ROBINSON CENTER FOR YOUNG SCHOLARS
UNIVERSITY of WASHINGTON
Undergraduate Academic Affairs

SATURDAY ENRICHMENT PROGRAM SPRING 2012!

Math and Writing Classes

The Robinson Center will be offering both mathematics and writing courses for young students in March. These classes are intended to provide intellectually ambitious students with challenge, inspiration, and fun, in a collaborative, supportive learning environment. The math classes are not intended to move students ahead in the standard curriculum but rather to explore areas of math not usually covered in the K-12 classroom. Our writing classes focus on expanding students' writing and editing skills but also on creative expression across genres.

Students should register for the course according to their CURRENT grade in school. Placement is determined by grade, not age. Class size is limited, and so it is first come/first served; waitlists will be established if necessary.

Tuition is $250.00 for our 50 minute classes and $450 for our extended writing class. Tuition is to be paid in full (by check or credit card) when the student registers for the course. Go to the Robinson Center website for more about how to register for the classes.

Parking is available for free on the University of Washington campus **as of 12:00 noon** on Saturdays. Before noon, we recommend the W14 lot near Gould Hall and across 15th Avenue from the Robinson Center. Go to the 40th Street gate entrance to campus for your $5.00 parking pass for W14.

Important Dates

MARCH 12:	**REGISTRATION BEGINS** (online registration via our Robinson Center website).
MARCH 31:	**CLASSES BEGIN**
MAY 26:	**LAST DAY OF CLASSES**

CLASSES

Grades K-1 and Parents

Nurturing the Math Instinct: A Parent-Child Adventure in Mathematics

We are all born with the capacity to love mathematics. This class explores how to cultivate a child's innate interest in mathematics by creating a culture of mathematics at home. Through puzzles and games that capture the quality of play in math, we'll learn how to think creatively, support each other, and keep the spark of joy alive and well in our mathematical lives.

This class is designed to engage both kids and parents. Each child will register and attend with one or two parents, and the classes will be divided between discussions with the parents about how to encourage their child's interest in mathematics, and time spent learning new games and puzzles that can be played at home.

Time: 10:00-10:50 am
Instructor: Katherine Cook

Grades K-1

Games, Puzzles, and Play

In this course, we will explore games and puzzles, both new and old, that tap into mathematical ways of thinking. The emphasis will be on creative play and adapting games and puzzles to players' interests. We will play group games, ask questions, play with ideas, and have fun!

Time: 11:00-11:50 am
Instructor: Katherine Cook

Grades 2-3

Hip to be Square

The square numbers (1, 4, 9, 16, 25, ...) are one of the most amazing sequences in mathematics. In this class, we'll explore puzzles and problems related to squares and square numbers, from extraordinary geometric constructions (how can you double a square?) to arithmetic astonishments (why is 1+2+3+4+3+2+1 = 4 x 4 = 1+3+5+7?).

By the end, we'll have laid down many of the fundamentals of area, scaling, and number patterns, and gotten a glimpse of the beautiful interplay between geometry and arithmetic.

Times: **Section A**: 10:00-10:50 am
Section B: 11:00-11:50 am
Instructor: Daniel Finkel

Grades 4-5

Building a Story from the Ground Up

Whether you're an experienced storywriter or trying out fiction for the first time, this class will take you through the process of writing and revising a longer story. We'll work on plot, setting, and dialogue via classroom discussion, peer groups and brainstorming. Along the way, feedback from your peers and the instructor will challenge you to take your story—and your writing in general—to the next level. You will be welcome (but not required) to take your story home in case inspiration strikes during the week. During the last two sessions, we'll hold class readings and each student will have the chance to share a favorite portion of their story with classmates and parents.

Time: 12:30-1:20 pm
Instructor: Chelsea Jennings

Games and Strategy

Winning plays and learning from losing

Games are everywhere. We love to play them and we love to win, but we don't always know how to win. In this class, we'll use mathematical insights to deconstruct a range of games and puzzles. We'll learn new games, play them in class, and then develop different strategies that help us master them. Bring your enthusiasm for play!

Times: **Section A: Girls Only**, 12:30-1:20 pm
Section B: 1:30-2:20 pm
Section C: 2:30-3:20 pm
Instructor: Katherine Cook

Grades 6-8

Innovative Essays: Creative Nonfiction Workshop

Creative nonfiction essays present true information in innovative, exciting, unpredictable ways. In this class, we'll use published creative nonfiction as the basis for our own literary experiments. We'll write essays that are stories, lists, and instructions; that are

based in observation, memory, and research; and essays that find their own form during the writing process. You'll have the chance to be the audience for your peers' work as well as the chance to hear how your peers and the instructor respond to your work. You'll also have the chance to take your essays home to work on them during the week if you choose. At the end of the course, we'll dedicate one class session to a reading during which each student will share a favorite brief essay or portion of a longer essay with classmates and parents. In the final session, we'll work collaboratively to create an online class anthology.

Time: 1:30 – 3:20 pm (100 minute class)
Instructor: Chelsea Jennings

Counting for Experts

Counting is at the heart of mathematics, and advanced counting (or combinatorics) is the place to find some of the most elegant and powerful problems in mathematics. In this class, we'll learn how experts count. Topics include:

- Double Counting
- Permutations and Combinations
- Pascal's Triangle
- Fibonacci Numbers
- The Pigeonhole Principle

By the end of the class, we'll be able to prove that two people in New York have the same number of hairs on their head, that there are more games of chess than particles in the known universe, and why two powers of 10 must differ by a multiple of 2012.

Some exposure to algebra is recommended.

Times: **Section A**: 12:30-1:20 pm
Section B: 1:30-2:20 pm
Instructor: Daniel Finkel

Grades 9-11

High School Combinatorics

In this project- and presentation-centric class, students will pose and solve tough mathematical questions from combinatorics, or advanced counting. We'll start with fundamentals of the subject--permutations and combinations, Pascal's triangle, and the pigeonhole principle--and branch into beautiful examples of recursion and elegant counting. Potential topics include the towers of Hanoi, generating functions and partitions, Fibonacci numbers and the golden mean, and more.

This class will challenge the most advanced high school students, but will be accessible to any student with a firm grasp of algebra and an interest in math.

Time: 2:30 – 3:20 pm
Instructor: Dan Finkel

Instructors

Katherine Cook has been teaching math for years, to students ranging in ages from 5 to 55. A joyful mathematician who values curiosity and the art of asking good questions, she taught mathematics and physics at The Evergreen State College and the University of Washington, and has worked extensively in the Seattle area with K-5 public schools developing math curriculum. She is currently co-director of Math for Love.

Dan Finkel is a passionate mathematician and experienced math instructor, with a Ph.D. in Mathematics from the University of Washington, where he received an Excellence in Teaching Award in 2005. He has taught math to a wide variety of students, from 4th-12th graders in Brooklyn to UW undergraduates here in Seattle. He has also taught in the Robinson Center's Summer Stretch Program.

Chelsea Jennings is a lifelong reader and writer who holds an MFA in Creative Writing from the University of Washington, where she is currently a PhD candidate in English. Chelsea has taught Composition and Creative Writing at UW for the past five years, and is in her second year as an Assistant Director of the Expository Writing Program. Having worked with students ranging from kindergarteners to adults, Chelsea is excited to talk to fellow writers of all ages about their writing projects and process. Her poetry has appeared in the *Boston Review*, the *Madison Review*, *Black Warrior Review*, *Poet Lore*, *Best New Poets 2007*, and elsewhere.