

The Math Movement | Camp Structure

1 Overview

Academically, our goal is to help kids think clearly. Socially, our goal is getting kids to care about kids. At the most basic level, our program could be seen as putting kids in a classroom together and telling them to care about each other. Zooming in to see slightly greater detail, the first features of **The Math Movement**' organization that would appear are as follows:

1. We hire high schoolers to serve as near-peer mentors to our middle school students.

Our paid high school Teaching Assistants (TAs) are the backbone of our program. TAs create a sense of family, as their job is to be responsible for the safety, learning, and overall happiness of one or two students over the course of a summer camp. In lectures, TAs have a role as a positive near-peer, encouraging students to pay attention, ask questions, and take notes. When 1/3 of the classroom is composed of near-peer mentors, the deck is stacked towards having beautiful lectures. In team time, TAs have a role as a teacher, helping their students to master different types of problems. And at all times TAs serve as role models for our students, modeling the behavior we expect.

2. We approach learning as a team effort, so students are organized into teams.

Our summer camp is divided into teams where 10 middle school students are guided through the curriculum by their high school TAs. On average 1 TA is responsible for 2 students. College Instructors monitor students' progress and work with TAs to create individualized work plans for students to master the curriculum. Teams help to create a sense of group identity, allowing students to work together and to compete with each other in a constructive way, pushing each other to perform better on homework and quizzes.

3. We approach learning as a team effort, so program staff share responsibility.

From TAs up, **The Math Movement** staff members all recognize that our camp is what we make of it. This tends to have a profound effect on TAs: Giving TAs the responsibility for the well-being of their students tends to change how the TAs interact with each other, senior staff members, and even their own studies. The way shared responsibility exhibits itself in our camps is that the staff works together as a team. One example is TA debriefings, where TAs have a meeting to discuss problems and potential solutions with members of the senior staff. Another key example is senior staff dialogues, where CIs and Directors meet to make decisions after a process of examining each others' views on how to solve the problems facing camp.

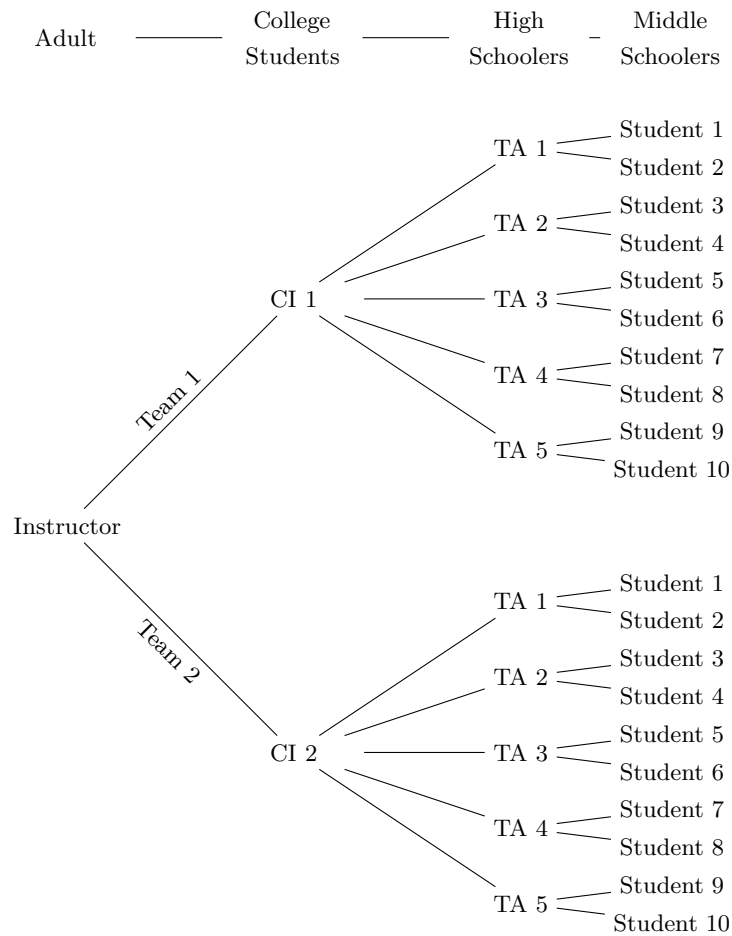
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This document is constantly evolving. This version is from May 13, 2022, and the most recent version is [here](#). The opinions expressed are those of the author and do not necessarily represent views of the Federal Reserve Bank of Cleveland or the Board of Governors of the Federal Reserve System.

2 Organization and Roles

2.1 Teams

Teams consist of 10 students, 5 Teaching Assistants (TAs), and 1 College Instructor (CI). Two teams will typically be in a class together, often accompanied by their TAs and CI. The figure below shows the organizational structure of two teams.



2.2 Students (7s, 8s, and 9s)

The role of a student is to be safe, learn, and have fun.

2.3 Teaching Assistants (TAs)

Paid Teaching Assistants (TAs) are high school students who establish what **The Math Movement** standards are and serve as examples for students. Since our camp is built on modeling behavior, the entire program rises and falls based on the performance of TAs. TAs are usually paired with two students, and their job is to make sure their students are safe, learning, and enjoying themselves. That is, TAs have the best job imaginable: they are paid to care. In addition to their role in

guiding students through the curriculum, the primary responsibility of TAs is to model behavior. TAs must remember at all times that they are role models for their students and all students in the camp. This means that they must always try to treat others with kindness and strive to be their best selves. This holds in their interactions with students, other TAs and staff, as well as the effort they exert in their own classes.

We have found that giving TAs this responsibility, both for younger students and for the atmosphere in the entire camp, changes their perspective on their behavior and their relationships with senior staff.

2.4 College Instructors (CIs)

Like TAs, College Instructors (CIs) work to guide students through the curriculum and are constantly modeling behavior. Unlike TAs, CIs' are focused on all students on their team, rather than two students. In addition, CIs have the responsibility of supporting TAs as they guide students through the curriculum. This means that CIs are tracking each student's progress through the curriculum, and every day providing suggested problems for the TA to work on with their students.¹

Another major role for CIs is to foster a group identity in their team. This can manifest itself in many ways - encouraging the kids on their team to have a unique roll call in assembly, decorating their team room according to some theme, or finding games for their team to play during team time.

2.5 Directors

Directors are the senior members responsible for establishing the philosophy of camp and leading the program. The primary responsibility of the Dean of Students is to make sure camp is providing a safe learning environment for all students. The Minister of Humor is responsible for making kids smile every day, and coordinates each week's joke of the week skit.

2.6 A Note on Hierarchy

We always remember that the hierarchy in roles and responsibilities needed to run a successful program does not in any way imply a hierarchy along any other dimensions. Our goal is to help students make better decisions, not for us to make better decisions for them. This philosophy applies across the board, whether we are talking about how to solve a math problem, what food to eat, or how to handle "discipline" in a given situation. But given that our program is not about telling kids what to do, we still need to be able to run a math camp for middle and high school students. This means that we do require some hierarchy of roles and responsibilities. As part of **The Math Movement** each individual will have a different role to help the group reach its goal

¹CIs use results from the pre-camp test, daily homework assignments, and weekly quizzes as a diagnostic tool to aid this process. Relevant considerations can be found in the podcast discussion [here](#).

of creating a learning community built on caring for kids. We stress that whatever hierarchy is required to run a successful summer camp, everyone is equal in our value as human beings.

3 Schedule: A Typical Day in The Math Movement

4 Breakfast (8:30-9:30)

The day starts with breakfast. But even before that, we want a staff member to greet kids with a smile as they enter the camp. This gets the day started on the right note and communicates to the kids that they are entering a place where people care about them and want them to be happy. During breakfast kids can do whatever they want, which includes playing on their phones, listening to music, or doing homework. But we try to encourage kids to interact with staff and with one another.

5 Assembly (9:30-10:00)

Everyone joins together for an assembly that starts promptly at 9:30, sitting with their teams. The goals of assembly, in order of priority, are:

1. to recognize kids;
2. to inspire kids; and
3. to make kids laugh.

We begin recognizing kids in the first week of camp by (their CI) stating their names in front of everyone, and asking that they stand while receiving recognition from their peers and the staff. We continue recognizing kids by acknowledging their academic achievements. Each morning in assembly CIs read the names of their students who earned a 10/10 on the previous day's homework.

We inspire kids by talking with them about things that we think are meaningful. We typically talk about kindness, courage, or integrity. As examples, we might show a short documentary about [the kindness inspired by Philadelphia's Mural Art Program](#) or [kids' courage getting to school around the world](#). We might discuss experiences from our own lives or events in the news. Whatever specific message we give on a particular morning, the goal is for kids to be reminded that there is a big world out there, to be inspired, and to remind everyone that today is an opportunity to strive for greatness.

We make kids laugh by the Minister of Humor telling a joke of the day. This is typically a cheesy joke, and at some level the role of Minister of Humor is a bit like that of a villain in pro-wrestling: We all know ahead of time that the joke will not be funny, but this, combined with the Minister's confidence in their own humor, makes the joke funny. And on rare occasion the joke will actually be funny! On Thursdays we close out the week with a joke of the week skit where students and TAs act out a joke along with senior staff.

6 Bread Course: Lecture and Team Time (10:00-11:30)

The Math Movement curriculum and related practices are discussed in much greater detail in the separate “Curriculum” document.

The majority of learning related to standard courses happens during Team Time. During Team Time TAs go over homework problems and a checklist with their students. CIs monitor each student’s progress through the curriculum by looking each day at their homework and feedback from their TA on their progress through the checklist.

Lectures are brief; at 30 minutes, they are designed to be just long enough for the instructor to explain the material. We focus the remaining hour of this time on students engaging problems with the support of the TAs and CIs.

7 Lunch (11:30-12:30)

We give students choice and agency whenever possible, and lunch is a great example. If possible, we let students choose where they would like to buy lunch, typically accompanied by a senior staff member (a CI) and other students.

8 Students in Roses Course and TAs in Bread Course (12:30-1:30)

While Team Time and the associated lectures are focused on standard “Bread” material, “Roses” Math classes are focused on exposing students to mathematical beauty by exploring mathematical ideas.

In the afternoons TAs move from the role of instructor back to the role of student, taking their own classes, with placement determined by an evaluation taken before camp.

9 Students in Activities and TAs in Roses Course (1:30-2:30)

Students end the day in an activity connected to math or logical thinking. Example activities include programming, robotics, art, and chess.

10 TA Debriefing (2:45-3:15)

Students are dismissed at 2:30. From 2:30-2:45 TAs help to ensure that dismissal to parents and guardians runs smoothly. From 2:45-3:15 TAs meet with senior staff to go over their day, reflecting on what went well and what could have been done better. The goal of this meeting is to plan effective strategies for the upcoming days and to keep track of developments as they occur.

11 Senior Staff Dialogue (3:15-)

CIIs and Directors meet to make decisions in senior staff dialogues. Decisions are made after a process of examining each others' views on how to solve the problems facing camp.

The Math Movement Camp Schedule (Monday-Wednesday)

| | 8:30 | 9:30 | 10:00 | 11:30 | 12:35 | 1:40 | 2:30 | 2:45 | 3:15 | Time |
|------------|---------------------|----------|---|-----------------|---------------------------|-----------------|-----------|------------------------|------------|------|
| 7s | Breakfast +Games | Assembly | Bread Course: Lecture + Team Time | Roses Course | Lunch | Activity | DISMISSAL | | | |
| | | | | Lunch | Roses Course | Chess | | | | |
| 8s | Breakfast +Games | Assembly | Bread Course: Lecture + Team Time | Roses Course | Lunch | Activity | DISMISSAL | | | |
| | | | | Lunch | Roses Course | Chess | | | | |
| TAs | Meeting w/ CIs | Assembly | Working with Students in Lecture + Team Time | Lunch | Ordering and Equations | Geometry | DISMISSAL | Help with Dismissal | Debriefing | |
| | | | | | Functions | Decision Theory | | | | |
| | | | | | Calculus | Set Theory | | | | |