

# **Saint John Paul II Homeschool Co-op**

## **Handbook and 2020-2021 Course Offerings**



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## **JPII Co-op: Who We Are**

The Saint John Paul II Homeschool Co-op (hereinafter “JPII Co-op” or “Co-op”), obedient to the Magisterium of the Catholic Church, is a place where Catholic homeschooling families in the Pittsburgh area can find, meet, and support each other. We are a group of devoutly Catholic families, committed to a faith-filled education for our children. The Co-op enables participating families to jointly pursue academic studies and grow in their faith.

The JPII Co-op develops each of these commitments in specific ways:

1. We teach and model for our children how obedience to the Magisterium opens up freedom and rationality in every discipline and in all aspects of life.
2. Our support for each other includes a commitment to mentoring in all aspects of homeschooling. This mentorship happens informally through conversation and collaboration. This mentorship also happens more formally through workshops led by veteran families who have been homeschooling from preschool through high school and have seen the journey all the way through to college with their older children. In these workshops, they are able to share the experiences and wisdom that they have learned along the way.
3. As parents, we seek to model the Lordship of Christ in all vocations and all inquiry, and to prepare our children for lives, beyond school, of joyful submission to Christ in beauty, goodness and truth. Our commitment to faith-filled education therefore takes seriously the contours of modern post-secondary education and professional life. As they enter high school, we prepare our children to excel in all subjects at a collegiate level while also placing all inquiry, labor, and achievement in submission to Christ. Our curriculum in the elementary and middle grades is designed to form our children’s minds and hearts in this disposition to truth, beauty, and goodness.

Our Co-op has two branches: (A) an “All Families” Google group, and (B) a weekly class group. Families are invited to join one or both of these groups. You do not have to be part of the weekly class group in order to join the “All Families” group. The “All Families” group is open to all Catholic homeschooling families in the Pittsburgh area and currently has approximately 40 families in the “All Families” group.

### **The “All Families” Group**

Families in the “All Families” group will be invited to join a Google group that facilitates communication about upcoming science fairs, field trips, and other learning opportunities. Families in this group can contribute by organizing field trips, sharing info about learning opportunities during the year, and posting information helpful to Catholic homeschooling

families in general. See the section on “Science Fairs, Field Trips, and Other Offerings” for a list of past offerings to inspire you!

## **The Weekly Class Group**

Families in this group meet weekly during the academic year for three class periods, typically comprised of a literature course, a science course, and an elective period. In addition to classes, our weekly meetings provide the opportunity for communal celebration of learning, for students to build presentation and leadership skills, and for students to develop positive peer relationships. High school students are invited to organize Co-op events and teach occasional classes for younger students. Even our youngest students are invited to present their learning to the group throughout the year.

This year, classes are offered for PreK, elementary, middle school and high school students. At least one parent is asked to be at the weekly meetings along with participating children, illness and family emergencies excepted. This is not a ‘drop-off’ and ‘pick-up’ program, nor can classes be chosen a la carte.

## **Benefits of JPPII Co-op Weekly Classes**

- **Accomplish More**  
Capitalize on economies of scale by having a community of families commit, contribute and share responsibilities and resources.  
We are able to accomplish more with unified efforts rather than individually and alone.
- **Learn Together as a Family Unit**  
Educate children in academic subjects at multiple age and grade levels.  
This year, all grade levels studied Human Anatomy and Physiology for science. With all grade levels studying the same science discipline, families grow in knowledge together as a unit. Moms and siblings share their learning experiences with one another at Co-op, at home and in the community. This cohesive approach allows families to participate in science-related enrichment opportunities together, such as meeting with guest speakers and conducting hands-on lab experiments.
- **Grow in Faith**  
Develop and support critical analysis of concepts in light of Catholic teaching (both orally and in written formats)
- **Build Friendship**  
Cultivate positive peer interaction

## **Costs**

There is no tuition to be part of the weekly classes. Each family is asked to make a monthly donation to the church that hosts us. There is no minimum amount for this donation, so families can give any amount that is comfortable for them. Parents are responsible for purchasing books and other equipment necessary for the courses their children are enrolled in.

## **Parental Contributions**

Participating families are asked to contribute their talents as best they can for the benefit of all in the Co-op. For most parents, this will mean leading or co-leading a class. However, there are also other vital ways that parents can contribute to the functioning and thriving of our weekly Co-op. For example:

- Administrative tasks such as collecting a monthly offering for the church that hosts us, compiling a directory of participating families, taking minutes at meetings, maintaining a course calendar, making sure all adults have up-to-date clearances, coordinating expressions of gratitude for the priests and staff of our host church, coordinating the weekly cleaning of the classrooms that we use, etc.
- Occasionally weekly Co-op families invite outside guests to teach or present. Parents may contribute by organizing and facilitating communication for these visits.
- Organizing our Co-op's participation in area science fairs.
- Planning and/or hosting community events—among other gatherings, our Co-op has a welcome picnic and an end of year celebration picnic. Parents are needed to organize these events. Parents may also contribute by organizing academic or liturgical celebrations to take place during Co-op throughout the year.
- Creation of and maintenance of the JPPII Co-op online page.
- Media Relations—communicating with area media about Co-op events.
- Displays—Parents can contribute by creating and maintaining hallway displays that reflect the community life and learning of our Co-op, such as a calendar of birthdays and Co-op events, a saint of the month, a timeline of the historical period we are studying.
- Filling in as needed—Parents are needed to step in when teachers have to miss a day of class, or if a teaching mom would like someone to hold her baby (otherwise, babies are welcome in the classrooms!)

## **Clearances**

Anyone over the age of 18, including students, must have their clearances to come to Co-op weekly meetings, even for a single session. If any student turns 18 during the academic year,

then they should start the process of obtaining their clearances immediately after their 18<sup>th</sup> birthday. Clearances must be obtained by the 1<sup>st</sup> day of the Co-op academic year.

## **Are Non-Catholics allowed to participate?**

St. JP II Co-op is a distinctly Catholic Co-op, obedient to the magisterium of the Church. Occasionally, non-Catholic families request to join the Co-op and are admitted on a case-by-case basis. JP II Co-op is open to welcoming non-Catholic families who are able to embrace the Co-op's Catholic identity and to support the teachings of the magisterium of the Catholic Church at Co-op.

## **Determining Class Offerings**

In June, all families that have committed to meet weekly gather together for a focused 2-to-3 day Planning Meeting. Each family comes to the Planning Meeting with an inventory of both: (i) their needs and goals for the upcoming academic year, and (ii) the talents and resources they can contribute to the weekly Co-op in the upcoming academic year. If a family cannot participate in-person at the Planning Meeting, their input is received in writing; input from all families is vital for a successful Planning Meeting.

Trusting in the Holy Spirit, the families strive to align the needs and goals identified with the talents and resources contributed by member families. Every single year- without fail- the Co-op has more talents and resources available than there are opportunities to utilize all those contributions, and every single year- without fail- the academic year is full of rich offerings for the member families.

## **COVID-19 and JP II Co-op**

The COVID-19 pandemic did impact Co-op because the host site is a facility within the Diocese of Pittsburgh and is subject to comply with all Diocesan COVID-19 requirements. Nevertheless, we worked hard to limit the COVID-19 disruptions upon our academic year. At the start of the Co-op year, pragmatic and proactive plans were established to address COVID-19. For example, the Co-op enjoyed a smooth transition to online classes for a period of consecutive weeks when COVID-19 transmission rates were high in Allegheny County and nonliturgical programs were suspended at all Diocesan campuses. In addition, all member families are required to comply with the requirements of the Diocese of Pittsburgh which includes wearing a mask while indoors and maintaining the required social distance among individuals. Moreover, the Co-op planned its use of the spaces at the host site so as to allow those spaces to rest in between uses to minimize COVID-19 transmission at Co-op.

### **Contact for More Information---**

To join JP II Co-op or for more information, contact  
Anita Anand at [anitathomasanand@gmail.com](mailto:anitathomasanand@gmail.com)

# Science Fairs, Field Trips, and Other Offerings

## Science Fairs

All JPII Co-op families are invited to participate in or visit several science fairs each year.

- Pennsylvania Junior Academy of Science- Regional and Pennsylvania statewide competition (for grades 7 - 12)
- Covestro Pittsburgh Regional Science and Engineering Fair (for grades 6 - 12)
- St. JPII Co-op STEAM Fair
  - Open to all Catholic homeschooled students, Pre-K through 12th Grade
  - The goal of the STEAM Fair is to encourage a love of learning and an ability to publicly present in front of others
  - Participating students are welcome to bring and present any STEAM-related project (STEAM=science, technology, engineering, art and math). The 2021 Fair includes the arts which includes reciting a poem, presenting a piece of artwork or playing a musical instrument.
- Visitation Day at the Intel International Science and Engineering Fair when it is hosted in Pittsburgh (This is the world-wide Olympics of science fairs!)

## Field Trips

Here is a sampling of field trips the Co-op has enjoyed in the past. Each year we revisit some old favorites and add new places to our list!

- Annual Chemistry Faraday Lecture
- Covestro
- National Aviary
- Beaver Valley Nuclear Power Plant
- Bayer
- PPG
- Jennings Environmental Education Center
- National Weather Service- Pittsburgh Office
- University of Pittsburgh, Department of Biological Science, Strawberry Lab
- Duquesne University, Department of Chemistry, Lab Research
- Educational Offerings at the Carnegie Science Center
- CMU Rare and Special Books Collection

## **Other Offerings**

In addition to field trips, the Co-op hosts special gatherings or short courses during the year that are open to all Co-op members. Here are some of our past offerings:

- Parent Support Discussions—topics are identified in response to the needs of current Co-op families. Past topics included:
  - Homeschooling in High School
  - Working While Homeschooling
  - Getting to College
  - Illness While Homeschooling
  - Homeschooling Multiple Children in Multiple Grade Levels
- Science Fair Information Sessions—new to science fairs? Come learn what to expect and how to prepare a great project! Science Fair veteran? Come share your past experiences and your ideas for this year's project!
- Vocation Roundtable Discussions—This event features a Catholic couple and a relaxed setting in which they can share the path of their vocation, their experiences and pearls of wisdom.
- Summer Picnic for JPPII Co-op Families
- Women's Health Course—This course uniquely weaves together the science and physiology of the female human body alongside St. John Paul II's Theology of the Body. Geared towards adolescent young ladies, who have had their monthly cycles for at least six months, plus their mothers. Facilitated by a certified Natural Family Planning instructor.
- Men's Health Course—for adolescent young men and their dads
- Media Literacy—Careful examination of selected media content through a Catholic lens.
- Art Projects
- Pittsburgh Public Theater's Shakespeare Scene and Monologue Contest
- Pick-up baseball games
- Family Sharing Sessions (opportunities for families who have taken interesting trips to share with the group about their adventures and experiences).
- Mission trip to Mexico (Fall 2019)
- Civics and Elections- offered during a federal election year

# Logistics for Weekly Classes 2020-2021 Plans

## Location

**Saints John and Paul RCC**

**2586 Wexford Bayne Rd, Sewickley, PA 15143**

**Conveniently located near the I-79 exit, exit #73**

- The Saints John and Paul campus consists of approximately 33 acres of space that includes trails, rosary garden, basketball areas, fire pit and green, grassy spaces
- Our Co-op has exclusive use of the Cardinal DiNardo Center and pavilion on Tuesdays
- During the Co-op day, Eucharistic Adoration is available in the Grotto Chapel

## Daily Schedule

9:00-9:30	Mass in the main church
9:30-9:45	Transition to Cardinal DiNardo Center and Announcements
9:45-11:15	<b>Period 1, Literature*</b>
11:15-12:00	Lunch
12:00-12:15	Angelus, Clean up, transition to Period 2
12:15-1:45	<b>Period 2, Science*</b>
1:45-1:50	Transition to Period 3
1:50-2:50/3:20	<b>Period 3, Electives*</b>
2:50/3:20	End of Day Clean-up

\*These class periods may be broken up into shorter segments for our elementary and preschool students.

## Academic Calendar (2020-2021)

Aug 25, 2020	Oct 6	Nov 17	Dec 29 - OFF	Feb 9	Mar 23	May 4
Sept 1	Oct 13	Nov 24 – OFF Thanksgiving	Jan 5, 2021	Feb 16	Mar 30- OFF-Holy Week	May 11
Sept 8	Oct 20	Dec 1	Jan 12	Feb 23	Apr 6	
Sept 15	Oct 27	Dec 8	Jan 19	Mar 2	Apr 13	
Sept 22	Nov 3	Dec 15	Jan 26	Mar 9	Apr 20	
Sept 29	Nov 10	Dec 22- OFF	Feb 2	Mar 16	Apr 27	<b>34 weeks TOTAL</b>

Other Important Dates:

- February 2021 – PJAS Region 9, Slippery Rock University
- March 3, 2021 – JPII Co-op STEAM Fair
- March 24-25, 2021 – PRSEF, Carnegie Science Center
- March 3, 2021 – JPII Co-op STEAM Fair
- May 2021 – PJAS Penn State

## **Programs With JPPI Co-op Chaplain**

Throughout the academic year, Fr. Joe Carr, Chaplain, nourished the JPPI Co-op families. He enhanced Co-op families in several ways:

- **Eucharistic Adoration**  
Fr. Joe met with all weekly families in the main church to provide an overview of Eucharistic Adoration, including why it is important and the benefits of spending time with our Lord in Eucharistic Adoration. The program concluded with Eucharistic Adoration in the main church exclusively for the JPPI Co-op.
- **First Holy Communion and First Reconciliation Preparation**  
Fr. Joe met with the elementary students in the spring semester to support their at-home preparation for the sacraments. He provided a review of both sacraments and did a practice confession with a Co-op mom to give the students confidence for their first confession.
- **Confessions During Holy Week**  
To support Lenten preparations for Easter 2021, Fr. Joe offered the Sacrament of Reconciliation to the Co-op families during Holy Week.
- **Theology of the Body**  
Fr. Joe gave the high school class an exclusive session about the Theology of the Body and its relationship to a variety of public health options in our country such as gender transitioning, contraception, IVF and abortion. He answered questions from the students to equip them to address such public health controversies.

# 2020-2021 Course Offerings for Weekly Classes

## High School

JPII Co-op high school students could earn a maximum of 3.5 credits in the 2021-2022 academic year.

## **Literature**

When: First period

Length: 90 minutes

Credits: .5 high school credits for each of the fall and spring semesters

### Bible as Literature (Fall Semester)

**Course Description:** What does it mean to read the Bible as literature? “By literary analysis, I mean the manifold varieties of minutely discriminating attention to the artful use of language, to the shifting play of ideas, conventions, tone, sound, imagery, syntax, narrative viewpoint, compositional units, and much else; the kind of disciplined attention, in other words, that through a whole spectrum of critical approaches has illuminated, for example, the poetry of Dante, the plays of Shakespeare, the novels of Tolstoy.” —Robert Alter, *The Art of Biblical Narrative*, rev. ed. (Basic Books, 2011), 13.

We will be reading the Old Testament in Robert Alter’s translation and commentary. It is essential that students have the hard copy of this version. Because we will be focusing on the narrative parts of the Bible, you can get by with just the following parts:

Robert Alter, *The Five Books of Moses* (Norton, 2008); ISBN: 978-0393333930.

---, *Ancient Israel: The Former Prophets: Joshua, Judges, Samuel, and Kings* (Norton, 2014); ISBN: 978-0393348767.

### The Moral Choice: Actively Choosing the Good and Purposfully Avoiding Evil (Spring Semester)

**Course Description:** Several works were required and discussed in class, accompanied by short writing assignments that explored the ideas from our reading. We considered the depth of power of the story to its audience, considered the ways authors affect and can even manipulate their readers, and examined the question of what makes a story “good.” We examined elements of literature in the stories we read, such as diction, symbolism, characterization, imagery, and

tone. There was class interaction facilitated outside of class time via online interface (Google Docs).

Writing assignments required:

- outlining and diagramming to explore the structure of language
- composing well-reasoned responses to discussion questions in the form of short essays
- thoughtful written replies to peers' discussion responses
- writing "Imitations" (Imitatio) of excerpts of classical works (as done in classical rhetorical training)

Works studied:

- Excerpts from *Poetics* and *Rhetoric* by Aristotle
- *Beowulf*
- *Pride and Prejudice* by Jane Austen
- *How to Read Literature Like a Professor: A Lively and Entertaining Guide to Reading Between the Lines* by Thomas C. Foster (minus a couple of chapters)

Articles and short stories by various authors read:

- "The Monsters and the Critics," J.R.R. Tolkien
- "The Hint of an Explanation," Graham Greene
- "Special Duties," Graham Greene

By the end of the spring semester at least 3 additional high school level classics were discussed seminar style with peers in book clubs. Students have chosen works such as *One Day in the Life of Ivan Denisovich* by Aleksandr Solzhenitsyn, *To Kill a Mockingbird* by Harper Lee, *Mansfield Park* by Jane Austen, and *The Hobbit* by J.R.R. Tolkien.

## High School Science

When: Second period

Length: 90 minutes

Credits: 2 high school credits

### Human Anatomy and Physiology (1 credit) and Public Policy and Public Health (1 credit)

**Course Description:** The course offered instruction of the parts of the human body (anatomy) along with instruction of how the parts work together (physiology). The following human body systems have been studied:

- Human Development from Conception to Birth
- Integumentary System
- Skeletal System
- Nervous System
- Endocrine System
- Cardiovascular System
- Lymphatic System
- Digestive System
- Respiratory System
- Lymphatic System
- Reproductive System

Required Textbooks:

1. *Exploring Creation with Advanced Biology*, 2nd edition, Shanon and Yunis, ISBN 978-1-935495-72-7
  2. *Human Anatomy and Physiology*, 8th edition by Elaine N. Marieb (Author), Katja Hoehn (Author) ISBN-10: 0805395695  
ISBN-13: 978-0805395693
  3. *Catholic Catechism*
  4. *Theology of the Body in One Hour*, Jason Evert
  5. *Bible*
- The course includes:
    - (1) analysis of moral and faith-based topics,
    - (2) discussion of current events,
    - (3) experiments/dissections/microscope work,
    - (4) writing assignments, and
    - (5) conversations with experts/guest speakers

–Students learned that all applications of science have a morality (Catholic Catechism 2294) and learned how to assess the morality of scientific innovations and experiments. Students examined the morality of the federally funded Tuskegee Experiment and several current public health options such as abortion, contraception, In-Vitro Fertilization (IVF), and gender transitioning. Students also assessed the morality of the Ectotherm ER lab experiment to implement CCC 2294.

–In addition, the course interweaves Catholic teaching to provide a comprehensive viewpoint of the human person. Students gain the Catholic perspective by studying: (1) Catholic Catechism, (2) Scripture, and (3) Saint John Paul II’s Theology of the Body. Catholic teaching related to public policy was also studied, including:

- Spiritual Works of Mercy
- Corporal Works of Mercy
- The Golden Rule and Christ’s two greatest commandments
- The Common Good

–Along with learning human anatomy and human physiology, the students examined and answered the following questions:

- What is the purpose of the human person?
- When does a human life begin?
- What are the fundamental rights owed to a human person?
- What is good public policy?
- What are some major public health concerns in our nation at this time?

–At the end of the fall semester, the students prepared and presented a group project that required critical analysis of the human body. Each group identified, described, summarized, and delivered a 10-minute presentation that assessed the human body based on criteria different from those presented in the textbook. Each group also prepared a handout for the audience.

–When the respiratory and lymphatic systems were studied, students analyzed the global pandemic, Covid-19 causes, effects on the human body, vaccines, and expenditure of public funds for protecting human health in the pandemic.

–When the cardiovascular system was studied, students learned about CPR, AEDs, how to identify a stroke, and how to identify a heart attack.

–High school students had conversations with experts and guest speakers, such as the following:

- Beth London- Speech Therapist, Topic: Swallowing
- Beth London- Speech Therapist, Topic: Brain Trauma
- Sheflynn Strub- Physicist, Topic: Ray tracing when studying eyes and vision
- Stephanie O’Mara and 4-week-old son, Timothy- Topic: Labor, Childbirth, and Motherhood
- Fr. Joe Carr, Chaplain Topic: Theology of the Body and Q&A about a variety of public health options such as gender transitioning, contraception, IVF, and abortion
- Maria and Catherine London- Student Presentation about The Pro-Life Summit held in Washington, DC in January 2020.
- Leah Krummert and daughter Clara, Topic: A Broken Bone and follow-up care at Children’s Hospital in Pittsburgh

–Students also compared and contrasted what is the difference between an MD, DO, DC, PhD, and J.D- all are considered “doctors” or experts in their field of study.

- Testimonials from parents of high school science:

“Some of the hot topics in PH/PP have been abortion, the medical ethics and the Tuskegee Experiment, and how COVID19 makes its way past our immune systems defenses. This semester the kids have also begun reading Theology of the Body in One Hour to help them continue to see and process how amazing God has made the human body, and for what purpose.” Jen. H.

“...The [high school science classes] provided an opportunity for students to thoroughly understand and analyze the body systems as well as reflect upon the spiritual aspect of man, and how these two essential parts come together. The Catholic Catechism and Bible are used as well, highlighting the significance of our Catholic faith in the study of the human body. [My daughter] has learned so much....” Maria K.

## High School Lab Work Completed at JPII Co-op

### Model Organisms Lab Workshop

Model Organisms introduces students to eight examples of model organisms used in scientific research, including an organism (planaria) used to study regeneration and examples of asexual reproduction in plants. By observing these organisms, students learn why we use model systems, the advantages and disadvantages of each organism, and how each model organisms fits specific research scenarios.

### Ectotherm ER: Frogs Under the Weather

This lab experiment is based on the current research of Dr. Richards-Zawacki, University of Pittsburgh, whose lab investigates how climate change and host/pathogen ecology shapes the dynamics of wildlife diseases. Students investigate possible causes for amphibian declines through an experiment that uses thermal model agar frogs to learn how changes in climate impact frog survival. Students implement the scientific method: formulate hypothesis, design an experiment procedure, implement the experimental procedure, collect data, analyze the data, draw conclusions, and identify project limitations. High school students authored a lab report about their experiment experience.

### Outbreak Simulation

"Outbreak" is a simulation that uses the concept of infectious disease to allow students to analyze data, formulate relevant questions, and test/revise hypotheses. Students are presented with a scenario and provided data to analyze. They must use critical analysis and inquiry-based thinking to solve the case of a possible outbreak.

In the scenario, the causative agent is unknown. It is not known if the "disease" is contagious or due to environmental factors. Teachers and students play the part of agents representing the Center for Disease Control. It is up to the class to analyze existing facts and data and ask the pertinent questions that will allow investigation to proceed to hypothesis, hypothesis testing, and diagnosis so that the outbreak can be controlled. During the exercise, students will become acquainted with current science and technology (Polymerase Chain Reaction, electron microscopy, electrophoresis, cell culture), as well as problem solving techniques. Students are asked to determine the cause of the illness and provide treatment recommendations.

The Outbreak Simulation "disease" is compared and contrasted to COVID-19 and the current worldwide pandemic. Students receive an overview of vaccines and development of the polio vaccine by Dr. Jonas Salk at the University of Pittsburgh. Finally, students take a 'virtual' field trip of the places at the University of Pittsburgh where research is currently conducted for the COVID-19 vaccines.

## Microscope Workshop

Students learn the history of the microscope, types of microscopes and make observations of specimens under a lab-grade dissection microscope (from the University of Pittsburgh, Department of Biological Sciences). Students, who also make observations of specimens under a compound microscope, compare and contrast their observations from both the dissection and compound microscopes. Students gain appreciation of God's creation by making microscope-magnified observations of specimens, in addition to viewing the specimens with the naked eye.

## Fetal Pig Dissection

Dissection of a fetal pig is useful to help students better understand the body systems studied in the human anatomy and physiology science courses. A fetal pig is an excellent dissection specimen because it shares a number of comparable traits with humans: both are mammals and both have all of the same thoracic and abdominal organs as humans.

In fact, pig skin tissues and heart valves are used in medicine because of their compatibility with the human body.

## High School Electives

All of these electives and guest speakers occur during third period.

### German (90 minutes)

Length: 90 minutes

Credits: .5 high school credit

**Course Description:** Absolute beginners of German delved into this conversational German class, practicing speaking only in German during class time. We began one chapter each class from Language Hacking German by Benny Lewis, while the students finished listening to the audio and completing the writing exercises at home. Additional homework included vocabulary practice online and watching/listening/interpreting a video series at home.

Testimonial from parent of the German class:

“...[My daughter is] learning German through the immersion experience, where the class is entirely in German. The class has sung songs, played games, and much more. The types of assignments they have done outside of class include work in their book (Language Hacking German) as well as watching TV shows in German. I enjoy hearing her speak German periodically during the day!”

Maria K.

### Shakespeare- Hamlet (60 minutes)

**Course Description:** Shakespeare was offered for six weeks and the students read Hamlet aloud together. We also took time to discuss characters, language and theme, as well as to act out a few scenes.

### Engineering, Bridge Building (60 minutes)

**Course Description:** The Bridge engineering class introduced students to all the bridge types, summarized the forces (tension and compression) and how each of these forces were applied in all bridge types. Some interesting bridge history and bridge failures were covered. The instructor also shared her experiences of supervising an entire bridge replacement project through all phases of construction.

### Scrapbooking (60 minutes)

**Course Description:** This class allows students to purchase a scrapbook and create pages based on a theme. Students will work with their own photos by cropping them and arranging them in different page layouts. Solid colored and patterns papers as well as other embellishments can be included.

## Guest Speakers

### Co-op Students:

- Regina Anand, Co-op High School Student, Science Workshop
  - Overview of the Scientific Method
  - How to do a Science Project at Home
  - What is Gained/Learned from a Conducting a Science Project
  - Explanation of Area Science Fairs
  - Overview of 2020-2021 Study: *Pyrocystis fusiformis*
  - Provided opportunity for close observation of the marine organisms in their 'nighttime' darkness
- Magdalen McDermott, Co-op Middle School Student, Microscope Workshop
  - History of the Microscope
  - Types of Microscopes
  - Costs of Microscopes

### Co-op Mothers:

- Mrs. Jen Hemphill- Writer
- Mrs. Wendy Novotnak- Civil Engineering, Bridge Building & Overview of Microscopes
- Mrs. Jen Doering, C.P.A.- Accounting

### Local Professionals:

Each of these speakers explained their discernment of their professional vocation and how their faith impacts their work. They described their professional work to the students and how they combine their work-related responsibilities with their faith and family.

- Dr. Anthony Pizon, Emergency Room Physician
- Meg Alexander, Physician's Assistant, Orthopedics Surgery
- Nancy Pepke, Coordinator, Lung Transplants, UPMC
- Dr. Grant Martsof, University of Pittsburgh Professor, School of Nursing (middle school and high school only)
- Annie McKenna, Clinical Nutritionist
- Dr. Lucy Rambacher, Chiropractor

# 2020-2021 Course Offerings for Weekly Classes

## Middle School

### Literature

When: First period

Length: 90 minutes

#### Experiencing History through Literature

**Course Description:** Throughout the course, students were exposed to European and American history dating from the Civil War until modern times. With the use of both historical fiction and nonfiction, students emerged with a greater understanding of literature, vocabulary, culture, and history.

Book list:

- *Rifles for Watie* by Harold Keith
- *Dragon's Gate* by Laurewnce Yep
- *Carver: A Life in Poems* by Marilyn Nelson
- *The Land* by Mildred Taylor
- \*WWI variety of The Christmas Truce
- <https://thechildrenswar.blogspot.com/2017/12/christmas-truce-1914.html>
- *Nothing to Fear* by Jackie French Koller
- *The Winged Watchman* by Hilda Van Stockum
- *The Borrowed House* by Hilda Van Stockum
- *The Boy on the Wooden Box* by Leon Leyson – biography

## **Middle School Science**

### Human Anatomy and Physiology

When: Second period

Length: 90 minutes

**Course Description:** Students covered the major organ systems and how to help our bodies stay healthy. Students also covered the existence of our soul and how to help our soul stay healthy. This approach allows the students to study the ‘whole person,’ both body and soul.

### Middle School Science Lab Work Completed at JPII Co-op

#### Model Organisms Lab Workshop

Model Organisms introduces students to eight examples of model organisms used in scientific research, including an organism (planaria) used to study regeneration and examples of asexual reproduction in plants. By observing these organisms, students learn why we use model systems, the advantages and disadvantages of each organism, and how each model organisms fits specific research scenarios.

#### Ectotherm ER: Frogs Under the Weather

This lab experiment is based on the current research of Dr. Richards-Zawacki, University of Pittsburgh, whose lab investigates how climate change and host/pathogen ecology shapes the dynamics of wildlife diseases. Students investigate possible causes for amphibian declines through an experiment that uses thermal model agar frogs to learn how changes in climate impact frog survival. Students implement the scientific method: formulate hypothesis, design an experiment procedure, implement the experimental procedure, collect data, analyze the data, and draw conclusions. High school students authored a lab report about their experiment experience.

#### Outbreak Simulation

"Outbreak" is a simulation that uses the concept of infectious disease to allow students to analyze data, formulate relevant questions, and test/revise hypotheses. Students are presented with a scenario and provided data to analyze. They must use critical analysis and inquiry-based thinking to solve the case of a possible outbreak.

In the scenario, the causative agent is unknown. It is not known if the "disease" is contagious or due to environmental factors. Teachers and students play the part of agents representing the Center for Disease Control. It is up to the class to analyze existing facts and data and ask the pertinent questions that will allow investigation to proceed to hypothesis, hypothesis testing, and

diagnosis so that the outbreak can be controlled. During the exercise, students will become acquainted with current science and technology (PCR, electron microscopy, electrophoresis, cell culture), as well as problem solving techniques. Students are asked to determine the cause of the illness and provide treatment recommendations.

The Outbreak Simulation “disease” is compared and contrasted to COVID-19 and the current worldwide pandemic. Students receive an overview of vaccines and development of the polio vaccine by Dr. Jonas Salk at the University of Pittsburgh. Finally, students take a ‘virtual’ field trip of the places at the University of Pittsburgh where research is currently conducted for the COVID-19 vaccines.

### Microscope Workshop

Students learn the history of the microscope, types of microscopes and make observations of specimens under a lab-grade dissection microscope (from the University of Pittsburgh, Department of Biological Sciences). Students, who also make observations of specimens under a compound microscope, compare and contrast their observations from both the dissection and compound microscopes. Students gain appreciation of God’s creation by making microscope-magnified observations of specimens, in addition to viewing the specimens with the naked eye.

### Fetal Pig Dissection

Dissection of a fetal pig is useful to help students better understand the body systems studied in the human anatomy and physiology science courses. A fetal pig is an excellent dissection specimen because it shares a number of comparable traits with humans: both are mammals and both have all of the same thoracic and abdominal organs as humans.

In fact, pig skin tissues and heart valves are used in medicine because of their compatibility with the human body.

## **Middle School Electives**

All of these electives and guest speakers occur during third period and are one hour long.

### Scrapbooking

**Course Description:** This class allows students to purchase a scrapbook and create pages based on a theme. Students will work with their own photos by cropping them and arranging them in different page layouts. Solid colored and patterns papers as well as other embellishments can be included.

### Pennsylvania History

**Course Description:** We reviewed different types of maps, the names and location of the sixty-seven counties, state symbols, when and how Pennsylvania was founded, and the top ethnicities that comprise seventy-three percent of the population (as of the year 2000). We walked through a timeline from 1497 to 1856, exploring Pennsylvania ‘firsts’, battles fought on Pennsylvanian soil, Depreciation Lands, the Erie Triangle, the Whiskey Rebellion, some Catholic Church history in Pennsylvania, and some national events. We ended with a multiple-choice challenge that we executed on Kahoots.

### Shakespeare’s Hamlet

**Course Description:** Shakespeare was offered for six weeks and the students read Hamlet aloud together. We also took time to discuss characters, language and theme, as well as to act out a few scenes.

### Engineering, Bridge Building

**Course Description:** The Bridge engineering class introduced students to all the bridge types, summarized the forces (tension and compression) and how each of these forces were applied in all bridge types. Some interesting bridge history and bridge failures were covered. The instructor also shared her experiences of supervising an entire bridge replacement project through all phases of construction.

### Astronomy

**Course Description:** Astronomy explored the relative sizes of the sun to the planets, relative distances of the sun to the planets, and how a telescope works. Students practiced using a real telescope. Students used different materials to make a model of the solar system. Students then used this model to predict how large the planets would be if the sun was shrunk to a diameter of 4 feet. Students also conducted an outdoor activity to measure the scale of the solar system and the distance between planets if the sun was the size of a marble. Students learned about different types of telescopes, including a reflector telescope, a refractor telescope, and a hybrid of the two telescopes. Students looked through a hybrid telescope.

## Art

**Course Description:** The art class utilized a variety of mediums in a picture study style where we studied the artist and their technique and then students practiced the techniques in their own artwork.

## Guest Speakers

### Co-op Students:

- Regina Anand, Co-op High School Student, Science Workshop
  - Overview of the Scientific Method
  - How to do a Science Project at Home
  - What is Gained/Learned from a Conducting a Science Project
  - Explanation of Area Science Fairs
  - Overview of 2020-2021 Study: *Pyrocystis fusiformis*
  - Provided opportunity for close observation of the marine organisms in their 'nighttime' darkness
- Magdalen McDermott, Co-op Middle School Student, Microscope Workshop
  - History of the Microscope
  - Types of Microscopes
  - Costs of Microscopes

### Co-op Mothers:

- Mrs. Jen Hemphill- Writer
- Mrs. Wendy Novotnak- Civil Engineering, Bridge Building & Overview of Microscopes
- Mrs. Jen Doering, C.P.A.- Accounting

### Local Professionals:

Each of these speakers explained their discernment of their professional vocation and how their faith impacts their work. They described their professional work to the students and how they combine their work-related responsibilities with their faith and family.

- Dr. Anthony Pizon, Emergency Room Physician
- Meg Alexander, Physician's Assistant, Orthopedics Surgery
- Nancy Pepke, Coordinator, Lung Transplants, UPMC
- Dr. Grant Martsof, University of Pittsburgh Professor, School of Nursing (middle school and high school only)
- Annie McKenna, Clinical Nutritionist
- Dr. Lucy Rambacher, Chiropractor

# 2020-2021 Course Offerings for Weekly Classes

## Elementary School (grades 1-5)

### **Literature**

When: First period

Length: 90 minutes

#### Literature, Geography, and Culture History through Literature

**Course Description:** The students learned about Western Europe, South America, Asia and Africa by studying geography, literature and culture from selected nations. A variety of learning activities were incorporated, such as: reading books aloud, videos, journaling, map work, teacher and student presentations, and art activities. Homework included reading assignments, journaling, preparing presentations, and watching videos. Students kept a journal portfolio with their work.

## Elementary Science

When: Second period

Length: 90 minutes

### Human Anatomy and Physiology

**Course Description:** The students covered all of the major body systems. The learning formats have included lab demonstrations and body-themed art inspired by major artists (such as Matisse-inspired circulatory system collages). Homework has included reading assignments, workbook pages, videos and presentation prep. Students have completed note pages and diagrams to be assembled into a student-authored body book by the end of the year.

### Elementary Science Lab Work at JPPI Co-op

#### Model Organisms Lab Workshop

Model Organisms introduces students to eight examples of model organisms used in scientific research, including an organism (planaria) used to study regeneration and examples of asexual reproduction in plants. By observing these organisms, students learn why we use model systems, the advantages and disadvantages of each organism, and how each model organisms fits specific research scenarios.

#### Ectotherm ER: Frogs Under The Weather

This lab experiment is based on the current research of Dr. Richards-Zawacki, University of Pittsburgh, whose lab investigates how climate change and host/pathogen ecology shapes the dynamics of wildlife diseases. Students investigate possible causes for amphibian declines through an experiment that uses thermal model agar frogs and temperature guns to learn how changes in climate impact frog survival. Students implement the scientific method: formulate hypothesis, design an experiment procedure, implement the experimental procedure, collect data, analyze the data, and draw conclusions.

#### Microscope Workshop

Students learn the history of the microscope, types of microscopes and make observations of specimens under a lab-grade dissection microscope (from the University of Pittsburgh, Department of Biological Sciences). Students, who also make observations of specimens under a compound microscope, compare and contrast their observations from both the dissection and compound microscopes. Students gain appreciation of God's creation by making microscope-magnified observations of specimens, in addition to viewing the specimens with the naked eye.

## Fetal Pig Dissection Observation

Dissection of a fetal pig is useful to help students better understand the body systems studied in the human anatomy and physiology science courses. A fetal pig is an excellent dissection specimen because it shares a number of comparable traits with humans: both are mammals and both have all of the same thoracic and abdominal organs as humans.

In fact, pig skin tissues and heart valves are used in medicine because of their compatibility with the human body.

## **Elementary Electives**

All of these electives were one hour long.

### India

An introduction to the culture, languages and geography of India. Presented by Mrs. Anita Anand and her daughter, Regina.

### Art

The art class utilized a variety of mediums in a picture study style where we studied the artist and their technique and then students practiced the techniques in their own artwork.

### Astronomy

Astronomy explored the relative sizes of the sun to the planets, relative distances of the sun to the planets, and students got to learn how a telescope works and use a real telescope. If the sun was shrunk down to 4 feet across, how big would the planets be? Students got to use different materials to make the planets for such a model of the solar system. If the sun was shrunk down to the size of a large marble, how far away would all the planets be? Students went outside to measure those distances (at this scale for the solar system, some of the planets would be extremely hard to see). Students learned about how a reflector telescope, a refractor telescope, and a hybrid of the two telescopes work, and looked through a hybrid telescope.

### Engineering, Bridge Building

The class introduced students to all types of bridges, defined the forces (tension and compression) and provided hands-on experiments to demonstrate each of these forces. Some interesting bridge history and bridge failures were covered. The instructor also shared her experiences of supervising an entire bridge replacement project through all phases of construction.

### Pennsylvania History

Since the students had done map work throughout the year, this class focused on using maps and worksheets to learn the bordering states of PA, the sixty-seven counties, topography, and physical land characteristics. This information was interspersed with how/why Pennsylvania came to be and some fun trivia. The class explored state symbols, Pennsylvania 'firsts,' and historical sites.

### Stations of the Cross

In Lent, the elementary students prayed the Stations of the Cross in the main church.

## Guest Speakers

### Co-op Students:

- Regina Anand, Co-op High School Student, Science Workshop
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## PreSchool Age Group

The preschoolers do not have a specific curriculum, but their day follows the same basic structure each week.

Each day starts with a prayer and the Pledge of Allegiance. In the morning, they have some read-alouds and a craft or art project, often seasonally themed. Time is also given for playing outside.

After lunch, the children spend about an hour and a half outside, playing games in the parking lot and /or taking a walk or hike around the campus of SSJP. Getting outdoor time is essential in all but the worst weather! Also, there are more read-alouds and some fine-motor activities.

The preschool children joined the Elementary class for the India presentation and joined the older students for the following programs:

- **Eucharistic Adoration**

Fr. Joe met with all weekly families in the main church to provide an overview of Eucharistic Adoration, including why it is important and the benefits of spending time with our Lord in Eucharistic Adoration. The program concluded with Eucharistic Adoration in the main church exclusively for the JPII Co-op.

- **Model Organisms Lab Workshop**

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- Annie McKenna, Clinical Nutritionist

## Testimonials from JPPI Co-op Moms

“Good friendships are formed among our children.”  
Sheflynn S.

“We have had a few health care professionals come in and talk to the kids about their work and vocations. The kids have interacted with an ER doctor, multiple nurses, including a lung transplant nurse, and a public policy expert and researcher. These interactions are specifically helpful for the [students] as they begin to think about their own future vocations. Overall, JPPI C-op has been a good year for my [child] to be in community with other thoughtful and fun kids his age.” Jen H.

“Being a part of JPPI Co-op has been a huge blessing for our family over the past three years! With 6 children spanning elementary to high school, my husband and I were drawn to the Co-op’s devotion to the Catholic faith and its academically-focused classes (science and literature) for all the grade levels. We love being able to learn from and teach alongside other Catholic families who are deeply rooted in the love of Christ, the living out of our Catholic faith, and the conviction that God’s truth, beauty, and goodness can be seen in all the academic disciplines.

A handful of the many highlights from our engagement with JPPI Co-op over the past 3 years includes:

--the incorporation of faith into the science classes. (*The Catechism of the Catholic Church* has been on the high school science class syllabus every year!) The high school and middle school anatomy classes, for example, have incorporated a discussion of Theology of the Body, and the elementary students have been encouraged to reflect on how intricately and wonderfully God designed each of our body’s systems to work for our good.

--the opportunity to participate in a missions trip in Colonia, Mexico and to make a pilgrimage to Our Lady of Guadeloupe alongside other Co-op families

--many wonderful guest speakers, lab opportunities, and field trips

--being part of a community of parents and children that pray for and encourage one another”

Darrah M.