ISBN-10: 0131662554 (Dragonfly on front); Prentice Hall Biology, Adapted Reading and Study Workbook B

**Grade Level: 9th-12th**

**Tuition: \$340 tuition plus \$50 lab fee - \$390\***

**Teacher: Penny Starrs**

## **HS Chemistry**

Prerequisite: Algebra I, previous or concurrent (Available Live or through Unlimited Access)

Course Description: We will be studying God's creation at the atomic level and discovering how marvelous it is. This college-prep Chemistry course will cover a wide range of topics including Structure of Matter, States of Matter, Chemical Reactions, Stoichiometry, Equilibrium, and Thermochemistry. We will also consider how Chemistry is important in our day-to-day life.

Instructor Bio: Kathy Dutton holds both a Bachelor of Science in Chemistry and a BA in Accounting from the University of Michigan. Her early career involved research, including work with catalytic converters, neurology, and immunology. Mrs. Dutton has more than 20 years of teaching and tutoring experience across various venues, including university teaching, private tutoring, homeschool co-op classes, and public and Catholic schools. Mrs. Dutton teaches a local AP Chemistry course and Catholic religious education and Confirmation preparation classes for her parish. Additionally, Mrs. Dutton devotes time to the Flint Regional Science and Engineering Fair, an ISEF-associated fair. Mrs. Dutton and her husband Dave raised three sons, homeschooling one, and currently lives in mid-Michigan with their two cats and dog.

Facilitator Bio: (See prior bio for Mrs. Starrs)

**Books:** [Chemistry, Wilbraham, Staley, Matta, Waterman](#)(Prentice Hall, 2008) ISBN: 0-13-251210-6. (We recommend buying used to save money)

**Grade Level: 10-12<sup>th</sup>**

**Tuition: \$340 tuition plus \$50 lab fee - \$390\***

**Teacher: Penny Starrs**

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# 2019-2020 MATH COURSES

After finishing the General Middle School Math course, the student should be ready to begin the algebra course progression which uses the Margaret Lial textbook series for Pre-algebra , Algebra 1 , and Algebra 2 . The high school level Geometry course can be taken after completing either the Pre-algebra or Algebra 1 courses. As an aid to planning your student's course progression, after the math course descriptions are suggestions for How to Select a Math Course Sequence (for Upper Middle Schoolers through High School) .

## Prerequisites

The initial chapters of each course will be covered rapidly since the material is review in order to focus more thoroughly on the new concepts. The quick review is manageable for the student who meets the course prerequisites listed for each course or can do the summer preparation materials without difficulty. For those interested, the instructor provides a summer review class, or Homeschool Connections offers several summer math boot camp classes for math review.

## Instructor Approach

For each class the instructor reviews prior week material, focusing on student initiated questions from homework. Also, the instructor introduces one to two new topics, demonstrates with examples, and highlights common mistakes. The student will spend class time solving problems individually or in small groups, often on whiteboards or blackboards. Homework usually includes review or use of prior topics. Manipulatives, visuals, related math games or activities will be used to enhance learning. Limited Class size ensures individual attention. Students should expect weekly quizzes or tests which the Instructor will grade.

Instructor Bio: Deborah Britten has a Master's in Public Administration. Prior to beginning her family, she worked as a Data Analyst for the Department of Health and Human Services. Providentially, her work studying the ugly results of child care led her to choose stay at home motherhood, foster care, and later homeschooling her seven children. Homeschooling works! Her oldest son is now a gainfully employed software programming engineer, her oldest daughter a Christendom graduate, another just enlisted in the Air Force, leaving two halfway through college and two starting high school. She began teaching for Aquinas Learning in 2014. She taught the 4<sup>th</sup>-6<sup>th</sup> grade girls' class in the integrated humanities program. She taught Pre-algebra to middle schoolers, and Geometry and Algebra 1 to high school students. Her favorite part of teaching is helping a math struggling student excel.

## **General Middle School Math**

This course is open to 5th-8th graders who meet the prerequisites. It is meant to be the last year of middle school math before beginning Pre-algebra and above.

The Math-U-See Zeta text provides a complete review of fractions and thorough coverage of decimals and percents. By the end of the course students are solving 2 step equations containing both fractions and decimals. Topics covered include math fact fluency for multiplying and dividing, all mathematical operations and skills with fractions and decimals, metric system, solving one variable equations, percents, converting between fractions, decimals, and percents. Fractional operations include equivalent, mixed and improper numbers, GCF, unlike denominators.

**Required Text:** *Student - Math-U-See Zeta Student Pack* from <https://store.demmelearning.com/zeta-student-kit.html> and

*Parent - Math-U-See Zeta Instruction Manual* which contains answer keys for the homework can be purchased used on Amazon or other site. Or, The Zeta Instruction Pack contains the manual and the (optional) DVD instruction: <https://store.demmelearning.com/zeta-instruction-pack.html>

### *Prerequisites:*

- 1) Prior course completion of Math-U-See Delta minimally or Epsilon preferred, Saxon 5/4 minimally or 6/5 preferred, Right Start Math (first half of) Level E, Teaching Textbooks 6, or similar text.
- 2) Mastery of all operations (add, subtract, multiply, divide without remainders) with positive whole numbers of any value [Ex: 9,191,000 divided by 2,020]
- 3) Mastery of place value for positive whole numbers through trillions
- 4) Introduction to order of operations
- 5) Adding/subtracting proper fractions with same denominators
- 6) Sufficient math fact fluency [Adding/subtraction: 25-30 out of 30 correct in 1 minute & Multiplying/dividing: 20-30 out of 30 correct in 1 minute.]
- 7) Ability to spend 30 minutes to hour, 4-5 days per week on homework

**Grade Level: 5th -8th Grade**

**Tuition: \$300**

**Teacher: Mrs. Deborah Britten**

## The Algebra Courses Overview

Margaret Lial's incremental, thorough algebra series is used by many colleges to bridge various math knowledge gaps. Also, it has a self-teaching, scripted feel that is very helpful for homeschoolers. Parents and students appreciate the text layout, clear explanations, color-coding and highlighting of common mistakes and tips. There is thorough practice of all computation skills, cumulative review, and practical word problem applications. When more practice to master a new concept is critical, the text provides copious and varied problems to select from. The parent can find free video lessons on youtube for auditory learners who need to hear and see more examples worked out. If desired, step by step solution manuals can be obtained. Copious used copies of older editions make the Lial series quite inexpensive.

Each level in the progression provides a thorough review of prior levels and a concept mastery approach for new concepts. For the student who can meet the course prerequisites, it should not be overwhelming as it does not present too much new information at once or jump around from topic to topic. While some textbooks "introduce" the next year or level up concepts the final quarter of the course (such as trigonometry at the end of Algebra 2), the Lial series does so minimally. Valuable time can be spent truly mastering a more limited amount of new material, which is extremely useful for a once a week class meeting or the more math challenged student.

### Pre-Algebra

*This course is designed for students in middle school grades 6-9 who meet the listed prerequisites, or it can also be used to satisfy a high school math requirement for those in 9th grade or above.*

Course Description: Negative integer work begins immediately so it can be applied throughout the year to all mathematical operations with fractions, decimals, and 1 and 2 step equation solving. Topics covered include: Understanding Variables and Solving Equations; Solving Application Problems; All Operations using Positive and Negative Whole Numbers, Fractions and Decimals; Ratio, Proportion, Percents; Measurements (particularly conversions necessary for high school science); Graphs and slopes; Exponents and Polynomials. Calculators are not used.

**Required Text:** Student: *Pre-algebra (3rd Edition)* by Margaret Lial (ISBN: 0321266625)  
[Easy to find used copy on Amazon for under \$10, shipping inclusive]

**Optional:** DVD Lecture for each chapter (ISBN: 0321599306) or Youtube: free access to video lessons for each section of textbook:

<https://youtu.be/k6RGGAgVfBg?list=PLIF4742K8uRKI83GGqVxGVbqEMymZEMAv>

### Prerequisites:

1) Completion of General Middle School Math course through Aquinas Learning, Math-U-See Zeta, Saxon 7/6 or 8/7, Right Start Math level E, Teaching Textbooks 7, or other similar course.

2) Mastery of all operations (add, subtract, multiply, divide) with positive whole numbers, fractions, and decimals

- 3) Knowledge of order of operations and introduction to percents
- 4) Math fact fluency through 12's Tables [Multiplying/dividing: Aim for 30/30 correct (100%) in 1 minute]
- 5) Ability to spend 45 min to one hour, 4-5 days per week on homework

**Suggested Summer Review Preparation:**

Complete the material posted on pages 3 and 5-8 in this local public schools packet:

<https://www.lcps.org/cms/lib/VA01000195/Centricity/Domain/4381/SMMS%202018%20Rising%20Math%207%20Summer%20Packet.pdf>

**Grade Level: 6th-9th**

**Tuition: \$300**

**Teacher: Mrs. Deborah Britten**

## **Algebra 1**

*This course can be taken by 7th - 11th graders to satisfy a high school math requirement. It can be completed successfully after either the Pre-Algebra or Geometry course.*

**Course Description:** Topics Covered include: Solving and Graphing linear equations and inequalities in two variables; Solving systems of linear equations and inequalities by graphing, substitution and elimination; All operations with polynomials and exponents; Scientific notation; Factoring trinomials, sums and differences of cubes; All operations with rational expressions; Complex fractions, and variation; Operations with roots and radicals; Solving quadratic equations; Distance/rate/time and motion problems; Parabolas.

**Required Text:** -Student: *Introductory Algebra (9th Edition)* by (Margaret) Lial, Hornsby, McGinnis ( ISBN: 978-0-321-55713-1) [Easy to find used copy on Amazon for under \$20, shipping inclusive], a standard calculator without graphing capability.

**Optional:** DVD Lecture for each chapter (ISBN: 0321599306) or Youtube: free access to video lessons for each section of textbook:

<https://youtu.be/k6RGGAgVfBg?list=PLIF4742K8uRKI83GGqVxGVbqEMymZEMAv>

Parent: A step by step Solutions Manual (ISBN: 0321576438)

### **Prerequisites:**

Complete Pre-Algebra with a B or above, or obtain instructor approval. Complete (or be confident in ability to complete) the Summer Review Preparation listed below. Ability to spend one hour, 4-5 days per week on homework (most weeks)

*Suggested Summer Review Preparation for Algebra:*

1) <https://www.lcps.org/cms/lib/VA01000195/Centricity/Domain/4381/SMMS%202018%20Rising%20Math%207%20Summer%20Packet.pdf>

2) <https://www.lcps.org/cms/lib/VA01000195/Centricity/Domain/4381/Math%20Summer%20packet%20raising%20Algebra%201-Math%208%20.pdf>

3) the following sections of Introductory Algebra : Readiness pp. 3-27 (fractions, decimals, percents), Chapter 1 (negative integers), and Chapter 2.1-2.4 (solving linear equations with one variable).

**Grade Level: 9th-12th**

**Tuition: \$300**

**Teacher: Mrs. Deborah Britten**

## **Algebra 2**

*This course can be taken by 9th - 12th graders to satisfy a high school math requirement. It can be completed successfully after either the Algebra 1 or Geometry courses.*

**Course Description:** Topics covered include: Linear equations and inequalities in one variable; Set operations; Linear equations and inequalities in two variables; Functions; Systems of linear equations in two and three variables; Matrix methods (introduce); Polynomial operations and functions; Factoring; Rational expression operations and functions; Complex fractions and numbers and graphs; Variation; Equations with radicals and root functions; Quadratic equations and graphs; Parabolas; Polynomial and rational inequalities; Inverse, exponential, and logarithmic functions; Nonlinear functions; Conic sections; Nonlinear systems (circle, ellipse, hyperbola).

NOTE: All required Algebra 2 topics are covered in this text. Many Algebra 2 courses include an introduction to trigonometry. Almost all Precalculus courses, including the next in the Lial series PreCalculus, do thoroughly cover trigonometry. Although it is not required for a standard Algebra 2 course, for those who wish to introduce trigonometry before precalculus for a few questions on the CLT/ACT/SAT testing and because repetition aids in retention and mastery, the instructor may offer a summer trigonometry class, or Homeschool Connections has a recorded six week trigonometry class supplement.

**Prerequisite:** Complete Algebra 1 with a B or above, or obtain instructor approval. Be able to complete the majority of the summer preparation listed below. Ability to spend one hour, 5 days per week on homework.

### **Suggested Summer Preparation for Algebra 2:**

<https://www.lcps.org/cms/lib/VA01000195/Centricity/Domain/5214/THS%20Algebra%20II%20Trig%202018%20Summer%20Assignment.pdf>

STEM track students can also complete the word problem section at the end of each chapter for chapters 1-4, 6-7, 9-11 in the Algebra 1 textbook by Foerster [ISBN: 0131657089]. A Summer Review class covering this is planned for 2020 and may be available through the recorded courses on Homeschool Connections.

**Required Text:** Student: Intermediate Algebra (9th Edition) by (Margaret) Lial, Hornsby, McGinnis (ISBN: 978-0-321-57497-8) [Easy to find used copy on Amazon for under \$10, shipping inclusive]. Graphing calculator requirements will be provided in the fall.

**Optional:** DVD Lecture for each chapter [ISBN: 0321576284] or Youtube: free access to video lessons for each section of textbook:

[https://www.youtube.com/watch?v=x\\_lfVBWQtqk&list=PLwIS7xNYhDdOKrKymVq\\_9AZ9T4FzIIWsz](https://www.youtube.com/watch?v=x_lfVBWQtqk&list=PLwIS7xNYhDdOKrKymVq_9AZ9T4FzIIWsz)

**Grade Level: 9-12th**

**Tuition: \$300**

**Teacher: Mrs. Deborah Britten**

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## 2019-2020 ARTS COURSES

### Spanish I

This course is open to 5<sup>th</sup> graders and up.

Course Description: The Spanish for Children Primer A Program teaches upper-elementary students this dynamic language using a combination of immersion-style dialogues and vocabulary. The Spanish for Children series emphasizes grammar and the parts of speech as vital tools for the correct speaking and understanding of Spanish. The texts also use lively chants to aid memorization of both grammar and vocabulary.

A special note from *Spanish for Children* author Julia Kraut:

Our goal with the Spanish for Children series is to teach students “why.” We focus on the rules that govern the language and spend a large amount of time comparing Spanish and English grammar. In many ways, this series doesn’t teach just Spanish—it teaches how to go about learning a language in general. This is different from the “scenario-focused” approach of many other textbooks, where students learn vocabulary that relates to specific subjects and then learn to discuss those subjects. While students using SFC do memorize vocabulary each week, using groups of related words to talk about various subjects and scenarios is “the icing on the cake”—the “cake” being an understanding of the patterns of the Spanish language, and knowing which word belongs where and why.

Supplies: Students will need hole punched college-rule paper, a 1” 3-ring binder, pencils, page protectors, and a folder.

Student Textbook: [Spanish for Children, Primer A](#) by Julia Kraut, Classical Academic Press ISBN 978600510472 (You can also purchase the Prima A Answer Key, Video, & Audio for more in-depth study)

Grade Level: 5<sup>th</sup> Grade and up  
Tuition: \$275  
Teacher: Mrs. Narcissa Zhicay

## French I

This course is open to 5<sup>th</sup> graders and up.

Course Description: This classical, beautiful, and widely spoken language will be a treasure for children to learn. There is a distinction, however, between just learning common words and phrases, which is the approach of many French programs, and knowing the language well enough to communicate fluently and accurately. *French for Children Primer A* teaches elementary students in grades 4 and up this dynamic language, both classically and creatively, at a time when students soak up language like a sponge. This book employs the pedagogy and structure of our popular Latin for Children series combined with immersion-style dialogues and vocabulary so that the French language will be taught well and thoroughly. The French for Children series emphasizes grammar and the parts of speech as vital tools for correctly speaking and understanding French. The text also uses lively chants to aid memorization of both grammar and vocabulary.

Supplies: Students will need hole punched college-rule paper, a 1" 3-ring binder, pencils, page protectors, and a folder.

Student Textbook: [French for Children, Primer A](#) by Joshua Kraut, Classical Academic Press (You can also purchase the Prima A Answer Key, Video, & Audio for more in-depth study)

Grade Level: 5<sup>th</sup> Grade and up  
Tuition: \$275  
Teacher: Laetitia McKernan

**Sewing 1 & 2** - these classes will meet during alternating weeks (even weeks are Sewing 1 and odd weeks will be Sewing 2. They will have 2 weeks time to complete homework projects).

This course is open to 5<sup>th</sup> graders and up.

Course Description: Sewing 1

This class will allow students to learn an important life skill, sewing. After learning how to thread a needle, knot the thread and perform basic sewing stitches, we will use those skills to create projects. Last year's projects included a sewing book, lavender sachets, a key chain, and a coin purse. Students also learned to sew buttons, hem, repair and darn items. The final project had

them using all the skills they learned to create a pillow. A brief introduction to the sewing machine was done to familiarize students and to complete their pillows. A brief introduction to basic knitting can also be done if there is interest.

Course Description: Sewing 2

Pre requisite Sewing 1

This class will continue to use the hand sewing skills taught in Sewing 1 and build upon them. The class will begin with a brief review and then students will move to learning, more in depth, how to use the sewing machine to create more advanced sewing projects. Skills of following directions and written patterns will be used to create a pillow case, an apron, a tote bag, a pillow, a tissue pack cover and hopefully a simple skirt. Since these projects utilize a sewing machine, students will need to have access to a working sewing machine.

**Grade Level: 5<sup>th</sup> Grade and up**

**Tuition: \$85 (plus \$30 materials fee)**

**Teacher: Cyndy Quinan**