



Discrete Math Pre-Collegiate: A Summer Professional Development for Teachers

What is Discrete Math Pre-Collegiate (DMPC)?

DMPC is an A-G ('C') approved fourth-year high school math course. The course has been written to help students find something to love in mathematics and advance their mathematical ways of thinking as described in the Common Core's Standards for Mathematical Practice. In this course, students play mathematical games, examine the structures of networks, make (and break) codes, and seek, use and justify patterns to solve mathematical problems. If you're interested in learning about the DMPC course and its curriculum, come join us this summer for a professional development! This professional development is open to all California teachers and intended for first-time implementers.

Community College Instructors are welcome to join us.

What teacher will come away with:

- A student and teacher version of the three modules covered this summer: Games, Cryptography, and Connectivity & Traceability
- An increase in mathematical and pedagogical knowledge learned with colleagues.
- An experience of how the curriculum addresses the Standards for Mathematical Practice as a learner.
- A supportive network of DMPC teachers (new and veteran).

Join us on: **July 7th-11th and 14th-17th, 2025**
9:00 A.M. - 1:30 P.M.
plus three follow up days in Fall 2025

Location: **In-person; San Diego County location TBD**

Cost: **\$2,500** (Some scholarships available)

Additional info:

- Space is limited. Please let us know you are interested at <https://bit.ly/DMPC-Summer2025> (Earn 4 quarter units of UCSD Extension credit)
- Learn more about our course at <http://bit.ly/DMPCvideo>



With support from:



For more information, contact us
www.discretemathproject.net

Dr. Osvaldo Soto
osoto@sdsu.edu
(858) 361-0331

Trang Vu
tkvu1992@gmail.com
(858) 382-5436

Sample DMPC Problems

1. Six frogs are sitting on lily pads. Three frogs face toward the right, three to the left with a single empty lily pad separating the two groups.

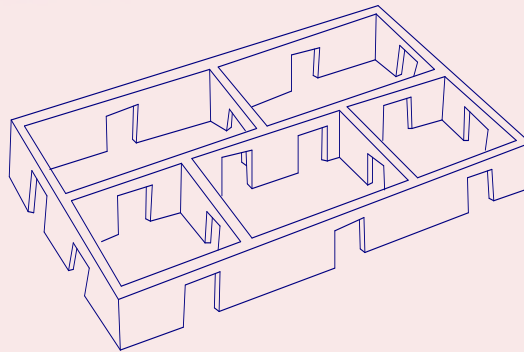


They want to trade places so that the group on the left ends up on the right and vice-versa. Only two types of moves are allowed. Each frog can either

- slide from one lily pad (square) to an empty lily pad next to it, or
- jump over a frog of the other group if there is an empty lily pad behind it.

How many moves would it take? What if more frogs come along?

2. You fell asleep in your math class one day and found yourself in this strange classroom. Is it possible for you to go through all doors exactly once? Why or why not?



3. Decode the following message:

Z XLR TB TLCU CFLVUFS RZCU L IZVFV DK PSLIU ILIFS BFXCF SALB.

Z CUZYJ UF THXC QF IODCCZYP XDTFCUZYP.

Have fun!