Great Ideas in Mathematics
9:00 a.m.-3:00 p.m.
October 15 and November 12

What are some of the most fundamental and elegant ideas in mathematics? How are numbers and geometry reflected in both the natural and civilized worlds? What do fruits and flowers reveal about number patterns? Does the Parthenon demonstrate that we have a favorite rectangle? Is there any mystery in a looped strip of paper? Is there mathematics in a child’s scribble? Can we make sense of infinity?

The answers to these questions reveal basic mathematical truths that are both accessible and surprising. Participants will appreciate the elegance of mathematics, celebrated by Professor Deb Bergstrand, known for both her enthusiasm and creativity in the classroom. During this seminar, teachers will make use of some basic ideas from arithmetic and geometry, but without any assumption that they are math teachers or remember these subjects from school. It is an ideal choice for teachers who are “math fans” or who have been “math avoidant” in the past.

Topics will be explored in a discovery-based format with plenty of lively discussion. Using pencil and paper, simple shapes, games, and even pineapples, participants work together to discover some of the greatest ideas and results in mathematics. Topics will be chosen from the list below, depending in part on preferences and interests of the participants.

Mathematical patterns in nature: the numbers of Fibonacci
Basic geometry in art and architecture: the Golden Rectangle
Triangles and squares: the Pythagorean Theorem
Taming the infinite: a simple idea brings infinity into focus
Patterns on paper: doodling to discovering an elegant formula from Euler
Loop of mystery: the twisted band of Mobius
Symmetric shapes: the Platonic solids
Fun with fractals: can an object have dimension $\frac{1}{2}$?

Deb Bergstrand is Professor of Mathematics at Swarthmore College. She teaches courses in combinatorics and abstract algebra, but particularly enjoys teaching about great ideas in mathematics to students at all levels. In addition to teaching college students, she has offered Mathematics and the Human Experience as part of Swarthmore College’s Lifelong Learning Program. Her scholarly interests include graph theory and pedagogical writing. She has been teaching at Swarthmore College for 14 years, and previously taught at Williams College for 14 years. She lives in Swarthmore with her husband and daughter, a student at SHHS.
Cracking Visual Codes
9:00 a.m.-3:00 p.m.
October 18 and December 13

Everyday we encounter images that were created to persuade us, educate us, comfort or challenge us. Some images were constructed to inspire the viewer's devotion or cooperation while others target the viewer's allegiance or awe. Images can seek to evoke joy, fear or repentance. How do images create meaning? How can we analyze the arguments that they make? How has art has been used by emperors, kings, popes and others to construct their identity as ruler and to control their subjects? How did women in the Renaissance live with and use art in their homes and daily rituals? Just as one can interpret a book, poem or play through formal and historical analyses, so, too, can one interpret paintings, buildings, prints, photographs, sculptures and other kinds of images in these same terms.

*Cracking Visual Codes* will focus on understanding how images functioned in the past and how they function in the present. To that end we will look at images through a "period eye" and try to access the knowledge, beliefs, expectations and experiences of the viewers they were meant to address. We will also discuss patrons and explore their role in the production of art.

Participants will conduct close visual analyses of important paintings and buildings in the history of art. In addition, participants will discuss broader ideas. How has the status of the artist changed over time? How did the idea of the artist as genius get started? How have artists been trained throughout history? What was/is the symbolic value of certain materials? How does the availability and cost of materials affect the kinds of images and buildings constructed?

Participants will have the opportunity to engage in activities such as copying drawings by great draftsmen and then discussing how such practice informs an understanding of the artist's process. The class will include a visit to List Gallery on the Swarthmore campus to look at and learn about contemporary art practice and theory.

Patricia L. Reilly is Associate Professor of Art History at Swarthmore College. She teaches courses in the Western Tradition, Italian Renaissance Art and Greek Art. Her research includes a study of the work of the painter, draftsman, architect and author, Giorgio Vasari, at the court of Duke Cosimo de' Medici in Florence. Currently she is conducting a study of the drawing techniques invented by Leonardo da Vinci, and the sculpting techniques invented by Michelangelo while they were working in Florence. Professor Reilly earned her Ph.D. from the University of California, Berkeley
Cults of Personality and the Twentieth Century
9:00 a.m.-3:00 p.m.
February 26 and March 12

Followers of the news know that Vladimir Putin has been cultivating a public image as a man of action, a masculine leader who bares his chest while horseback riding. He swims with dolphins and flies alongside migrating cranes. Similar cults of personality have surrounded the leaders of North Korea, Kim Il-Sung, his son Kim Jong-II, and grandson Kim Jon-un, the country’s current leader. This public adulation of political leaders harks back to the cults of personality that characterized the regimes of Lenin, Stalin, Hitler and Mao.

This seminar will explore the reasons that many dictatorial regimes in the twentieth century developed cults of personality that placed their leaders on pedestals, turning revolutionaries into godlike personages dedicated to serving the people. Through exploring the lives of Stalin, Hitler, and Mao, participants will gain a better understanding of the intersection of personality and politics. What purpose(s) did the worship of political leaders serve societies that had experienced revolutions committed to the radical transformation of socio-economic relations and culture? How did these cults of personality serve the psychological needs of the dictators who thirsted for public acclaim and adulation?

While reviewing documents, visual depictions, films and songs, participants will have an opportunity to explore and discuss these ideas. Professor Bob Weinberg will share his expert knowledge of twentieth century history and what we might learn from it as we consider our present and future global leaders.

Bob Weinberg is Professor of History at Swarthmore College, where he teaches courses in Modern European, Jewish, and Russian history. His research has tended to focus on the dynamics of revolution in Russia and the policies toward Jews under the tsars and communists. He is currently writing about the trial of a Jew accused of ritually murdering a gentile youth a century ago in Kiev. His books include The Revolution of 1905 in Odessa: Blood on the Steps (1993), Stalin's Forgotten Zion: Birobidzhan and the Making of a Soviet Jewish Homeland (1998), Revolutionary Russia: A History in Documents (with Laurie Bernstein, 2011), and Ritual Murder and the Trial of Mendel Beilis: A History in Documents (2013).