savy

SUMMER ACADEMY

AT VANDERBILT FOR THE YOUNG

2019 Catalog

Rising 1st–6th Grades

SESSION 1: JUNE 10–14

SESSION 2: JUNE 17–21

SESSION 3: JUNE 24–28

SESSION 4: JULY 8–12

SESSION 5: JULY 15–19

SESSION 6: JULY 22–26

CAREER CONNECTIONS

Rising 7th Grade

SESSION 1: JULY 8–12

SESSION 2: JULY 15–19

SESSION 3: JULY 22–26

VANDERBILT PROGRAMS FOR TALENTED YOUTH

Developing talent in gifted students and those who work with them

savy Summer Academy at Vanderbilt for the Young

Founder
Camilla Benbow,
Patricia and Rodes Hart Dean of
Education and Human Development

Executive Director, PTY
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Karen Daniels

"I welcome your young scholar to campus, and I trust that the opportunities for interaction with like academic peers and work with leading content experts will be an unforgettable and life-changing event for your child."

— TAMRA STAMBAUGH , PH.D.
Executive Director, Vanderbilt Programs for Talented Youth
Research Associate Professor, Peabody College

VANDERBILT UNIVERSITY

Dear Parents,

At Vanderbilt Programs for Talented Youth (PTY), we strive to offer academically advanced students experiences that will ignite their passion for knowledge, cultivate new interests, and spur creativity. If you are looking for an unforgettable summer experience for your child, where he/she will be encouraged to delve deeply into a discipline of interest alongside other academically advanced peers, then we hope you consider Summer Academy at Vanderbilt for the Young (SAVY).

SAVY courses are specifically designed for motivated gifted students. We know from research and experience that SAVY students receive social, emotional, and intellectual benefits from being in a classroom with other academically advanced peers. Our small classes engage students by stimulating critical thinking, problem solving, and reasoning skills while providing a supportive, dynamic environment that encourages students to take intellectual risks as they experience challenging material. Vanderbilt scholars, content experts, and esteemed teachers who have experience in leading gifted learners teach SAVY's hands-on, accelerated courses. Our instructors provide opportunities for students to take an in-depth look at a content discipline and encourage students to practice scholarly habits. SAVY students are also quick to say our courses are fun. New friendships form during Vanderbilt lab visits, group projects, class debates, scientific research, writing workshops, literary analysis, and mathematical challenges!

Our mission at PTY is to develop talent in gifted students and those who work with them. All PTY programs, including SAVY, are grounded in a large body of research documenting the need for accelerated academic learning programs for young students and the need for professional and family supports for those working with gifted learners. In addition to our Summer SAVY program, PTY offers summer residential programs for advanced middle and high school students, academic year opportunities for K-10 grade students, support for parents, and training for educators of gifted students. We are here to support you as you work to support your academically advanced learner. Stay connected to PTY by visiting the PTY website, signing up for our newsletter, and following us on Facebook, Twitter, and Instagram.

We hope that your child will choose to join us on Vanderbilt campus this summer. There is never a dull moment when academically advanced students and passionate educators come together on the campus of an esteemed university.

Sincerely,

Sarah DeLisle

Sarah DeLisle, Ed.D.

Director, SAVY | Assistant Director, PTY

#SAVY2019

Vanderbilt PTY **@VanderbiltPTY** **@VanderbiltPTY**

What We Do

We develop talent in gifted students and those who work with them by:

1.
Offering Saturday and summer pre-collegiate and accelerated programs for gifted students in grades K–12

2.
Supporting families and educators in learning more about gifted students through specially designed workshops, conferences, and course work

3.
Conducting research and publishing evidence-supported articles, books, and curricula for educators and parents

4.
Creating community partnerships and seeking outside funding to support the talent development of gifted students from low-income and underrepresented backgrounds

About Programs for Talented Youth

PTY History

In 2000, PTY was founded by Camilla Benbow, Patricia and Rodes Hart Dean of Education and Human Development and co-director of the Study of Mathematically Precocious Youth. Dean Benbow was the protégé of the original founder of talent searches, Dr. Julian Stanley. When the program was founded, our staff led an academic, accelerated program in the summer for gifted middle and high school students. The program underwent significant changes and restructuring in 2006. Since that time, our student enrollment has tripled, and we now provide year-round accelerated academic course work for gifted students in kindergarten through high school, generally led by Vanderbilt faculty, graduate students, and content experts. From 2008 to the present, we have consistently increased our scope of work to include professional development opportunities for educators, course work in gifted education, academic research related to giftedness and effective services, curriculum development, and work specifically focused on gifted students of low income and underrepresented backgrounds. PTY is led by Executive Director and Associate Research Professor Tamra Stambaugh along with Assistant Director Sarah DeLisle and a talented and dedicated team.

PTY Student Programs

We host students from across the globe. During a typical residential program year, at least 35 different states and at least ten countries other than the U.S. are represented. Day programs for our younger students enjoy representation from multiple states, including Tennessee, Alabama, and Kentucky, and as far away as Texas, Michigan, California, Pennsylvania, and Florida. Approximately 20 percent of our students receive some type of need-based tuition reduction. Through student programs, Vanderbilt faculty and content experts teach accelerated courses that focus on:

- **Exposure** to a variety of accelerated content areas in which students have documented potential and interest

- **Efficacy** in one's ability to perform rigorous tasks in a content area and development of social-emotional habits of a scholar.
- **Expertise** and in-depth learning in an area of interest and talent

Why Should We Consider Out-of-School Programs for the Gifted?

When gifted students participate in extracurricular, accelerated academic programs, such as those offered by Vanderbilt Programs for Talented Youth, they:

- Are more likely to take advanced high school courses
- Are more likely to seek admittance into a highly selective college after high school
- Are more likely to pursue professional careers in advanced academic areas
- Enjoy a high level of challenge and pacing, not otherwise provided by many schools
- Gain access to university faculty and content experts earlier in their academic career, which can fuel a lifelong pursuit of a key content area
- Are more likely to take academic risks
- Develop a sense of independence

Specifically our students say that, when comparing one of our programs to their school, they:

- Find our courses more enjoyable and interesting
- Have more opportunities to engage in critical thinking
- Feel more supported and understood by their instructors
- Feel more supported by their peers
- Feel normal and accepted for who they really are
- Are more challenged and not bored

Programs like ours may also curb underachievement tendencies in students who may no longer engage in school because of a lack of interest, slow pacing, or little challenge.

Olszewski-Kubilius, 2006 / Stambaugh, 2010

Why Choose PTY Programs?

- Vanderbilt University is known as a preeminent center for collegiate education and is a tier-one research institution.
- Vanderbilt Peabody College of education and human development has been named one of the top ten graduate schools of education by *U.S. News & World Report* since rankings began and has been ranked number one five times.
- PTY has highly qualified, experienced, and compassionate staff who are experts in their field and understand the academic and social-emotional needs of academically gifted learners.
- Many PTY instructors and consultants are nationally and internationally known and widely published in their respective fields.

A Day in the Life of a SAVY Student

SAMPLE SCHEDULE:

8:30–8:45 a.m.
Arrival

8:45–11:45 a.m.
SAVY Accelerated Courses
(all SAVY students)

11:45 a.m.–12:45 p.m.
Organized Recreational Activities
Lunch (students bring from home)

12:45–3:45 p.m.
Rising 3rd to 6th grade students continue SAVY Accelerated Course

12:45–2:15 p.m.
Rising 1st and 2nd grade students continue SAVY Accelerated Course

2:30–3:30 p.m.
Rising 1st and 2nd grade students: Academic Class Enrichment

3:45–4:00 p.m.
Dismissal

SAVY at a Glance

WHO

Classes are for gifted and high achieving students entering grades 1–6 in the fall of 2019, specifically students who typically test around the 95th percentile on an ability test or in at least one content area on a standardized achievement test. See "eligibility" (pg. 8) for more detailed information on testing requirements. Rising seventh-grade students may attend Career Connections at SAVY. Similar to SAVY, Career Connections is designed for advanced students. See page 6 for additional information about this program.

WHAT

Classes are designed for the academically talented and motivated learner. SAVY offers accelerated courses led by Vanderbilt professors, master teachers, content experts, and graduate students. Class size is limited to approximately 14 students for grades 1–2 and 16 students for grades 3–6. Summer SAVY 2019 offers six sessions; course offerings differ by session. Students may apply for multiple sessions.

WHEN

Session 1:	**June 10–14**	8:45 a.m. to 3:45 p.m.
Session 2:	**June 17–21**	8:45 a.m. to 3:45 p.m.
Session 3:	**June 24–28**	8:45 a.m. to 3:45 p.m.
Session 4:	**July 8–12**	8:45 a.m. to 3:45 p.m.
Session 5:	**July 15–19**	8:45 a.m. to 3:45 p.m.
Session 6:	**July 22–26**	8:45 a.m. to 3:45 p.m.

Visit the SAVY website for extended day childcare options.

Session Structure

Rising first- and second-grade students:
Students participate in one course for the entire week from the offerings for the grade level. This course takes place in the morning and afternoon. In the afternoon, students will also participate in an hour-long Academic Class Enrichment (ACE) led by area educators. This class is designed to extend learning and introduce students to a variety of other fun topics. Students will receive more information about ACE before the start of Summer SAVY.

Rising third- to sixth-grade students:
Students gain experience in a rigorous and engaging environment by participating in an academic course taught by Vanderbilt scholars, graduate students, content experts, or educators. These full-day courses provide an in-depth look into a discipline and expose students to the habits of scholars. Students participate in one course for the entire week.

Organized Recreational Activities (ORA)
All SAVY students have a 25–30 minute period of structured recess that is built into each SAVY day. Led by trained PE teachers from local schools, ORA gives SAVY students a chance to engage socially with grade-level peers in a fun, non-academic setting. ORA typically takes place outdoors on Peabody campus, weather permitting.

WHERE

All classes will be held on Vanderbilt University's Peabody campus.

About Savy Courses

SAVY classes are designed to provide in-depth study on interesting topics, to teach students higher-order thinking skills, and to encourage development of conceptual frameworks for understanding new knowledge. Vanderbilt faculty and graduate students, Programs for Talented Youth, the Center for Gifted Education at the College of William and Mary, and the University of Connecticut have designed much of SAVY's curriculum. Many of the published units used at SAVY have won the Outstanding Curriculum Award from the National Association for Gifted Children, have been well researched, and have been shown to be effective with this unique population of learners.

A Day in the Life of a Career Connections Student

SAMPLE SCHEDULE:

8:30–8:45 a.m.
Arrival

8:45–11:45 a.m.
Accelerated Course

11:45 a.m.–12:15 p.m.
Lunch in the Commons Dining Hall*

12:15–1:30 p.m.
Accelerated Course Continues

1:30–2:00 p.m.
Break/Organized Recreational Activities

2:00–3:45 p.m.
Accelerated Course Continues

3:45–4:00 p.m.
Dismissal

**Students may bring lunch from home to eat in the dining hall or may pre-purchase lunch for the week from the dining hall. Pre-purchase options will be sent after admission into the program.*

Career Connections at SAVY

for Rising Seventh Grade

What is Career Connections?

Career Connections is a program within SAVY that is specifically designed for rising seventh-grade students. Classes within this program have been developed to immerse students in advanced content and career exploration. Career Connections allows students to experience how expert knowledge and skills are applied in different fields, industries, and/or research. Career Connection courses are developed and taught by college professors or graduate students.

How is Career Connections at SAVY different from SAVY?

Similar to SAVY classes, Career Connection courses offer accelerated opportunities where students explore a topic in depth with like-ability peers. Different from SAVY classes, these courses have a particular focus on how content knowledge is applied in unique ways in different fields or industries. Students will gain a better understanding of the importance of knowledge application as they begin to envision possible careers in content areas that most interest them. The option to eat in the Commons Dining Hall, like a college student, is also exciting for Career Connections students.

Where can I see the course descriptions for Career Connections at SAVY?

Career Connection courses are listed in a special section in this catalog following the course descriptions for SAVY Sessions. Course descriptions can also be found on the PTY website (*pty.vanderbilt.edu/savy*).

Are the application and eligibility requirements for Career Connections different from those for SAVY?

The application timeline and eligibility requirements for Career Connections are the same as the SAVY application timeline and eligibility requirements, which are outlined on pages 8–11 in this catalog. Career Connections has the same 48-hour priority application window as SAVY. Financial aid awards are available (see page 11 for details).

The only difference between applying for Career Connections and SAVY is that there is a specific application for Career Connections. The paper application can be found in the insert in this catalog. Students may also apply through PTY's online application process.

Does my seventh grade student have summer options at PTY other than Career Connections?

Yes! In addition to Career Connections at SAVY, rising seventh-grade students may also choose to apply for Session 1 of Vanderbilt Summer Academy. VSA is the middle and high school residential program offered through Programs for Talented Youth. Session 1 VSA hosts rising seventh- and eighth-grade students for a one week experience (June 9–14) while Career Connections offers students week-long day programs in July.

Rising seventh-grade students may choose to attend one or both programs. Students interested in attending both VSA and Career Connections at SAVY will need to complete two separate applications, the VSA application and the Career Connections application. The application process and eligibility requirements for VSA are different from those for Career Connections at SAVY. Also, the priority application window for VSA is at a later date than the Career Connections at SAVY priority window. PTY encourages students to apply during each program's priority window to increase the likelihood of being admitted to a top-choice course. For more information about VSA, visit the VSA website (*pty.vanderbilt.edu/vsa*).

When is Career Connections?

Classes meet at the same time as SAVY Sessions 4, 5, and 6 in July.

SESSION 1:
July 8–12 (8:45 a.m.–3:45 p.m.)

SESSION 2:
July 15–19 (8:45 a.m.–3:45 p.m.)

SESSION 3:
July 22–26 (8:45 a.m.–3:45 p.m.)

Students may register to attend one, two, or three weeks of courses. Each week offers a choice of one of two course options. Students will take one class for the week.

Please visit the SAVY/Career Connections website for extended day childcare options.
pty.vanderbilt.edu/savy

How To Apply

There are two ways to apply for SAVY and Career Connections:

1. Complete the appropriate application online at *pty.vanderbilt.edu/students/savy/*. With this option, you may upload test scores and select a payment method for the $35 nonrefundable application fee.

2. Complete the enclosed application form and mail it to the address listed on the application. Include a check, made payable to Vanderbilt University-PTY, for the $35 nonrefundable application fee. If PTY does not have your child's test scores on file, please include a copy with the application. Faxed or emailed applications are not accepted.

Eligibility

Students who test around the 95th percentile on an ability test or in at least one content area on a standardized achievement test are eligible to participate in courses in their areas of strength. We accept a variety of standardized achievement and ability tests including, but not limited to, the following: RIAS, CogAT, TCAP, ERB, Stanford Achievement Test, OLSAT, Woodcock Johnson, WISC IV/V. Out-of-level standardized assessments are also accepted. While scores around the 95th percentile are typically a strong indication that SAVY is an appropriate curriculum match for a student, PTY recognizes that there are circumstances in which test scores are either unavailable or are not the best indicator of a student's potential. For this reason, alternative indicators of performance may be accepted. Please contact the PTY office for questions about alternative options to determine eligibility. Returning SAVY students do not need to resubmit test scores unless their scores are more than three years old. Students without test scores should work with their schools to obtain documentation of their advanced learning potential.

Admission Process

On Tuesday, January 15, 2019, at noon CT, the application for Summer SAVY 2019 sessions will be posted on the PTY website. There will be a 48-hour application priority window, which will end Thursday, January 17, 2019, at noon CT.

All complete and qualifying applications submitted during the 48-hour priority window have the same chance for placement, regardless of the specific time within the window the application was submitted. Upon the close of the window, all applications received will be randomly assigned a number determining their order in the review queue. Applications of siblings will be reviewed and placed simultaneously, space permitting.

Applying during the 48-hour priority application window does not guarantee admission, but it increases your child's chances. We strongly recommend applying during this window. If space in a course remains after the 48-hour priority window, courses will be filled on a first-come, first-serve system, based on availability and eligibility. A waiting list will be maintained for full courses.

Course Placement

SAVY courses are accelerated and specifically designed for academically gifted students. The best way to help your child select appropriate courses is to consider your student's areas of strength and interest. If your child is interested in taking more than one course in a session, please rank the courses in order of his or her preference, with 1 indicating your child's first choice. Ranking multiple courses and sessions increases your child's chance of admission to the SAVY program, but keep in mind that your child could be placed in any class or session that you rank. Classes fill very quickly, and we sometimes have to place students in a lower-ranked class. However, we will move your child's placement if a spot opens in his or her first-choice class.

Application Priority Window:

Jan. 15 at noon–
Jan. 17 at noon*

*After window ends, rolling admission is based on availability.

Application fee:

$35

You may apply for multiple summer sessions with the $35 application fee.

Tuition:

$550 per session

Cost per session includes all class materials.
Lunch is not provided for SAVY students. Students need to bring a lunch from home.
Career Connections students may bring a lunch or pre-purchase lunch at Vanderbilt Commons Dining Hall for the week.

Tuition Deadline:

March 1, 2019

Eligible for full refund before March 1, 2019.

Summer Refund Deadline:

April 1, 2019

Eligible for 50% between March 1 and April 1.
No refunds are available after April 1.

Admission Notification

Families will be notified of admissions decisions via email within three weeks of PTY receiving the application. If everything is complete, you will receive communication about placement. If materials are missing, PTY will notify you as soon as possible with a request for more information and with accompanying deadlines. For families who have applied for financial aid, financial aid information may be included in the admission notice if all materials have already been submitted. The admission notice will include the tuition statement. Summer tuition is due March 1, 2019.

Welcome Paperwork

Before the start date of the program, families will receive a packet of required welcome paperwork. Required paperwork includes emergency contact information, participant permission, medical and allergy information, and a media release. All students who participate in programs through Programs for Talented Youth must have current health insurance documentation on file with PTY.

Waiting List

Courses fill very quickly and waiting lists are maintained for all full courses. If no openings remain in a student's first-choice course at the time an application is reviewed, PTY's staff will look to see if a seat is available in a student's second-choice course, and so on. Even if a student is placed in a lower-ranked course (due to availability), the child will remain on the waiting list for a higher-ranked course. If a seat becomes available in a higher-ranked course, PTY will move the first student on the waiting list into that seat. Waiting lists are held until close to the start of the program session, and families are encouraged to continue to check on the status of their child's position on the waiting list.

Cancellation Policy

Cancellations made before the tuition due date (March 1) will be eligible for a 100 percent tuition refund. Cancellations made after the tuition due date and before the refund deadline (April 1) will be eligible for a 50 percent refund. After the refund deadline, no tuition refunds will be awarded.

Financial Assistance

PTY is committed to making programs available to academically gifted students regardless of a family's ability to pay the full tuition. Therefore, need-based financial aid is available based on income. You may apply for financial aid at any point in the application process. The PTY application review process is need-blind and does not consider financial status. If you plan to apply for financial aid, you may indicate this on your application. You may access the financial aid application online on the PTY website or complete the paper application included in this catalog. The financial aid application, along with a copy of your household's most recent tax return, may be submitted online or via mail. Your student may be offered admission before receiving a financial aid quote. You are not obligated to officially enroll your student until you receive a financial aid quote. When your financial aid quote is received, you may accept or decline the amount and placement in a course. Partial tuition scholarships and payment plans are available.

Questions

Contact Summer SAVY Summer Assistant Director, Emilie Hall at (615) 322-8261 or *emilie.p.hall@vanderbilt.edu*, if you have questions about the admissions process, financial aid, setting up a payment plan, or assessment.

SESSION 1: June 10–14 Course Descriptions

RISING FIRST AND SECOND GRADES

FORENSIC SCIENCE

We have a mystery on our hands, and we need your help to solve it! Someone has stolen a very important tool from our classroom but we don't know who. How do we begin to solve this mystery? How would a detective in the field approach the case? What information can we gather from the scene and how do we analyze and extract meaning from it? Using the scientific method as our guide, we will develop hypotheses, conduct experiments, and analyze information to figure out the case of the missing microscope. Together we will take on the role of biologists, chemists, and researchers as we practice different techniques such as DNA extraction, chromatography, and fingerprint analysis to solve tricky cases. After collecting and studying evidence, we will make predictions about what we think happened and debate our ideas to reach a final conclusion. Will you crack the case?

"At SAVY, the **fun experiments** helped me learn in new ways."

PLAYING WITH WORDS*

Are you a teller of stories and jokes? Do you coin new phrases? Are you a fan of riddles and rhymes? If so, then you, my friend, like to play with words! In this class, you'll see how authors use words and phrases to capture their readers through laughter and complex thought. Learn to recognize special literary devices, such as similes, metaphors, symbols, and personification; all tools that writers use to better communicate their ideas. You too can experiment with figurative language and wordplay, the very same tools that writers have used for centuries! A picture may be worth a thousand words, but a thousand words can paint a pretty awesome picture.

**Course adapted from an evidence-supported curriculum, Beyond Words, from the College of William and Mary.*

RISING THIRD AND FOURTH GRADES

TREMENDOUS TRANSFORMATIONS IN WRITING*

Have you ever wondered what happened to Humpty Dumpty after his fall? What if the Diary of a Wimpy Kid was told from a different character's perspective? Authors have the unique opportunity to shape stories and messages using a variety of writing elements. Designed specifically for the student with a flair for the written word, this class will explore the way that authors use transformations to guide a reader toward a story's central meaning. How does the evolution of a character build the reader's understanding of the story's whole? How do words and images within a story alter our thinking? How can the actions of others change the world as we know it? Through the lens of transformations you will examine both narrative and persuasive elements essential to the development of stories and arguments. Using powerful famous speeches, short stories, and personal narratives as your guide, you will uncover your own creative and persuasive voice, transforming yourself into the writer you have always wanted to be!

**Course adapted from an evidence-supported curriculum, Transformations in Stories and Arguments, by Vanderbilt Programs for Talented Youth.*

"I have never seen another program **capture my child's attention** every single day, every single class!"

"At SAVY you get to **use your mind** while having fun and meeting new people."

CHEMICAL SPILL!*

A truck carrying an unidentified liquid has crashed on a busy highway and has started to leak its liquid into a nearby creek. The city is counting on you to make sure there are no negative repercussions from this spill! In this class you will take on the role of an environmental scientist. How are you going to isolate the spill? What experiments will you need to conduct to determine if the liquid is dangerous? How will you keep people and animals in the surrounding environment safe? Through a series of role-play examples, scientific experimentation, and the study of complex systems, you will learn about acid and base chemistry as you solve key problems related to the spill. We will examine the damaging effects that such an event can have on the ecosystem, economy, and human transportation. Are you ready for the challenge of coming up with an appropriate solution? The city needs your help!

**Course adapted from an evidence-supported science curriculum, Acid, Acid Everywhere, from the College of William and Mary.*

UNCOVERING SECRETS OF THE PAST: ARCHAEOLOGY 101*

If you love puzzles and history, and don't mind getting a little dirty, then this class is for you! A construction company in your town is tearing down an old school building when they come across some artifacts buried in the ground. As a budding archaeologist working at a museum, you've been hired to explore the grounds and investigate the treasures they've unearthed. But what are these artifacts? Where did they come from and what can they tell us about the past? As you try to answer these challenging questions, you will learn about the tools and technology of archaeologists, excavate your own mock archaeological site, analyze artifacts, and draw conclusions about the relics you find. Come along as we dig for answers and unearth clues to the past– who knows what knowledge you might uncover!

**Course adapted from an evidence-supported curriculum, What a Find!, from the College of William and Mary.*

RISING FIFTH AND SIXTH GRADES

POWERING OUR PLANET: NUCLEAR SCIENCE AND ENERGY*

Did you know that approximately 20% of the United State's electricity is generated by nuclear power plants? But, is a nuclear power an efficient, reliable, and clean method for generating energy or a threat to the environment and humans? In this class you will learn how nuclear power plants create energy and generate and remove radioactive waste. Then, assume the role of a community leader and help the mayor decide whether or not a nuclear power plant in your area is permitted to expand the methods they use for getting rid of radioactive waste. How will you vote? Is nuclear energy "friend or foe"?

**Course adapted from an evidence-supported curriculum, Nuclear Energy: Friend or Foe?, from the College of William and Mary.*

"The courses are so much fun because we learn things we **wouldn't be able to learn anywhere else** until we are older."

THEORY, CRITICISM, AND THE FORCE

Artists often use their work to represent viewpoints about the everyday world around us, embedding their cultural, social, and political ideas into their stories, films, paintings, or songs. How do we decipher the themes hidden in their work? Why do we even want to identify these themes? How can uncovering the creator's viewpoint help us understand both the work itself and the world around us better? In this class, we will use the 1977 film Star Wars: Episode IV – A New Hope as a base to learn how to unpack a work through multiple lenses of critical theory and thought. Formalism, structuralism, political criticism, and mythology are some of lenses we will learn to look through as we explore one of the most popular series of our time. Through our analysis of the Star Wars movie that started it all, we will learn how to apply critical theory to other portions of the Star Wars saga and other famous series and films. Because critical thought can and should be used when interpreting all artistic works, we will also practice our newly developed skills on our favorite short stories, classical artwork, and contemporary music. A new powerful force will be with you after this course – the ability to see your favorite works in different ways!

"I really like how the work was **challenging, but also fun,** so time flew!"

SESSION 2: June 17–21 Course Descriptions

RISING FIRST AND SECOND GRADE

ANIMAL ADAPTATIONS*

Have you ever wondered how animals can sense when danger is near? Are you curious about why groups of birds sometimes fly in formation? Do you ponder how some animals can survive in the blistering heat of the desert or in the coldest months of winter? If so, you are already thinking like a zoologist, a scientist who studies animals! In this course, we will investigate the ways that animals survive and thrive on our planet. Together we will learn about the characteristics that make animal species different and examine the unique habitats that different animals call home. We will also study characteristics of living things, learn about animal life cycles through observations of your very own pet mealworm, and determine what type of habitats are best for different creatures. You will then take on the role of scientist and animal advocate as we try to tackle serious questions related to environmental preservation and animal protection. If you love animals and enjoy science, then you will certainly thrive in this class!

**Course adapted from an evidence-supported curriculum, Survive and Thrive, from the College of William and Mary.*

"Our son comes home from SAVY wanting to **learn more, know more, and experience more.** Who could ask for more than that?"

"SAVY mixes academics with **creativity.**"

ENVIRONMENTAL EXPLORATIONS*

We just received a message from an environmentalist on Queen Anne's Island. The inhabitants are in trouble – their island is slowly eroding away! Can you help them? Bring your best investigation skills and get ready to take on the role of environmental scientist as you help solve this scientific mystery. What do you need to know in order to tackle this challenge? Together with your instructor and classmates, you will learn about topics such as resource preservation, pollution, erosion, and conservation through hands-on experimentation. Then decide how you will help save the island based on the experiments you have tried. Hurry, time is running out! We need your help to dig into the problems surrounding this island and unearth a good solution to stop it!

** Course adapted from an evidence-supported curriculum, Dig It, from the College of William and Mary.*

RISING THIRD AND FOURTH GRADES

CULINARY CHEMISTRY

Why do apple slices turn brown when we leave them on our plate too long? What compounds make our food taste sour or salty? In this course, we will learn how science contributes to something we do every day—eat! We will investigate the chemical structures of food components such as carbohydrates, lipids, and vitamins, and learn how these structures make foods look and taste different. We will then analyze the content of these components in a variety of foods, and uncover why some snacks are better for our body than others. Using scientific modeling kits, we will examine how important chemical structures in food change under certain conditions, as well as the role enzymes and microorganisms play in some everyday food processes. Come learn how science and food intertwine with the world of culinary chemistry.

"We love that SAVY fosters our child's love of learning and desire **to dig deeper in search of answers** to his questions and interests."

PROGRAMMING AND ROBOTICS*

Robotic engineers are learners, dreamers, strategists, and creative thinkers. Robots are cool to play with, but how are robots used in the real world? Can robots really help make our lives easier? How do robots turn lines of computer coding into action? What are the thinking processes needed to successfully code a robot to complete a task? Come learn the answers to these questions and more as you challenge your mind and test your creativity by programming Sphero interactive robots! In this course, you will take on the role of a robotics engineer as you brainstorm hands-on solutions to real-world problems through computer programming. You will program how your robot moves, looks, and interacts with apps, including augmented reality games, as you try to solve robotic challenges. After taking this course you will have new ideas about how to use coding and robotics to solve big problems in our world today!

**Sphero robots and code.org will be utilized.*

"I enjoyed having a **fun, interactive teacher** that never let us get bored!"

ECOLOGICAL EXPEDITION: EXPLORING ECOLOGY THROUGH LITERATURE*

Should we kill spiders in our houses? Should animals be kept in zoos? Should a forest be cleared to make way for a much-needed grocery store? In this class, you will become a scientific researcher to investigate these questions and more as we learn about the complex study of ecology. Using the concept of interactions, we will explore interactions between plants, animals, and humans in the environment. If you are a scientist who also loves reading, then this class is for you! Through an interdisciplinary investigation of ecology, we will explore multiple examples from literature that address interactions between plants, animals, and humans as we also investigate interactions of story elements. Come ready to debate big questions in ecology through multiple perspectives. Along the way, we will learn that there is a lot to consider when answering questions about the relationships among living things and the environment. After this ecological expedition you will better understand living organisms and the world they inhabit, just like a professional ecologist!

**Course is adapted from an evidence-based curriculum, Ecology in Literature, from Vanderbilt Programs for Talented Youth.*

RISING FIFTH AND SIXTH GRADES

STORIES AND THE STRUCTURE OF THE UNIVERSE*

What do the following have in common: gravity, a speech from President Barack Obama, space travel, a mobius strip, your favorite short story, and art? They all have a structure! In this class, you will discuss the massive scale of the solar system and Einstein's theory of relativity as you examine how the universe is structured. We'll also talk about the importance of structure in other places, such as creative writing, art, and public speaking, to uncover how authors, poets, and artists structure their work to convey important messages. Learn about gravity, mass, space time and orbit through models and simulations as we draw parallels between science and creative work. We will also read short stories and poems; analyze pieces of art; debate the benefits of space travel and missions to Mars, as we investigate the importance of structure in our universe. If you want to learn more about astronomy and you enjoy reading, you don't want to miss out on this class.

**Course adapted from an evidence-supported curriculum, Story, Space, and Structure, from Vanderbilt Programs for Talented Youth.*

PSYCHOLOGY IN ACTION: DECODING SYMBOLS AND THEIR MEANINGS

Whether you are reading your favorite book, watching television, or working on a math problem, did you know you are interacting with symbols? Symbols can take many forms from caveman drawings, scale models, numbers, and even apps and video. But what exactly are symbols? What kind of information do symbols tell us? How do we learn to interpret and make sense of symbols? By taking on the role of a developmental psychologist, you will investigate how the human mind processes and makes sense of the symbols we interact with every day. Through hands-on experiments, scientific investigation, and a visit to Vanderbilt labs to see research in action, you will uncover how symbols are helpful in our lives and learn how psychologists use numbers and theories to draw conclusions and answer important questions. You will then have a chance to test your own hypothesis as you design a study, collect and analyze data, and present your findings. Experience psychology in action as you use your new knowledge to discover new ideas!

"My son loves the diversity in classes and the **hands-on aspect of working through more complex topics** than what are covered in school."

"We love that SAVY helps **expand our conversation** around the dinner table."

SESSION 3: June 24–28 Course Descriptions

RISING FIRST AND SECOND GRADES

BEYOND THE PYRAMIDS

When we think of Ancient Egypt we often think about pyramids, mummies, and hieroglyphics, but Ancient Egypt has even more to offer. Did you know that the Ancient Egyptian civilization lasted over 3,000 years? In this course you will take on the role of an anthropologist to investigate how the Egyptians' systems of language, leadership, economics, architecture, and geography created a strong civilization that lasted for thousands of years. What did we learn from the Egyptians and how has it impacted our current way of life? Are there other ideas that we can borrow from the Egyptians to better our society? We will investigate these questions and more as we critically analyze the systems within this society. Don't worry — we will talk about mummies and pyramids too and the role they played in Egyptian's lives. Plus, you'll even get to try your hand at writing Egyptian hieroglyphics!

**Course adapted from an evidence-supported curriculum, Ancient Egypt: Gift of the Nile, from the College of William and Mary.*

DATA DISCOVERERS

Do you like to ask tricky questions and then seek out possible answers? Are you an aspiring scientist or mathematician with a desire to learn more? Do you ever wonder how data and numbers can be used to answer your most intriguing questions? Have you ever wanted to develop your own experiment? This course is sure to be full of new discoveries as you learn how to conduct experiments by collecting, analyzing, and interpreting numerical data using a variety of graphs, charts, and plots. You will experience firsthand the steps of the research process, including how to formulate great research questions, design investigations, create surveys, collect data through questionnaires, analyze results, and present findings to a real audience. Come along for a hands-on, practical mathematical journey where you will be encouraged to ask great questions and use data to uncover possible explanations. You will leave this course discovering opportunities for data collection everywhere!

**Course adapted from an evidence-supported math curriculum, Digging for Data: Collecting, Displaying, and analyzing Data, from the University of Connecticut.*

"There is nothing better than being in an environment that **makes you feel smart** while challenging you."

"SAVY made learning new things fun. **All the activities were interesting.**"

RISING THIRD AND FOURTH GRADES

THE ONE TO BEAT: USING ALGEBRA TO MAKE AND BREAK RECORDS*

Do you know who holds the record for the longest distance paddled in a bathtub? Or how many jumps the record-holding dog can perform when jumping rope? What about the size of the largest collection of pennies? If you like algebra, interesting facts, and math puzzles, then this is the class for you! Come along as we examine some wacky world records and learn how to interpret algebraic equations, identify variables, create charts, and make predictions using different kinds of graphs. We will conduct experiments to practice recording, interpreting, and analyzing our own data and result. We will put our algebra skills to the test as we try to calculate how to break world record. Who knows– we may leave this class with ideas about how to get our name in the Guiness Book of World Records!

**Course adapted from an evidence-based Math curriculum, Record Makers and Breakers, from the University of Connecticut.*

STUDYING THE MIND: PSYCHOLOGY AND EXPERIMENTAL DESIGN

What happens in the brain when people think? How do psychologists study the human mind even though they can't observe what people are thinking? What sorts of experiments helped shape the field of psychology as we know it? In this class we will learn first-hand how psychologists study what the human eyes cannot see – our thoughts! Through discussion, hands-on experiments, and maybe even a visit to a Vanderbilt lab, you will learn the methods psychologists use to figure out how people think and how the brain and mind works. We will investigate famous experiments in psychology and brainstorm new ideas for future studies as we take on the role of researchers. Be ready to use your new knowledge to create, test, and report findings to your very own question about the mysterious and fascinating human mind. Come along for an investigation of psychology and experiments that will really make you think!

STORIES GALORE! THE MANY GENRES OF FICTION

Flying horses, laser-shooting robots, clever detectives and mysterious ghosts! All these characters have one thing in common: They can help make a great story. However, based on the type of story, some characters may be included while others are saved for a different tale. If you like to write about spaceships, you're probably writing science fiction, but if you write about dragons, then you're writing fantasy. These different types of stories are called genres and in this class, you will take a tour of the many genres of fiction to uncover the themes, ideas, and elements that make up each one. We'll examine the characteristics of the genre, get to know some authors, and, most importantly, practice writing our own stories in these different genres for ourselves. We'll jumpstart our imaginations with some hands-on brainstorming and hone our writing skills by practicing with some of the biggest tools of fiction: plot, character, setting, point of view, and imagery. By the end of the week, you'll have authored your very own multi-genre collection of stories. Get ready to create all kinds of fiction, from mysteries to comedies—and discover some new favorites in the process!

"After taking my SAVY class, I realized **I have more to see and learn."**

RISING FIFTH AND SIXTH GRADES

THE STORY'S SILHOUETTE: ARCHETYPES IN LITERATURE*

Have you ever heard the saying "Imitation is the sincerest form of flattery?" In literature this saying rings true with archetypes, characters or storylines that have been used as models for authors and screenwriters for centuries. From damsels in distress and evil geniuses, to the hero's journey and the struggle between good and evil, archetypes can be found in all different types of literature and media. Through the concept of encounters, you will examine the patterns, symbols, and motifs associated with common archetypes as you analyze primary source documents, literature, art, and popular media. Together we will follow various archetype encounters with conflicts and challenges to explore questions such as "How do archetypes reflect the human experience?" and "How do archetypes reveal human strengths and weaknesses?" After this class, you will find the silhouette behind the story, as the story itself sheds a whole new light.

**Course adapted from an evidence-based curriculum, Encounters with Archetypes, from Vanderbilt Programs for Talented Youth*

"I love visiting **a lab** and actually seeing the machines we had just learned about."

POWERFUL PROGRAMMING: USING AGENT-BASED PROGRAMMING TO PROBLEM SOLVE

What do traffic gridlock, predation between populations of wolves and sheep, the spread of wildfires, and models of civil disobedience have in common? Answer: Patterns! The patterns that exist within each of these problems can all be visually represented using powerful software in order to help experts build understanding and create possible solutions. In this class, you will construct dynamic computational artwork using NetLogo, the leading agent-based modeling (ABM) platform as you learn about coordinated placement, coloring, and movement of distributed 'agents' or features. Developing visual representations in NetLogo is a playful entry point to a powerful programming language that is commonly used in network theory, materials science, and environmental engineering. Join us as we harness the power of agent-based programing to understand and solve real world problems.

SESSION 4: July 8–12 Course Descriptions

RISING FIRST AND SECOND GRADES

INTRO TO CODING AND ROBOTICS

Computer programmers are learners, dreamers, strategists, and creative thinkers as they develop complex codes to solve everyday problems. The skill of coding is becoming more and more important in our technology-driven world. Being able to code may be fun and sound cool to your friends, but how is coding used in real life? In what ways do computer programmers help make our lives easier? How do computer programmers turn lines of code into action? What are the thinking processes and personal characteristics needed to write successful code? Come learn the answers to these questions and more as you challenge your mind and test your creativity while learning the basics of computer programming! In this introductory coding course, you will take on the role of a programmer to solve coding challenges by developing working scripts based on your level of ability. By the end of the course you will have plenty of new ideas about how to use coding to solve small and big challenges in our world today, and you will have the knowledge of coding required to develop creative and useful solutions to all sorts of difficult problems.

"SAVY has rejuvenated my child's **love of learning** and stimulated her interest. The staff 'get' my child."

"There were so many **people I could relate to** at SAVY."

CREATIVE CONTRAPTIONS: A STUDY OF INVENTIONS

Do you have chores to do at home? Do you want to make your work easier? Perhaps you want to become the world's next inventor. How do you come up with good ideas? Maybe you have heard the phrase "Necessity is the mother of invention"? What does that mean? In this class we will conduct investigations to learn more about simple and compound machines and how these machines can make work easier. We will learn about famous inventors, their lives, and how they came up with ideas for their creations. Then, it's your turn! Apply what you have learned to design, create, and test your own invention that solves a problem or makes your life or work easier. Who knows, you may be the next Shark Tank sensation!

**Course adapted from an evidence-supported curriculum, Invitation to Invent, from the College of William and Mary.*

RISING THIRD AND FOURTH GRADES

FRACTIONS AT WORK

It's a rainy day and two siblings have just uncovered a mysterious trunk in their grandmother's attic! The trunk is full of old artifacts from their great grandparents' general store, The Rabbit Hutch General Store, which operated long ago. But what is hidden in the trunk? What do these artifacts tell us about what the store, and its owners, were like? Using fractions and the clues from the attic, we will piece together stories from the past as you learn new techniques to help you solve even the most challenging mathematics equations. You will practice using tricks such as common numerators, common denominators, and missing pieces of the whole to analyze items from the old store. Through modeling, drawing, and charting, you will learn new and exciting ways to approach mathematical operations involving fractions and wow your family and friends with your new skills! We will even talk about where fractions are hidden in our everyday lives. After this class you will never look at objects, or their pieces and parts, in the same way again. What kind of unexpected mathematical treasures will you uncover in this mysterious adventure with fractions?

**Course adapted from an evidence-supported math curriculum, Treasures from the Attic, from the University of Connecticut.*

JOURNEY THROUGH TIME: AN INVESTIGATION OF COLONIAL AMERICA*

What really happened in the early colonies of America? What different groups lived during this time and how did they work together? How was life in one colony different or similar to life in another? Bring your best investigation skills as we take a trip back in time to the exciting world of Colonial America and discover how settlers, English colonists, and Native Americans lived and interacted with each other. With primary sources as our guide, we will uncover facts about the lives and experiences of the people who lived in the colonies. You will read, examine, and discuss historical documents to learn about the economic, social, and political systems at play during this time of growth in America. This is one voyage through history and literature you won't want to miss!

**Course adapted from an evidence-supported curriculum, Building A New System: Colonial America 1607-1763, from the College of William and Mary.*

"SAVY is **fun and engaging** without the pressure and stress that is sometimes experienced at school."

CIRCUITRY, SYSTEMS, AND DESIGN: ELECTRICAL ENGINEERING

Imagine that you are a newly hired engineer for the local power company. The city wants to build a special recreational complex and they need your help. There is a lot to learn about how to design and wire the complex so that it passes inspection and can withstand the stresses of weather and people. In this course we will take on the role of an electrical engineer and learn about currents, circuits, systems, and electricity. Come ready to design your own electrical system for the new building, but watch out – you never know when a storm may hit. Can your design withstand it? We won't be left in the dark as you explore the exciting field of electrical engineering.

**Course adapted from an evidence-based curriculum, Electricity City, from the College of William and Mary.*

RISING FIFTH AND SIXTH GRADES

PUZZLES AND PROBLEM SOLVING

How would a group of logical pirates agree to distribute their loot? If a car changes its speed according to its distance from its final destination, how long does it take the car to reach its goal? How many ways can people sit in a full airplane when the first passenger to board ignores his or her assigned seat and takes another seat at random? You can answer these questions and many more in this course as you learn the principles of probability, logic, and game theory. In this hands-on math class, you will explore problem-solving methods by wrapping your mind around counterintuitive solutions and teasing your brain with apparent contradictions. As the class develops, you may even begin to pose your own questions for the class to solve. Get ready to get stumped and stump others in a class that is sure to make you think critically and strategize with precision.

"SAVY connects my child with a challenging topic, engaging peers, and an immersive experience on a university campus where **he can think critically and challenge his brain.**"

WORLD BEYOND THE PAGE: UNPACKING THE MAGIC OF HARRY POTTER

Would you consider yourself a huge fan of Harry Potter? Are you still waiting for your Hogwarts letter to come? Well here's your invitation to join us for a week-long investigation into the complex and magical universe of the wizarding world of Harry Potter! Harry Potter is more than just a series of good stories; it's a literary phenomenon with underlying themes that reflect our modern-day muggle lives. With a critical eye, we will uncover themes such as social justice, the struggle for power and triumph, feminism, and other critical ideas, as we draw connections between fantasy and reality. We will not only examine the Harry Potter novels, but also the movies, cartoons, and other related media that were inspired by the story. This course will give you a glimpse into the mind of J.K. Rowling and other creative writers as we unpack the inspiration, writing genius, and other story features that have made this series a sensation.

Note to Parents: Students must have read at least one Harry Potter novel before the start of the session.

"My son loved it. Most programs for kids his age don't **provide enough to hold his interest**, but he couldn't stop raving about SAVY."

SESSION 5: July 15–19 Course Descriptions

RISING FIRST AND SECOND GRADES

"My SAVY instructor was phenomenal! I could tell that **he had true joy in teaching this topic,** and that made all the difference."

WITTY WORDPLAY*

Do you have a knack for telling tales? Have you ever wondered why some stories make us cry while others make us laugh? Do you enjoy reading stories and poems? If so, join us for an adventure into the wild world of words! With your instructor as your guide, you will learn to recognize special literary devices such as similes, metaphors, and puns; all tools that writers use to better communicate their creative ideas and bring excitement to their tales. We will examine some of our favorite books and try to spot the play on words hidden within them. We will then practice using literary tricks to write our own stories and poems to wow our peers. Amaze acquaintances as you apply alliteration, make your friends gasp when you use onomatopoeias, and let your pencil do the talking with personification. You, too, can experiment with figurative language and wordplay using the very same tools that writers have used for centuries!

**Course adapted from an evidence-based curriculum, A World of Wild, Wacky, Wonderful Words, from the College of William and Mary.*

WIND AND WINGS

How are birds and insects able to soar through the air so easily? How can a creature's wing shape and body shape make it better for flying? What adaptations do these living things have for the type of flying that they do? Throughout history, scientists and engineers have learned about flight by observing birds and insects and identifying the characteristics that help them soar through the air. In this course we will combine science and math as we explore the physics of flight with hands on experiments and simulations to help understand how birds and other animals travel within their habitats. We will use our creative problem-solving skills to apply our knowledge of physics principles to build models of different wings, the same way that scientists study and learn. We will also compare and contrast different types of wings to learn how each animal is suited to its own environment. Come along as we explore the soaring scientific world of animal flight!

RISING THIRD AND FOURTH GRADES

MAKINGS OF AMERICA*

Certain events in history have created profound change, altering the course of human life forever. The American Revolution is the focus of this course on cause and effect, consequences, and implications. You will explore the people, places, and events of the American Revolution in order to understand how a government designed "by the people" and "for the people" rose out of the gunfire and turmoil in the 1700's. Come ready to take on the role of historian as you analyze primary sources such as advertisements, speeches, letters and even period song lyrics to uncover truths from the time period of the revolution. Students will also consider and evaluate different historical perspectives as explored by biographical author Ron Chernow and Broadway star Lin Manuel Miranda (Hamilton, the Musical). Studying history is not just dates and facts, this class will be a hands-on, minds-on investigation of an important time where the world was turned upside down with rebellion and revolt and resolution influenced life as we know it!

**Course adapted from an evidence-supported curriculum, The World Turned Upside Down: The American Revolution, from the College of William and Mary.*

"The best part of my class was getting **to see and test** what you've created."

"I am **never bored** at SAVY."

DABBLING WITH DNA

Have you ever wondered why you look or act a certain way? Have you considered questions like —Why do I have blue eyes and my mom and dad have brown eyes? Why am I left-handed? Why do all of my siblings have red hair? If you find yourself asking these types of questions, then you are already thinking about genetics. We will answer these questions and more in this science course that introduces you to the cells in your body and how a special molecule called DNA plays a role in making you unique! You will learn the basics of Mendelian genetics, explore the double helix, investigate natural selection, and examine how scientists use genetics in fields such as microbiology, engineering, and agriculture. Understanding genetics will allow you to better understand yourself and the world around you. By the end of the course you will be able talk about the "rules" of genetics like a real scientist as we investigate ways that DNA can be modified to create new organisms, medicines, and foods.

SOLVING FOR THE UNKNOWN: MATHEMATICAL PROBLEMS, PATTERNS AND VARIABLES

Can you think of multiple ways to get to the right answer? When does one strategy work better than another? Can you justify why? What is an equation, and how are equations used to solve problems in math? Can you use mathematical tricks to solve the most challenging problems with numbers? In this class, we will answer these questions and more as we go on an unforgettable journey into the fun and complex world of algebraic thinking! We will explore how to use important strategies and games to discover mathematical patterns and formulas in careful and clever ways. We will tour the algebraic landscape as we learn how to analyze patterns, write formulas, and solve for missing variables. We will also learn how to develop clever tricks for conquering the challenging terrain of math computations as we use Hands-On Equations® to increase our understanding of algebra. Buckle up and get ready for an exciting an algebraic adventure!

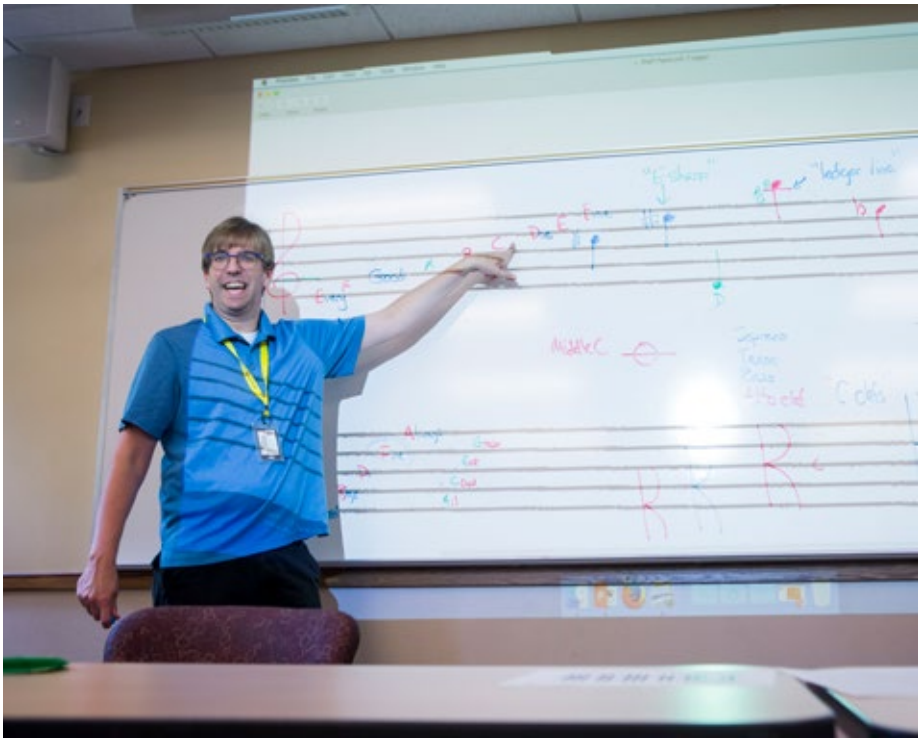
**Course adapted from an evidence-supported curriculum, At the Mall with Algebra, from the University of Connecticut.*

RISING FIFTH AND SIXTH GRADES

MATH AND MUSIC

Do you consider yourself a fan of rock'n'roll? Does pop music dominate your playlists? Maybe you prefer instrumental or classical tunes? From tempo to rhythm to musical notes themselves, did you know math is hidden everywhere in music? The two subjects are closely intertwined and in this class you will uncover how mathematical concepts are concealed in your favorite songs and genres. We will examine topics such as set theory, musical scales, frequency, matrices, serialism, compositional techniques, and the Fibonacci sequence to help you reach an understanding about the intersection of math and music. We will dissect famous songs from a variety of well-known artists to examine patterns within and across genre, so a musical background is helpful but not required. After this class, you may have a new mathematical appreciation for music of all kinds!

"At SAVY my child receives quality attention and **new material that is not repetitive.** It is amazing to see him excited about an educational experience."



DYNAMIC COASTS

Our planet is constantly changing and coastal cities and ecosystems are increasingly at risk. If something happens to these coastal environments, animals, plants, and even people will be impacted. How do coastal systems, such as beaches, barrier islands, and deltas, respond to dramatic changes, such as rising sea level and storms? How can humans help fortify and protect the coastline for the future? In this course, you will explore the interactions between climate change, geological processes, and the role that humans have played in the fate of coastal ecosystems as we try to understand why our coasts are in danger. By investigating different examples of erosion and destruction on our coasts, you will learn to identify patterns of change and evaluate current solutions to this ever-growing problem. You may even have a chance to brainstorm ideas for your own proposed solution. Come along as we learn about the current and future state of our dynamic coasts!

"The best part of SAVY is **exposure to graduate students and professors** in a field she might want to enter."

SESSION 6: July 22–26 Course Descriptions

RISING FIRST AND SECOND GRADES

GAMES GALORE!

When you flip a coin, does it matter if you started with heads or tails? How important is it to stick to the rules? What is the difference between skill and luck when it comes to playing games? In this exciting course, you will use advanced mathematics to explore the laws of probability and learn how to determine if a game is fair. As you play a variety of games, you will calculate the chances that each player can win, and you will use creative problem solving to change the rules that are unfair. With a combination of math skills and logic, we will analyze all types of games and create our own fair and unfair games to test in our probability lab! Who knows, you might design and be able to justify the rules of the perfect new game for all your friends!

"SAVY taught my child that it is okay to fail and that **hard work can be exciting.**"

"The best part of SAVY is that **we get to challenge ourselves** as we use our new knowledge and work together to create something unique."

MATTER MYSTERIES*

Strange things are happening: a mysterious, unidentified substance has been found, the principal's water is disappearing, and even more mysteries abound. Never fear, you are on the case! In this course, you will become a detective and use scientific skills to solve mysteries. After learning about the investigative processes of a scientist, you will gather your own information about solids, liquids, and gases by making scientific predictions, designing and conducting experiments, carefully recording your observations, and collecting data. You will then use the information and discoveries you uncover to solve some very puzzling mysteries about matter.

**Course adapted from an evidence-based curriculum, What's the Matter?, from the College of William and Mary.*

RISING THIRD AND FOURTH GRADES

THE GREAT DEBATE

What do you think of when you hear the word argument? In most cases, people think to argue is to fight. However, this is not necessarily true! Philosophy defines an argument as simple statements used to persuade someone of something using evidence and reason or to confirm a certain conclusion. In this class, you will learn the skills and methods that ancient philosophers used as you develop your techniques to convince others to accept your point of view. Through the use of logical arguments and appropriate evidence, you will learn how to defend your viewpoints and persuade your friends. Just like any skill, the art of arguing takes practice. By exploring specific types of fallacies that can negatively impact an argument, we will become more aware of the principles great debaters use to present their points. We will also analyze historical speeches and debates as we explore the power that good debate skills can have on others. If you are interested in honing your debating skills to discuss relevant topics that directly impact your life then look no further. Come take part in a great debate!

BIOLOGY OF THE BRAIN

Your brain is the most powerful organ in your body. It helps control your breathing, your feelings, and even your body temperature. Have you ever wondered how this giant bundle of nerves works? How are we able to remember some things but not remember others? What microscopic events happen in your brain when you see something familiar or hear your favorite song? In this course we will take an in-depth look at the biology of your brain and discuss how your brain influences other systems in your body. We will learn about the important neurotransmitters in your brain and how they contribute to your emotions, learning, and overall health. We will also investigate the role that genetics and biochemical compounds play in your well-being and how neurodegenerative diseases, such as Alzheimer's disease, begin and develop in the brain. If you've ever wondered about how and why you are able to "wonder" at all, then you are ready to join us as we explore the biology of the brain!

ARTISTIC PROGRAMMING: USING PATTERNS IN PROGRAMMING FOR ART

Have you ever looked at a honeycomb and noticed the way in which bees construct it using perfect hexagons? Or maybe you've stared in curiosity at a large flock of sparrows as they change direction mid-flight, synchronizing their movements with one another. Patterns found in nature, as well as those found in art, have stood the test of time and have inspired human invention and systems of thought. Coordinated placement, coloring, and movement of distributed 'agents,' patterns offer striking and mesmerizing effects, as well as much needed structure. In this class you will explore patterns and structure, constructing dynamic computational artwork using NetLogo, the leading agent-based computer modeling (ABM) platform. You will use NetLogo to develop visual representations that allow for prediction and pattern recognition, and see how this process serves as a playful entry point to a powerful programming language that is commonly used by ecologists, computer programmers, and creative problem solvers.

"SAVY helps build self-esteem because children are in a safe place where **creative thought is encouraged and unique traits applauded.**"

RISING FIFTH AND SIXTH GRADES

"I like that I have the ability to state my opinion and have others respond respectfully at SAVY."

STELLAR ASTRONOMY

What kind of information can we gather from space? What types of celestial bodies can we observe in our own galaxy? Why is it important for us to be able to identify what we see in the sky? Get ready to go on a galactic adventure through the universe as we study the life cycle of stars and the remnants they leave behind over the course of their lifetime. Using the tools of astronomy, we will learn about stellar spectra and experience how scientists classify stars, collect astronomical data, and answer research questions about the universe. We will analyze the characteristics and movement of stars, remnants, and clusters utilizing publicly available data and models developed by scientists. Through discovery, observation, and research, you will take on the role of a real-life astronomer as you learn from one. The cosmos is awe-inspiring, and after this class, you will inspire the awe of all with your stellar knowledge!

PASSAGEWAY TO CREATIVITY: THE POWER OF POETRY

When you write a book you must not / forget to build a door you can use / to get out..." These words, written by the poet Heather Christle, spark inspiration for this class and introduce us to the moving power of poetry. In this course we will dive deep into the world of poetic storytelling, exploring how we can use the tools of language to create fresh and exciting portraits of our lives and construct a literary passageway between the real world and the creative universe in our minds. We will ask questions about the art of poetry, such as: How do poets tell powerful stories using so few words? What can poetry do that novels or screenplays cannot? Which techniques lend themselves best to different styles of poems? From spoken word poetry to rhymed verse to free-form poems, we will study the different styles and techniques of poetry and apply them to our own written creations. We will read poems by both classical and contemporary authors, all the while remaining poetic witnesses to the world around us and using our surroundings as creative inspiration. Through daily reading and writing workshops, we will challenge each other to write emotional and moving verses that fly off the page! This course is for anyone who loves language, creativity, rhythm, and the performance possibilities of words.

"Our son loved being around kids that want to learn. He said it was awesome at SAVY because **everyone was having fun yet focused."**

CAREER CONNECTIONS Rising Seventh Grade

SESSION 1: July 8–12 Course Descriptions

"We continue to come back to SAVY every year. We love SAVY!"

AEROSPACE ENGINEERING: YES, WE'RE LAUNCHING ROCKETS!

It is the dawning of a new age-- reusable rockets are landing on drone ships, private companies have sent people to space, and mankind is preparing for its first manned mission to Mars. The commercialization of the space industry has renewed public interest in rocketry, and upcoming generations will soon master interplanetary travel. In order to understand the intricacies of space travel, you must first understand and appreciate the laws of physics that dictate our universe. Bridge theory and practice as you put yourself in the shoes of an aerospace engineer. Work with a team of classmates to build, design, and test your own rocket following a rigorous rocket-science crash course. Prepare for the challenge of reaching a target altitude by applying the theories and concepts you have learned along the way. You will not only be a participant in this competition, but also a judge for each team's phase of flight. This is no walk in the park. This is launching rockets!

This class is specially designed for those interested in a future career in aerospace engineering, physics, or mathematics.

A HISTORY OF YOU: A STUDY OF AUTOBIOGRAPHY

We all have different stories, dreams, fears, and talents that make us wonderfully unique and autobiographies give us a way to share our story with others. Writing an autobiography requires us to ask many big questions of ourselves, such as what makes us who we are? What are our earliest memories? Who are our role models? What are our ten unwritten rules for living? Now is the time when we get to sit down and reflect on what makes us us! In this class, you will read stories from a variety of authors to identify what makes them magical and dynamic as we start to unpack our own personal tales. We will practice different writing techniques to help jump-start the creative writing process and tell the stories of who we are. With the help of various writing prompts, readings, workshopping, and class discussions, you will have the opportunity to compose your own personal, abbreviated autobiography and share your expertise in something that you know and can tell better than anyone - the story of you!

This class is specifically designed for those interested in a future career in publishing or creative writing.

"I loved getting to meet kids **who were similar to me** from other schools and states."

CAREER CONNECTIONS Rising Seventh Grade

SESSION 2: July 15–19 Course Descriptions

GREEN ENERGY

The global reliance on fossil fuels has massive impacts on our health, environment, and way of life. While these fuels are useful in positive ways, like helping to keep our houses warm and powering our cars, they can also have negative impacts on the world around us. In order to create a cleaner planet and preserve our fossil fuels, scientists have been developing alternative sources of energy to power our lives, also called green energy. But are these so-called-green technologies really the best solution? Is relying exclusively on renewable sources of energy desirable or even possible? The debate between scientists, community members, and government officials is more complex and divided than you might imagine. In this class, you will learn to evaluate how different forms of energy production generate human costs as we study different forms of energy, including coal, natural gas, solar, and wind. You will learn about the global human connections that drive energy production and gain an understanding of how each type of technology impacts people in different parts of the world. You will also have a chance to apply your new knowledge as you design and propose your own innovative solution to our energy demands.

This class is specially designed for those interested in a future career in engineering, environmental science, or clean energy.

"I really like the fact the classes are on a college campus. **It introduces my child to the college environment** long before he is to enter college."

STRENGTH AND STRUCTURE OF ENGINEERING MATERIALS

If you've ever wondered how engineers know a plane won't fall apart mid-flight, then this is the course for you! Learn principles of engineering and apply this information to machine parts and assemblies as you work first-hand with a real engineer. You will examine topics such as the stress/strain relationships within different materials, investigate failure theories, and learn how engineers predict failure. You will also have the opportunity to visit Vanderbilt Engineering labs and put your newfound knowledge to the test by stressing materials until they break and examining how and when the failure occurred. It's time to examine stress and learn from failure in true engineering fashion!

This course is specifically designed for those interested in a future career in architecture, structural engineering, or industrial design.

"Our teachers at SAVY were wonderful and did a great job working with us to **fully understand the concept.**"

CAREER CONNECTIONS Rising Seventh Grade

SESSION 3: July 22–26 Course Descriptions

"We value how the content and projects help students **connect ideas across disciplines** and think critically about how to approach new and unfamiliar challenges."

THE SCIENCE AND ETHICS OF GENOME EDITING: THE INTERSECTION OF BIOLOGY AND PHILOSOPHY

Topics in genetics are becoming more popular and genetics research is a fast growing field with long lasting implications for society. In this class we will tackle some of the big issues surrounding genetic engineering. Is genome editing safe? Should there be federal regulations concerning which genomes can be edited and to what extent? We will begin with an overview of molecular biology and genome editing processes. You will learn how methodologies used to edit genomes have been applied in basic science research, agriculture, and therapeutics, while also examining the long term implications of genome editing as it affects daily life. With an emerging understanding of the science behind this issue at the center of public consciousness, we will then consider ethical questions and work to participate in informed scientific conversations about this important topic. Be prepared to ask questions, conduct interdisciplinary research, and defend your own stance on this issue.

Note: This course will include scholarly discussions about topics that some may consider controversial and have the potential to be polarizing. Students and parents should therefore consider whether they are comfortable with participation in this course.

This class is specially designed for those interested in a future career in biological research, medicine, health science, or health communication.

BEHAVIORAL ECONOMICS

Have you ever wondered how a celebrity millionaire could find himself bankrupt? Or how a giant corporation can influence our decision to buy a cool new device? What factors influence the way we spend our money? Behavioral economists work to explain what motivates people to make certain financial decisions and uncover why people spend their money the way they do. In this course you will get a primer in basic economic theory and replicate famous psychological experiments in order to better understand and predict humans' often irrational behaviors. People may not always make expected and reasonable financial decisions, but the right research can help us understand why. Through case-studies, research, debates, and discussion, we will learn about the impulsiveness of humans and how emotions can play a powerful role in financial decision-making and spending. By the end of this course you will be thinking like an economist and won't look at commercials or the stock market in the same way!

This class is specially designed for those interested in a future career in financial planning, banking, investing, or marketing.

"Our student refers to complex ideas from SAVY classes the evening after class, the next week, and the following year!"

Vanderbilt University's Programs for Talented Youth

develops talent in gifted students and those who work with them

FOR STUDENTS

SAVY—Saturday Academy at Vanderbilt for the Young

Day Program—Held each fall and spring, students in grades K–6 engage with like-ability peers in accelerated courses on Saturdays.

SAVY—Summer Academy at Vanderbilt for the Young

Day Program—Each summer rising 1st–6th grade students take part in a variety of advanced courses taught by content experts. Weekly sessions are available for all grades in the months of June and July.

Career Connections at SAVY

Day Program—Career Connections, a rising 7th grade program within Summer SAVY, immerses students in a topic of study as they experience how expert knowledge and skills are applied in different fields, industries, and/or research.

WAVU—Weekend Academy at Vanderbilt University

Day Program—An intensive Saturday of career-focused courses in a hands-on laboratory environment. Fall and spring options for advanced learners in grades 7–10.

VSA—Vanderbilt Summer Academy

Residential Program—For students entering grades 7–12, VSA offers accelerated courses in 1–3 week summer sessions. Students live on campus and take advanced level courses taught by VU faculty and graduate students in a challenging yet supportive environment.

FOR EDUCATORS AND PARENTS

GEI—Gifted Education Institute

GEI offers professional development opportunities to educators and parents of high-ability learners. Access summer conferences, academic-year workshops, and courses on our website: *pty.vanderbilt.edu/educators/gifted-education-institute*

If you are interested in learning more about new and growing programs, please contact us through our website at *pty.vanderbilt.edu or email pty.peabody@vanderbilt.edu.*

"In my experience, universities can play a role in encouraging and supporting the most talented young learners. And, it is important that we do so—for their well-being and for our common future."

— CAMILLA BENBOW, Founder of PTY
Patricia and Rodes Hart Dean of Education and Human Development, Peabody College

Vanderbilt University
Programs for Talented Youth

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If you would like to be notified as additional course offerings become available, please send us your name, address, email address, and phone number.

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