

# MATH LITERACY WORKER TRAINING Report



July 7th - August 16, 2002

DuSable, HS Chicago, Illinois

CAP, Bank1, ASM, YPP



## TRAINING OVERVIEW

The MLW Training provides a platform for young people to begin doing Math Literacy Work. The purpose of the MLW Training is to help young people develop math and facilitation skills while simultaneously building a culture of youth leadership, ownership and teamwork. Initially MLWs have a wide range of math skills and competence, and varied levels of leadership experience. To be successful, Math Literacy Workers must master a number of complex skills. They must be able to:

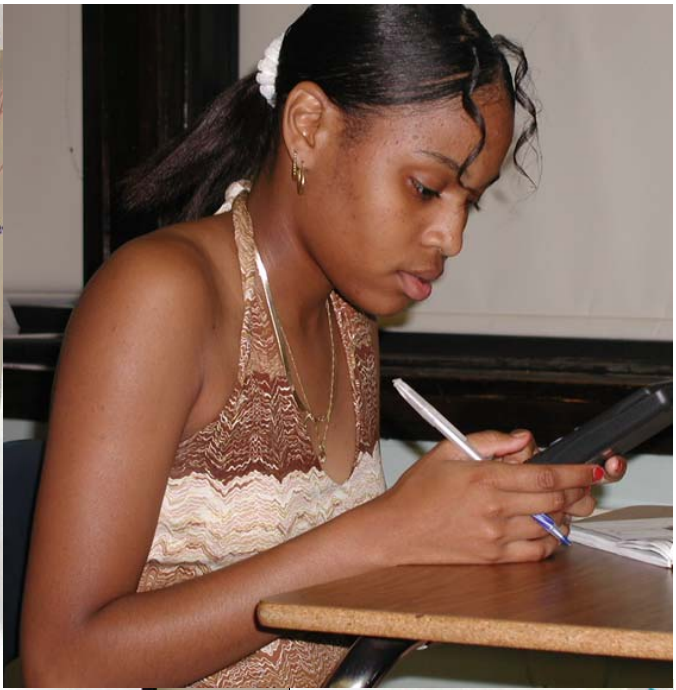
- ◆ Learn mathematics
- ◆ Become comfortable speaking before a group
- ◆ Organize their thoughts to explain materials clearly and effectively
- ◆ Plan, organize, and execute a workshop
- ◆ Work effectively as a team with co-facilitators
- ◆ Work effectively with small and large groups

These skills are developed over time, through experience, and on-going training, support, practice and feedback. The goal of the MLW training is to create a safe environment for participants to gain initial experience conceptualizing, planning, implementing, and facilitating a math workshop for their peers. When participants leave the training they should feel greater confidence in their ability to speak to a group of people. They should be able to clearly explain how to play the math games they are introduced to in the training. They should be able to do the math in each game, and should be able to explain to others how to do the math. They should be able to articulate why learning math is important in today's society, the purpose of math literacy work, and the connection of math literacy work to the civil rights movement.

### Training Site and Staff

The Chicago MLW Training was held at DuSable High School from July 7th – August 16th. Trainees were either part of the After School Matters summer initiative or were participants from the Bank One Saturday Scholars Program. All After School Matters trainees were from DuSable High School, entering their sophomore or junior years of school, and residents in the community of their school. Students that came from the Saturday Scholars Program attend various high schools around the city; their common link is the Saturday Scholars Program. Saturday Scholars represented the majority of the group, with 16 participants, each of whom is entering their sophomore, junior, or senior year of school. Each of the Saturday Scholars is a graduate of one of the elementary schools that Bank One partners with (Goldblatt, Herzl, Mayo and Sabin).

The training staff included 8 members of YPP: Omo Moses (Lead Trainer), Ariel Fleming a sophomore at Tennessee State University, served as an assistant trainer along with Chris Adagbonyin, a sophomore at the University of New Orleans. Jessie Simms and Sylvester Davis, both juniors at Lanier High School in Jackson, MS worked as team leaders. Marquise Lowe, a sophomore at Tougaloo College, was responsible for documentation, interviewing the students and videotaping workshops over the last three weeks of the program. Hector Acevedo and Deniel Jones both MLWs from Cambridge, MA entering their junior years in high school also served as team leaders. Lori Zaimi, a math consultant to Bank One's Saturday Scholars Program and public school teacher in Chicago for two years served in a variety of roles assisting with all training activities as well as planning and coordination.



## MLW Training Components

Descriptions, Trainer Comments, Recommendations

### Orientation Week

The orientation week was designed to: provide trainees with an overview of why they were there, allow trainees and staff to begin building strong working relationships, provide a historical context for MLW and background information on YPP and how it began.

In the initial outline we scheduled the following activities:

- ◆ Registration
- ◆ Rules of Conduct
- ◆ Guest speakers, (how young people can or have been forces for positive social change),
- ◆ Training Overview, Goals and Expectations
- ◆ Ice Breaker Activities
- ◆ Pre Test
- ◆ Trip

#### *Trainer Comments:*

I thought that the most effective part of the orientation was the session around Training Overview and Goals and Expectations. Trainees and facilitators worked diligently through the materials prepared in the training manual and expressed ideas which were well thought out:

#### *Sample Goals and expectations:*

This session culminated in an extended discussion, well over the allotted time, as groups reported out and expressed their thoughts to each other. The main talking point became the notion of “bad kids”, and trainees shared different perspectives about the idea itself and how to work, or what to do with kids that were “bad”.

#### *Recommendations:*

The orientation week sets the tone for the weeks to follow. It also serves as the starting point for trainees to begin looking at themselves and their relationships with other young people differently. We were not able to arrange for the guest speakers, which would have been helpful in providing different voices and discussion topics as it relates to young people being agents for change.

#### **What do you expect to learn?**

How to communicate with others.  
How to make it interesting?  
Learn games to teach.

#### **What do you expect from yourself and participants?**

Make it fun and easy for students.  
Do our best.  
Respect.

#### **What do you expect from training and trainers?**

Responsibility.  
Help in the future.  
Help in the long run.

#### **What questions or concerns do you have?**

Will the students like the math we teach?  
Will it be easy?  
Will it be positive and inspiring for everyone?

*Recommendations Cont.*

One recommendation would be to have the speakers and to not only address how historically young people have been able to come together and be leaders, but also address how young people can work together to create a working environment that is overwhelmingly positive and supportive of everyone involved.

Another recommendation would be to include a three day residential/outward bound type experience where trainees and training staff would be immersed in a different environment and engage in trust building and team work activities, as well as work through the training overview, goals and expectations, and icebreakers.

The more trainees are put in positions in which they have to peel back some of the protective layers they put on, and are able to begin being themselves and seeing others for who they are, deconstructing negative habits as it relates to communication and dealing with conflict, the faster they will grow as facilitators and peer leaders.





## Outreach

Outreach is at the heart of the math literacy worker training, it is when the young people take what they have learned and conduct a series of workshops for another group of kids. There were four outreach sites, Beatrice Jaffrey Teen Reach, Pilgrim Teen Reach, Stateway and Robert Taylor. Each site offered a variety of obstacles and opportunities for the trainees.

Chicago Housing Authority - Robert Taylor (See appendices for full reports)

Challenges:

Robert Taylor had no existing program; we had to recruit and oversee students. Students were between 2nd and 5th grades. Trainees had to adjust materials to meet the needs of younger students. Trainees conducted workshops in the environment that participants lived in.

Team Leader/Trainer Overview:

The group of trainees I had consisted of 5 girls. They were: Sharitka, Dominique, Latrice, Tatiana, and Niekiah. Our outreach site was the Robert Taylor housing projects located on the Southside of Chicago at the corner of 43rd and State Street. At first everything was cool until I found out it was in the projects instead of a community center. So, on that first Thursday, Omo, Hector, the five girls, and me entered Robert Taylor. When we first walked in it seemed like we were in jail or something. Drugs and poverty were everywhere and the people didn't look so friendly. The girls and Hector were a little shook up. They all seemed happy when the workshop was canceled due to the lack of organization.

Group report excerpt:

Our group did workshops called outreach projects. We had to go to the Robert Taylor Projects and teach about 20 children. We taught them prime numbers, multiplication, addition, and subtraction. The kids weren't interested at first, but as they got to know us they began to listen more. The kids weren't always on their best behavior but the fact that they took time out and came to us to learn math when they could've been playing outside really reminded us that they were willing to learn something.



Beatrice Caffrey Teen Reach (See appendices for full reports)

Challenges:

Although Beatrice Jaffrey Teen Reach provides programs for students during the summer; there were times when the MLWs planned workshops, only to find out that the students that they were supposed to service were not able to attend the sessions. Of the four sessions that were supposed to take place, the MLWs only were able to provide two workshops. This made it difficult for planning – students would have to double up lessons in order to catch the students up on material that was missed. Each time the group held a workshop, the participants were not always the same people from the week before. This meant that students that missed the prior weeks activities had to be caught up on activities that they missed in order to participate in the current activity. The space that was used for the workshop was very small as well, MLWs had to modify their lessons based on space as well as the numbers of teens that they worked with.

Team Leader/Trainer Overview:

Although the MLWs only held two outreach workshops, they were very eager to hold more. The team was disappointed that they were not able to teach what they had learned, and share the math literacy that they had gained. Each member expressed the desire to get more involved with the students, and work with them on a consistent basis – they began to form friendships with the younger students. Both workshops that the team actually taught went very smooth. All members participated willingly, gave clear directions, and seemed to enjoy the work that they did with the participants.

Group report excerpt:

Calixto: I think that the program had all it needed to meet its objectives. The only thing that went wrong was that people were losing interest in the project. Workers that came to work with us from Jackson had a great beginning but later they just drifted away from the project. The trainees (us) were the other problem. It seemed more as if they wanted to be here to meet their friends and be paid. I thought they were never interested in the project. Some may say, “We are interested in the program we get the opportunity to work with younger kids.” They did not really mean it, well most didn’t mean it.

Pilgrim Teen Reach (See appendices for full reports)

Challenges:

Students ages ranged from middle to high school. Some students had previous experience playing the games, while others had trouble with prime numbers and factoring. Communication with staff not always smooth.

Team Leader/Trainer Overview:

Group report excerpt:

Even though our group had various ideas and aspirations to do well in our outreach sessions, things did not always go as we wanted. Working with the children could sometimes be a difficult task to carry out and it became tiresome for some of the facilitators. Some did not want to give the one-hundred percent



that was expected and required of them. Members did not want to participate in the activities until they became easier to deal with. However, our group was dedicated to making a change for the children. We decided to put our personal problems and group altercations behind us for the Pilgrim Village group. We united as a whole and that is when our teaching abilities and other facilitation skills began to progress.

Chicago Housing Authority - Stateway (See appendices for full reports)

Team Leader/Trainer Overview:

“The students are not going to listen to us,” “They are going to beat us up and take our prizes.” Those were the words that came from the back of the van on the way to the site. The students were afraid for two reasons; it was their first time teaching and because of the site we were teaching at. It was not the worst site, but driving through the back of the apartments felt like you were entering a crime scene. We pulled around to the last building where a lot of people are just there, over looking the parking lot to see who is pulling up. Now the students were afraid to exit the van and I would have to admit I was too, but to show that I was a leader I got out and helped them exit the van and get the materials out the back. We entered through a back door, which lead to the basement of a building. This brought security to the students: we began to set up in the back room. They were still a little jittery, saying things like, “they are not going to want to listen to what we have to say,” “what if we run into a problem.” We prepared a little bit more, they continued to ask me questioned about what to do, I offered a few words of advice then I turned to the corner and resumed to keep silent during the workshop so that they have a real first time experience. The workshop went good, they planned things out well and with a little help from me, things ran smoothly. It was great!

Group report excerpt:

At the outreach center the five facilitators oversaw nine students the first session. From then the size of the outreach group fluctuated every session having up to twelve students. So by the third session, part of our lesson plan was to make the lesson suitable for all students. Students that we facilitated to varied in math levels intellectually. As a group we prepared a plan to keep the students who comprehended the math work as well as the students who struggled with the math concepts all interested and attentive. Keeping students active and interested became one of our top priorities. We usually began a lesson with an ice breaker followed by the agenda for the day, continued with reviewing prime numbers, learning how to apply what they learned to a game, and ending with a debrief session. During the debrief session students voiced out their opinions on what they felt was “effective” or “not effective” in our facilitation for the day. We further inquired what they felt we could have done differently and asked for input from all students. The day following the outreach the facilitation group would have their own debrief session, discussing and rating the overall experience from the previous day.





## AP/YPP Games Workshops:

During the AP/YPP games workshop, MLWs prepare a workshop to teach to the entire group of high school MLWs. The workshop consists of teaching a game, whose basis is an algebra concept, to be followed up with a brief overview of the algebra concept that was learned. The MLWs are responsible for learning the game, creating a way to teach it, as well as mastering the math concept to be learned. Following the workshop is an in-depth self and group debriefing session to provide feedback to the facilitating group on what went well and what could have been improved during the workshop. Participants reflect on paper before participating in the group discussion. Through reflection, discussion, and analysis, MLWs learn what an effective workshop consists of by examining their own facilitating skills as well as the skills of others.

**Challenges:** Time management was the biggest challenge. Some groups were unable to complete their workshops; they ran out of time before their workshop was complete. Other groups thought that they had planned for an hour workshop, rather it only took 45 minutes, which meant that there was an opportunity to make an extension to an activity, but nothing was available. There was also a need to address the issue of negativity, because during the workshops some MLWs were occasionally demeaning to their peers, or unable to clearly address what they were trying to say.

**Team Leader/Trainer Overview:** Because the MLWs are still learning the qualities, which make for an effective workshop, many of them became frustrated when presenting their workshop. Frustration rose out of not being as prepared for the workshop as they could have been, as well as trying to distinguish roles in certain situations. Some MLWs had difficulty teaching their peers, they wanted to be cool with them, but suddenly realized that this wasn't always the most effective route in facilitation. Also, the evaluation discussion often was dry because the discussion was more of a question and answer session where participants chorally read what they had written. There could have been room for an open discussion, using the writing as a way to support their ideas, rather than a discussion, which is based solely on the writings of the group.

## Topics in Algebra:

Topics in Algebra sessions are designed to engage MLWs in a deeper exploration of the math imbedded in core YPP activities, as well as exploring new math concepts/activities. This summer, the College MLWs along with Lori or Omo prepared workshops to broaden and strengthen the MLWs math background, as well as to introduce activities and concepts discovered during math games. During these sessions, MLWs used their AP/YPP books to decode math problems. MLWs also learned through a variety of activities how to effectively use a graphing calculator.

**Challenges:** Retaining the MLWs interest during the sessions proved to be difficult, once their attention had been lost, it was difficult to regain it. Many students were very weak when it came time to actually do the math. There were many skills that needed to be developed and strengthened.

**Team Leader/Trainer Overview:** The most effective ways of working within the Topics in Algebra classes was to break the group into groups of 5-7 students. The smaller the group, the more individual attention MLWs received. Students were usually more engaged in their learning when they were able to ask questions and be guided through the steps to solving a problem. Using the graphing calculators was a significant tool because it often reduced the amount of time a student needed to spend on solving a problem. Trainers emphasized the importance of MLWs learning how to solve a problem not only with a calculator but also with pencil and paper.



## Field Trips:

Field trips are designed to provide an experience outside of the classroom to further investigate math and its relationship to the world. Information that is collected on the field trip is taken back to the classroom to participate in a follow-up activity, which analyzes the experiences of the field trip. Over the six-week program, MLWs went on three field trips: Navy Pier, a Scavenger Hunt through Chicago, and a closing activity at Dave and Buster's.

**Challenges:** Planning time is essential to creating a quality and effective field trip. The group of lead trainers was unable to plan and schedule field trips before the summer program began, which meant that the field trips that the MLWs participated in were often last-minute activities, or were not as effective as they could have been. Funding was also an issue; because of last minute planning, finding a source for funding became an issue. Bank One and the Algebra Project were very generous in providing us with a last-minute lending source.

**Team Leader/Trainer Overview:** The Field Trips could have been better planned out, and correlated with the summer program more effectively. The most successful field trip was the Scavenger Hunt through Chicago. Students were provided with a list of destinations that they had to visit and photograph in less than three hours. They worked as teams and navigated their way from the Lincoln Park Zoo to the museum campus, stopping at seven locations along the way. A Trip-Line/Mural creation activity followed the Scavenger Hunt a few days after the field trip took place. Activities such as this one provided the connection from classroom experiences to relationships within the real world.





### **Flagway Tournament:**

A culminating event, the Flagway Tournament is a contest bringing together all of the outreach sites. The tournament, planned as an all day event, is an opportunity to bring students across the city together and to demonstrate publicly how they can be transformed into active learners. It is an opportunity for all the trainees to see each other in action and demonstrate some of the common experiences they shared working with students over the summer. The Flagway Tournament represents the final event of the training.

**Challenges:** The Flagway Tournament was limited to three sites, the Robert Taylor students, because of their age didn't learn the flagway game and participated in a Math Fair at Robert Taylor. Also, due to scheduling conflicts the Beatrice Jaffrey site was unable to attend. Given these obstacles, and the fact that the Pilgrim site was late, the tournament happened, and in the end was a good experience for those involved.

**Team Leader/Trainer Overview:** To prep for the training, facilitators were chosen from each group -- one group submitted two facilitators. This group prepared with Ariel, conducting a pre flagway tournament with the other trainees. This did not go well, in part because, facilitators were unable to construct or model the atmosphere that they wanted to create. Also, instead of facilitating, trainees prepared by writing down what they would say and reciting their parts one by one. Traditionally 1-2 people facilitate the Flagway tournament and everyone else assists with their groups. The two facilitators essentially become MCs whose role is to get the teams excited and ready to compete.

This was apparent during the actual tournament in which facilitators did not engage the audience, they just took turns speaking. Once students began playing the game they were engaged and excited, but facilitators missed an opportunity to engage the crowd before the competition.

Suggestions for improvement are to:

- prepare footage that allows facilitators to see a model Flagway Tournament. This will help them in making the adjustment from facilitating a classroom activity to hosting an event.
- Define the roles of facilitators, limiting the number of MCs to two.
- Ensure that all outreach sites are committed to participating in the event as part of the agreement to do workshops at their site.
- Create a format that will allow visitors to see and hear from the students what they've been engaged in over the past five weeks.



# The Young People's Project Math Literacy Worker Training Questionnaire Report

## Introduction

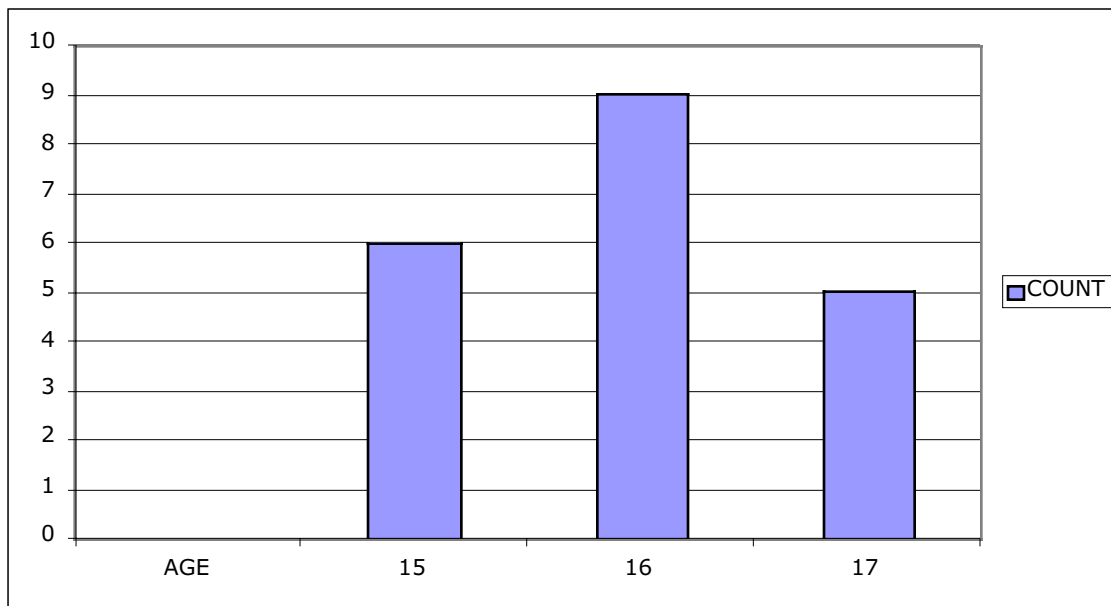
During Summer 2002, Math Literacy Worker (MLW) Trainees with the Young People's Project (YPP) participated in a survey that had two main purposes:

1. To contribute to the measurement of outcomes of the MLW Training. In other words, getting a measure of what the MLW Training is achieving, using evidence and perspectives from the Trainees,
2. To identify ways to improve YPP's training and support for MLWs and improve YPP's services generally to young people.

The survey instrument was a self-completion written questionnaire, and the results of the survey have been provided below, alongside the questions. In total, during Summer 2002, 20 of the 22 MLW trainees completed the questionnaire.

**1. Name (optional):** 12 of the 20 Trainees completed the questionnaire anonymously.

**2. Age in years:**



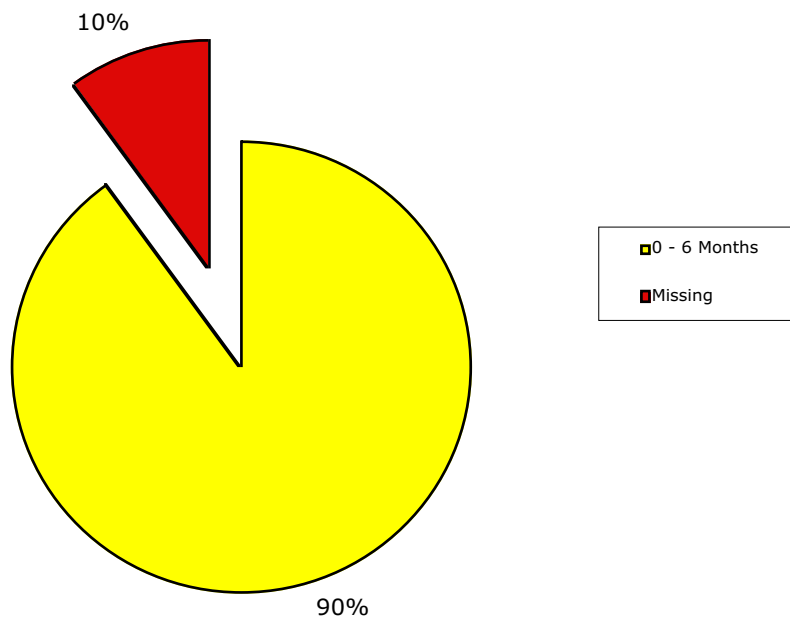


**3. School/college/university attended:**

School/College	Number of respondents
Dunbar VCA	2
The Latin School of Chicago	1
DuSable High	5
Farragut HS	1
Amundsen/West Covina High	1
Westinghouse	1
Lane Tech HS	2
Prosser HS	2
John Marshall HS	1
Proviso West HS	1
Curie	1
Carver Military Academy	1
Kenwood	1

**Your work with YPP**

**4. How long ago did you start your training as a Math Literacy Worker?**





For all trainees this was their first experience doing math literacy work.

**5. As a Math Literacy Worker Trainee, which of the following activities have you done over the last 12 months?**

(19 of 20 respondents completed this section)

<u>Activity Respondents</u>	<u>Percentage</u>	<u>of</u>
Attended Math Literacy Worker summer <u>training</u>	74%	
Attended follow-up <u>training</u> sessions, after the summer	.05%	
Attended <u>outreach events</u> organized by YPP, such as family math nights or workshops in schools.	95%	
Helped organize and lead <u>outreach events</u> .	100%	
Given tutorial help to younger students at <u>after-school sessions</u> .	58%	
Helped organize and lead <u>after-school sessions</u> .	26%	
Joined in discussions and planning about YPP work.	47%	
Helped organize and lead <u>summer math institute</u> workshops for younger students.	47%	
Served on a YPP committee.	32%	
Helped with YPP administrative tasks.	32%	

**6. Have you been involved in similar work through another organization, school or church?**

<u>Answer</u>	<u>% of Respondents</u>
Yes	20%
No	80%

Descriptions: "Elementary school select students teach math to first graders once/week", "Saturday Scholars Program", "Tutoring in after school program, Ebony Angels mentoring program."



### **Your views about YPP**

#### **7. What have you found most satisfying (if anything) about the MLW Training?**

(See full listing of responses under Appendix A).

The most frequently cited sources of satisfaction for trainees were learning and helping/teaching others. Examples included: *"Its helped me to improve my social skills, by meeting new people and teaching others. I also improved my math skills."* And *"working with others and learning their strengths and weaknesses"*. This sense of satisfaction is often linked with the Outreach sessions and their experiences working with younger kids. *"Teaching other kids was most satisfying."* Another frequently mentioned source of satisfaction is *"meeting new people"*, and several felt satisfaction at improving their math skills , *"I learned more about Algebra, and better strategies for it."*

#### **8. Do you think that your own work as a MLW has assisted other students or young people?**

Yes 17                      No 2                      (Missing: 1)

**The MLWs clearly feel that their work is yielding beneficial results.**

**If yes, please describe the activities that have been most effective in helping other students:**

(See full listing of responses in Appendix B).

Most MLWs mentioned particular games or activities that they felt had been effective, such as Flagway and prime number games. They feel these games play a key role in helping the students understand or remember math concepts as well as have fun. A couple of students felt that as MLWs, they offered encouragement or a good role model.

**Overall, the students' responses indicate high levels of confidence about the YPP approach to teaching math through games and fun activity – this is the key way in which they feel they are being effective.**

#### **9. What do you dislike (if anything) about being a MLW?**

(See full listing of responses in Appendix C).

6 trainees did not complete this question, and 4 others said "nothing".

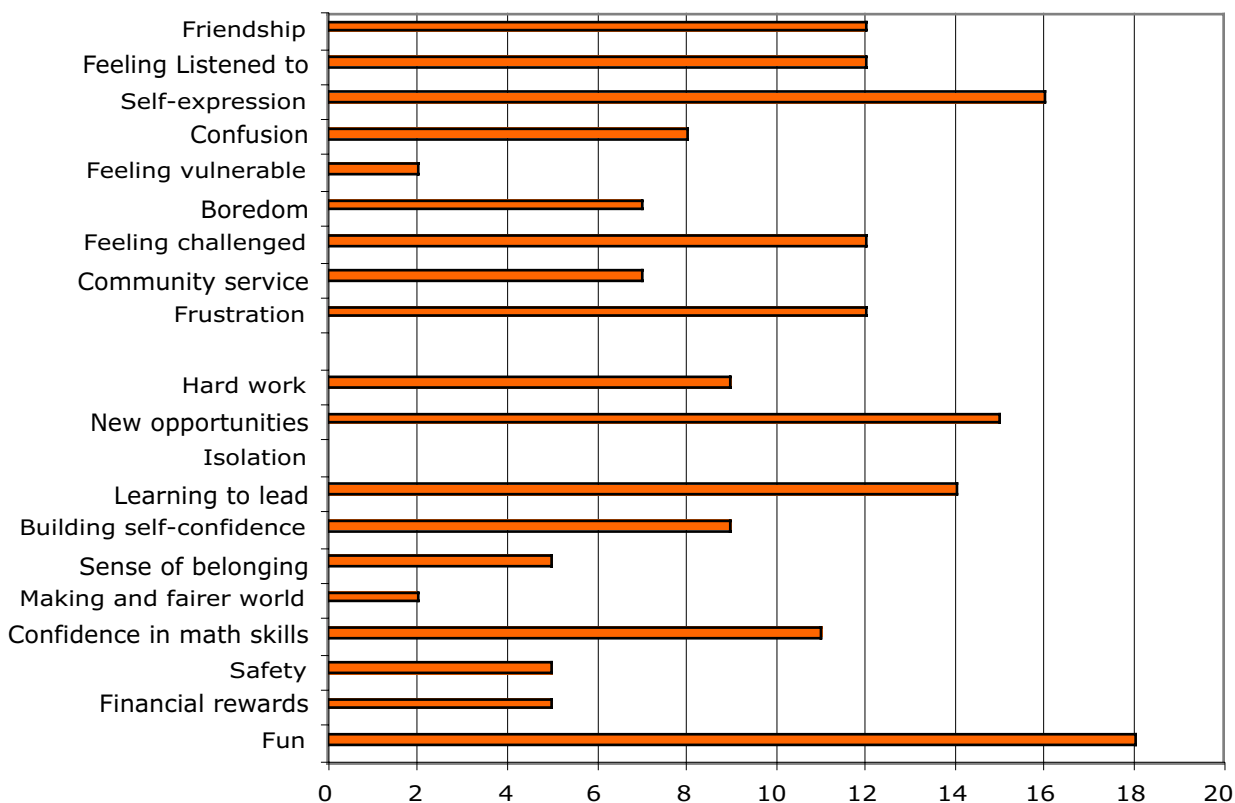


Despite this enthusiasm from many trainees, there is also a strong message coming through about improvement in attitudes and the inability for people to get along. "There are some people who come to the program that dislike each other," "I don't like some of the facilitators attitudes," "how people are very disrespectful to each other," These concerns could be addressed through improved communication systems, a clear consensus about acceptable attitudes/behavior, and an established method (with training) to deal with personal conflicts.

**10. Do you feel you have the chance to contribute your ideas to the overall MLW Training?** (please circle one answer)

Yes, very much	9
Yes, a little	9
No	2

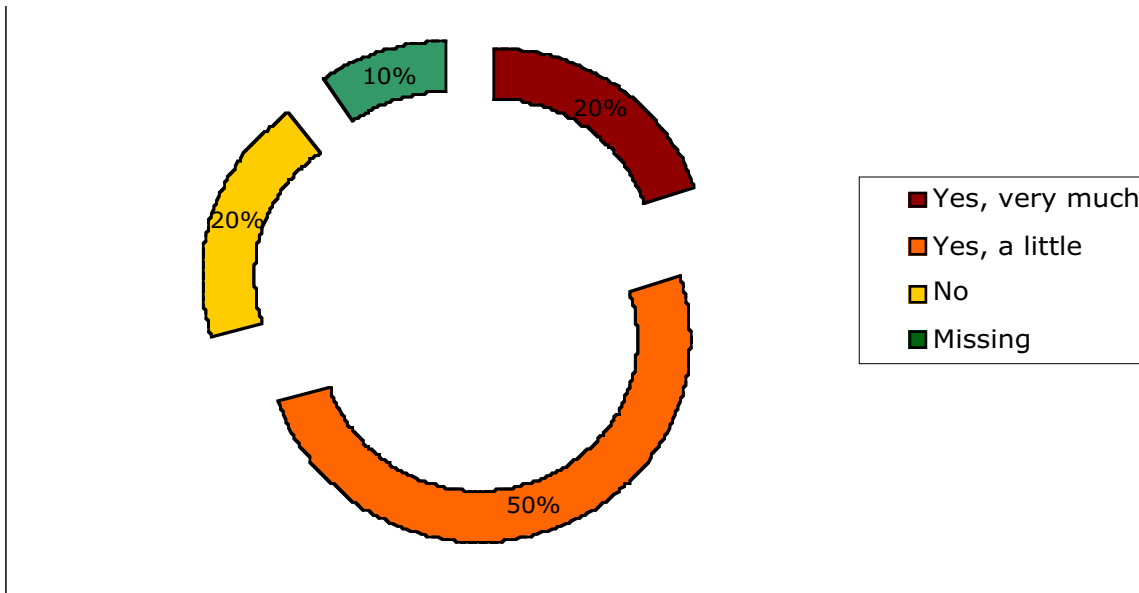
**Circle the words and phrases below that you associate with your experience in the MLW Training?**



The words most frequently associated with their work with YPP were: "Fun"; "Learning to lead"; "self expression"; and "new opportunities".



**14. Do you feel that participating in the MLW Training has helped you improve your math skills?**



**If yes, please explain why you think participating in the MLW Training has improved your math:**

See full listing, Appendix E.

15 Trainees answered this question.

Some responses were: *"I already know the math concepts taught in the program. Having to teach them to others in different ways further makes me confident in the material I already know". "learning math on a calculator", "learning more algebra to help me in subjects like trigonometry."*

**15. Do you intend to continue studying math during the next 12 months?**

Yes: 18

No: 2

**Developing other skills**

**16. Apart from math skills, have you developed other skills through your participation in the MLW Training?**

Yes: 15

No: 5



It is interesting that 5 of the Trainees do not feel they have developed other skills through the training. This may deserve greater exploration within YPP.

If yes, please list or describe these skills:

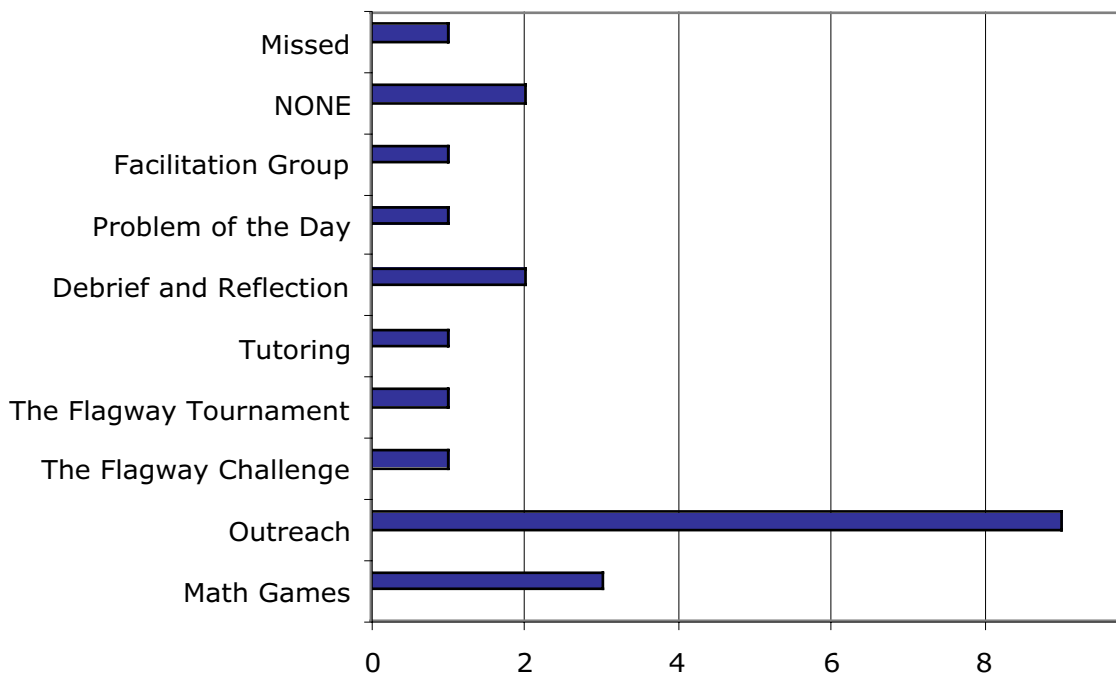
See full listing of responses, Appendix F

The most frequently mentioned skill was leadership and communication. While two people generally mentioned improved self-confidence, 3 Trainees specifically emphasized increased ability to speak in public and make presentations, while others emphasized leadership skills. Comments included: *"Learning to talk in front of large groups of people. Being patient and learning to get along with others", "I further improved social skills as well as leadership skills,"*

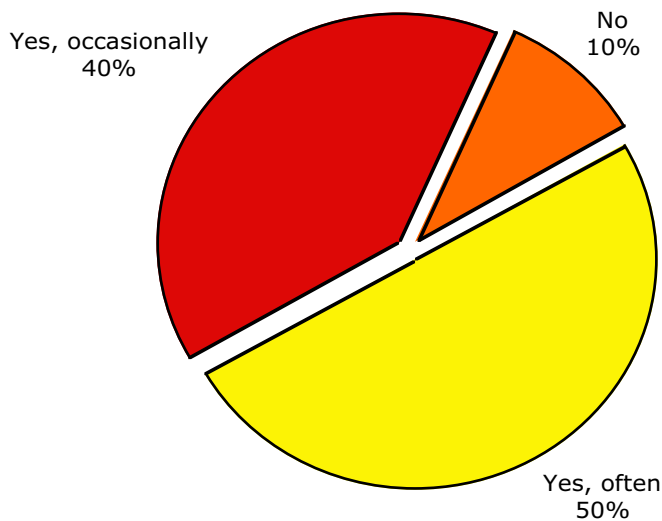
A further emergent theme was "people skills": learning to meet new people, and to feel comfortable working cooperatively with others. One student felt s/he had learned *"learned to talk to other that I don't know and stop acting shy."*

3 Trainees expressed that, *"learning to teach younger kids math,"* was a skill that they develop.

**17. Which training events were most useful in developing these skills?**



**18. Have you led or presented math workshops or other workshops over the last 6 weeks?**



**If yes, were you given advice and support from other YPP staff and members to help you improve your teaching and facilitation skills?**







### AP/YPP - Results from Pre/Post Test

The data presented below is based on the Pre/Post test administered to 18 students who successfully completed the 6 week Algebra Project/Young People's Project Training. Terra Nova's Second Edition of Algebra Concepts was used as the primary testing source, published by CTB McGraw-Hill.

#### General Report of questions, not specific to the student:

Question	Pre-Test # Right Out of 18	Pre-Test PCTG Right	Post-Test # Right Out of 18	Post-Test PCTG Right	Diff of PCTG Right
1	10	33.33%	9	30.00%	-3.33%
2	10	33.33%	9	30.00%	-3.33%
3	8	26.67%	13	43.33%	16.67%
4	10	33.33%	10	33.33%	0.00%
5	11	36.67%	11	36.67%	0.00%
6	6	20.00%	9	30.00%	10.00%
7	6	20.00%	6	20.00%	0.00%
8	3	10.00%	6	20.00%	10.00%
9	5	16.67%	9	30.00%	13.33%
10	5	16.67%	5	16.67%	0.00%
11	6	20.00%	4	13.33%	-6.67%
12	8	26.67%	5	16.67%	-10.00%
13	10	33.33%	8	26.67%	-6.67%
14	2	6.67%	7	23.33%	16.67%
15	5	16.67%	12	40.00%	23.33%
16	4	13.33%	5	16.67%	3.33%
17	10	33.33%	10	33.33%	0.00%
18	7	23.33%	12	40.00%	16.67%
19	3	10.00%	6	20.00%	10.00%
20	10	33.33%	11	36.67%	3.33%
21	1	3.33%	8	26.67%	23.33%
22	10	33.33%	8	26.67%	-6.67%
23	10	33.33%	6	20.00%	-13.33%
24	8	26.67%	8	26.67%	0.00%
25	5	16.67%	7	23.33%	6.67%
26	3	10.00%	4	13.33%	3.33%
27	5	16.67%	5	16.67%	0.00%
28	9	30.00%	12	40.00%	10.00%
29	1	3.33%	8	26.67%	23.33%
30	9	30.00%	8	26.67%	-3.33%



\*Highlighted sections show questions where students improved from the pre-test to the post-test.

\*Because this program was designed over a six-week period, not all algebra concepts are able to be addressed and learned by students. This data shows us that the areas of algebra that were emphasized over the six weeks, were also areas of growth in students individual achievement.

\*Much of the time spent over the six weeks, was used to discover and discuss linear functions, polynomials, probability, and functions of matrices. Students also learned how to appropriately use a graphing calculator.

**Report specific to the growth of individual students:**

Last Name	First Name	Pre-Test		Post-Test		Difference of Percentage
		Score Out of 30	Percentage	Score Out of 30	Percentage	
		6	20.00%	4	13.33%	-6.67%
		9	30.00%	6	20.00%	-10.00%
		4	13.33%	7	23.33%	10.00%
		7	23.33%	7	23.33%	0.00%
		8	26.67%	8	26.67%	0.00%
		7	23.33%	9	30.00%	6.67%
		5	16.67%	9	30.00%	13.33%
		9	30.00%	10	33.33%	3.33%
		13	43.33%	12	40.00%	-3.33%
		11	36.67%	13	43.33%	6.67%
		15	50.00%	16	53.33%	3.33%
		6	20.00%	16	53.33%	33.33%
		15	50.00%	16	53.33%	3.33%
		10	33.33%	19	63.33%	30.00%
		15	50.00%	20	66.67%	16.67%
		19	63.33%	21	70.00%	6.67%
		19	63.33%	23	76.67%	13.33%
		20	66.67%	27	90.00%	23.33%
	<b>Average</b>	<b>11</b>	<b>36.67%</b>	<b>13.5</b>	<b>45.00%</b>	<b>8.33%</b>

\*Names that are highlighted are students who showed some growth from the pre-test to the post-test.

\*The data examined is based on YPP/AP participants who successfully completed the six week training. Alternative assessments which record students progress were recorded through weekly outreach sessions, self reflections, daily debriefing's, and group/individual interviews.

\*Because this program was designed over a six-week period, not all algebra concepts are able to be addressed and learned by students. This data shows us that the areas of algebra that were emphasized over the six weeks, were also areas of growth in students individual achievement.



## Conclusion:

There was an undercurrent of negativity between certain trainees that emerged in the first week of the training and apparently subsided during the third – fifth weeks, only to re-emerge in the last week. Many students alluded to it in their interviews as something that they would have liked to change and which had a negative impact on something they overwhelmingly viewed as a positive experience. In thinking of how we as a staff could have addressed these issues better, and how the training as a whole needed to incorporate mechanisms for anticipating and handling such issues more effectively I was reminded of two quotes:

“We must become the change we want to see,” Gandhi

“The presumption of innocence is not just a legal concept, in common sense terms, it is that generosity of spirit that expects the best, not the worst from the stranger.” Keynan Brewster



## MLW Training Components: Trainer and Group Reports

*Chris Adagbonyin*

The summer of 2002 was an interesting summer. Instead of going to Cambridge, Ma. like I usually do, I went to Chicago, Ill. In Chicago we basically did the same thing that had happened in Cambridge the previous summers. We did a 6-week training for Chicago area youth, in which they were to become MLWs (Math Literacy Workers). Within those 6 weeks the trainees were expected to do outreach for four Chicago Area sites. These outreach workshops took place every Thursday all at different times. The group of trainees I had consisted of 5 girls. They were: Sharitka, Dominique, Latrice, Tatiana, and Nikieh.

Our outreach site was the Robert Taylor housing projects located on the Southside, at the corner of 43rd and State Street. At first everything was cool until I found out it was in the projects instead of a community center. On that first Thursday, Omo, Hector, the five girls, and I entered Robert Taylor. When we first walked in it seemed like we were in jail or something. Drugs and poverty were everywhere and the people didn't look so friendly. The girls and Hector were a little shook up. They all seemed happy when the workshop was canceled due to the lack of organization.

Like at the other outreach sites, the trainees at Robert Taylor were to do a workshop for some kids with me there for guidance.. The kids we worked with, for the most part, were different each time and younger. Each week we had to adjust our workshops to meet their needs. To add to the frustration, outside the workshop they were selling and smoking drugs. It hurt me to see the kids having to come up in this environment that showed no signs of change. Through it all the workshops went well and the people got friendlier.

*Ariel Fleming*

My experience this summer was very memorable; it involved training a group of high school students to do Math Literacy work. The whole training lasted 6 weeks, after the week of intensive training, the students were engaged in planning lessons for their outreach sites.

On the first day of outreach, my group met up at Dusable, gathered all of the materials, had a brief preparation session, and then we were off to Stateway Apartments to work with a group of students.

“The students are not going to listen to us,” “They are going to beat us up and take our prizes.” those were the words that came from the back of the van on the way to the site. The students were afraid for two reasons; it was their first time teaching and because of the site we were teaching at. It was not the worst site, but driving through the back of the apartments felt like you were entering a crime scene. We pulled around to the last building where a lot of people are just there, over looking the parking lot to see who is pulling up. Now the students were afraid to exit the van and I would have to admit I was too, but to show that I was a leader I got out and helped them exit the van and get the materials out the back. We entered through a backdoor, which lead to the basement of a building. This brought security to the students: we began to set up in the backroom. They were still a little jittery, saying things like, “they are not going to want to listen to what we have to say,” “what if we run into a problem.”

We prepared a little bit more, they continued to ask me questioned about what to do, I offered a few words of advice then I turned to the corner and resumed to keep silent during the workshop so that they have a real first time experience. The workshop went good, they planned things out well and with a little help from



me, things ran smoothly. It was great.

Next week though, things were quite different. The students lost a sense of group work and began to fall apart. They didn't feel that they should practice as much since the first week went good and they also felt that no one was supposed to gather the material because one person did not want to be the one doing all the work. They didn't remember that someone would have to be the leader in the group and get everyone on one accord. So a lot of things happened during outreach that taught that lesson. There was a lot of arguing among the facilitators and they did not all work on one accord. Everyone wanted to do their own thing because as Shayla would say, "I changed it and I am going to do it my way and y'all do what you want to do." I told them that this is not the way it is supposed to be when working in a group, "there has to be a consensus," Louis commented after the workshop. On the way home there was a lot of tension in the van and everyone was on edge, but that didn't keep Dominique from making her comments on how she felt about the workshop that had just taken place. Before leaving the van everyone agreed that because of the way the workshop went that they would need to prepare more the next time.

The next week the students prepared for their workshop well. It made a big improvement in their performance, except the point in the workshop when Mary yelled F\*\*\* because the students were teasing her about her last name. Well I guess everything can't be perfect.

The facilitation team overall did a great job for their first time out in the field and the participants they worked with were also very enthusiastic, energetic and fun to work with. Another thing that the facilitators did well was adapt to the different learning levels in the class. This was an effective way of evaluating the students and it should be used in all the trainings to come.

*Robert Taylor:*

Sharitka Robinson, Dominique Baldwin, Tatiana Clark, Nikieh Anderson, and Latrice Smith were all part of our group. We also worked with a staff member Chris. He is from Mississippi. He was kind of hard to work with when we first met him but, as we got to know each other it turned out fun.

Our group did workshops called outreach projects. We had to go to the Robert Taylor Projects and teach about 20 children. We taught them prime numbers, multiplication, addition, and subtraction. The kids weren't interested at first, but as they got to know us they began to listen more. The kids weren't always on their best behavior but the fact that they took time out and came to us to learn math when they could've been playing outside really reminded us that they were willing to learn something.

We also did facilitation groups. We were to make up new algebra concepts and teach them to the other facilitation groups. Sometimes it was hard, because the groups didn't always understand what we were teaching them. We noticed while evaluating our group that we could have helped each other more. But we did good facilitating and learning our objectives and materials for our workshop.

Our six weeks here was better than we expected. We thought we would be sitting in a classroom all day and just doing algebra. But it was not that way. While learning different algebra concepts we had a lot of fun. We would recommend the program for other students having trouble with algebra. And we'd like to thank all of the staff because they had patience in us and they pushed us to be better. Thank you.



### *Pilgrim Teen Reach:*

This summer we participated in the Young Peoples Project (YPP), which is a group of young people who teach others the same age as them or younger mathematical concepts. During this program, we worked in a group of six people consisting of Kimberly McDonald, Terri Wilkerson, Serita Jenkins, Bryan Jenkins, Dewayne Walker and Marcus Madison. We worked with YPP members Jessie and Deniel who gave us helpful tips on facilitation and also encouraged us. As part of our outreach, we worked with children from the Pilgrim Village Outreach Center every Thursday. There, we facilitated various math related games and also participated in the activities with the children. We played games like “Prime Hunt”, which is simply a race between different groups to see which team can find the most prime numbers out of a deck of numbers ranging from numbers two through one-hundred in a given amount of time. While our group was being trained by YPP, they presented the same game with us. This is where we received the idea to facilitate the game.

Even though our group had various ideas and aspirations to do well in our outreach sessions, things did not always go as we wanted. Working with the children could sometimes be a difficult task to carry out and it became tiresome for some of the facilitators. Some did not want to give the one-hundred percent that was expected and required of them. Members did not want to participate in the activities until they became easier to deal with. However, our group was dedicated to making a change for the children. We decided to put our personal problems and group altercations behind us for the Pilgrim Village group. We united as a whole and that is when our teaching abilities and other facilitation skills began to progress.

At Pilgrim Village Outreach Center, we worked with a group of about twenty students ranging from fifth to ninth grade. This was the largest group that of students in the entire program and we were in charge of making sure they all received a clear understanding of what was being taught and also make sure that they were comfortable with us. In order to succeed in doing this, our group made sure that we carried out a number of tasks to make our facilitation great. Here is a list of the steps we took to do the best job that we could.

∑ Prioritize- In order to have a good session, we had to plan out what it was we wanted to accomplish. We listed activities, people in charge of them, and a time limit for each activity.

∑ Practice- After prioritizing our sessions, we practiced them. We did everything as if the children were directly in front of us. We set up materials, memorized our parts, and even acted as the children ourselves asking various questions and participating in the activities,

∑ Unity- Our group had to unite and agree upon steps to do and be comfortable with it. This made it easier for the members to be on task.

This is what our groups’ time with YPP consisted of. We all learned, participated, and made new friends. This was a great experience.

### *Stateway:*

Starting as of Thursday, July 18th a group of members which consisted of Dominique Drane, La’Dasma Hinkle, Mary Ho, Shayla Walker, and Luis Zepeda invested their time in becoming facilitators at the Stateway Garden outreach center. This part of the AP/YPP (Algebra Project/ Young People’s Project) program met every Thursday throughout the six-week session excluding the last week. As a group we prepared for the outreach session a day before actually attending the center located in the L.A.C office at the Stateway Garden Projects.

Preparation to our session was based on activities, objectives, and goals learned in the class environment



the week previous to attending the outreach. For example the first week of training, several ice breakers and ways to facilitate a workshop were taught. The group as a whole then went on to utilize the several teaching methods that were bestowed upon us, choosing the teaching methods that we felt were the most effective. While preparing for the lesson, by creating a lesson plan, the group was overseen by Ariel Fleming a facilitator from the AP/YPP staff. Ariel, an incoming sophomore attending the University of Tennessee, instructed and kept us on task while planning our very first session. As time continued to traverse Ariel's presence as an instructor diminished – the group continued to excel in their work as they became more comfortable preparing the lesson plan independently.

At the outreach center the five facilitators oversaw nine students the first session. From then the size of the outreach group fluctuated every session having up to twelve students. So by the third session, part of our lesson plan was to make the lesson suitable for all students. Students that we facilitated to varied in math levels intellectually. As a group we prepared a plan to keep the students who comprehended the math work as well as the students who struggled with the math concepts all interested and attentive. Keeping students active and interested became one of our top priorities. We usually began a lesson with an ice breaker followed by the agenda for the day, continued with reviewing prime numbers, learning how to apply what they learned to a game, and ending with a debrief session. During the debrief session students voiced out their opinions on what they felt was “effective” or “not effective” in our facilitation for the day. We further inquired what they felt we could have done differently and asked for input from all students. The day following the outreach the facilitation group would have their own debrief session, discussing and rating the overall experience from the previous day.

The culminating event was on the fifth week. On that day students had a chance to apply the skills that they learned against other outreach sites. The group that we had worked with easily proved to us that they had learned the material as they finished the Flagway game with no flaws as well as with time to spare.

*Beatrice Caffrey:*

Our Outreach Group consisted of six people Jessica, Nichol, Anthony, Lucia and Calixto. Lori and Sylvester were YPP facilitators. In the outreach group, we worked for six weeks learning different methods of algebra concepts. We taught games such as the flag way game so that the kids could learn in a fun way. We had to learn the game first in order to teach it to the students. During the six weeks of the program, we tried to teach each student in a way that they would comprehend. The preparation was held on Wednesdays, which was the day before the outreach.

There were different perspectives on how our outreach went.

Marketia: While working at the bat rice Jaffrey Community Center, I had fun working with kids. Overall, we had many people working in our group that were not participating in the outreach.

Anthony: Personally, I feel working with kids was exciting and fun. The kids enjoyed our company just as we enjoyed theirs. There were certain people in our group that did not participate, and I feel that they should have nothing to say.

Nicole: I like the program, because of the kids and the respect that I got from them. The YPP program is not a good ideal for Teenager because of the negativity in the program



tremendous lack of both respect and concentration. As a work/study program it should have been taking more seriously, yet the facilitators took it as a game rather than work. From day one, the staff and cooperation of the youth should have established the work environment. There was a need for more organization. The idea of the program was in good intention but I think that the next time the program recruits teenagers to work, they should be sure that they are willing to work. If the structure of the program changed then the program would improve.

Calixto: I think that the program had all it needed to meet its objectives. The only thing that went wrong was that people were losing interest in the project. Workers that came to work with us from Jackson had a great beginning but later they just drifted away from the project. The trainees (us) were the other problem. It seemed more as if they wanted to be here to meet their friends and be paid. I thought they were never interested in the project. Some may say, "We are interested in the program we get the opportunity to work with younger kids." They did not really mean it, well most didn't mean it.



## MLW Training Questionnaire Appendices

### Appendix A

#### What have you found most satisfying about the MLW Training?

- What I have found most satisfying is that the children want help with their math.
- What I thought to be interesting was the flagway challenge.
- Teaching the kids was most satisfying.
- It helped me improve my social skills by meeting new people and teaching others. I also improved my math skills.
- I learned things and I am satisfied with what I learned.
- I like when we went to teach the kids.
- Learning to talk in front of a large group of people.
- YPP's attitude toward us.
- I learned different strategies in doing Algebra.
- Working with others and learning their strength and weaknesses.
- I got to know YPP.
- Meeting new people.
- That YPP is a very interesting and a good program.
- The outreach sessions were the most satisfying part.
- Having the opportunity to teach kids.
- I think getting tutored in math was the most satisfying.
- The kids in the workshop.
- The outreach program.

### Appendix B

#### Describe the activities that have been most effective in helping other students

- Help students with their algebra to help them pass the algebra I test.
- The outreach program has been most effective.
- Helping the kids with things they didn't understand.
- Teaching the younger kids math that they didn't already know.
- Helping the kids learn their prime numbers and making it fun for them.
- Helping the kids in a different way that was easier for them to understand.
- Helping them children learn their prime numbers, multiplication, addition, and subtraction.
- In the outreach program the games that helped them learn their prime numbers.
- I think that playing prime out helped them learn their prime numbers.
- When we do math, we are teaching the kids addition and subtraction.
- When we did our outreach programs.
- The workshops we did for the children.
- Playing math games and developing relationships through icebreakers.
- The kids that I taught looked up to me.
- I was helpful and social with the kids.



## **Appendix C**

### **What do you dislike about being a MLW Trainee?**

- Some days are boring
- The fact that the kids were very disrespectful.
- My mean co-workers.
- The kids being difficult to deal with at times.
- The pay.
- I didn't like some of the facilitators attitudes.
- Some of the math that they gave us.
- Attitudes of the math literacy trainees.
- The fact that peers can't get along.
- People coming to the program that dislike each other.
- People coming just to argue with others.

## **Appendix D**

### **Math Courses being taken this year:**

- Geometry (6)
- Algebra
- Algebra/Trigonometry (7)
- AP BC Calculus

## **Appendix E**

### **Why do you think being a MLW (trainee) has improved your math?**

- Because a lot of things I was supposed to have learned I didn't but now I understand.
- It helped me rebuild my math skills.
- The Algebra I learned will help me more in Trig.
- Learning and refreshing my algebra skills.
- I learned how to do more math and also how to break things down.
- I learned how to better use the TI-83 calculator.
- Learning how to do math on the calculator.
- It helped and gave me a better sense of understanding.
- It refreshed my memory.
- I learned patience when working on my math problems.
- It taught me a little bit more than the teacher.
- I learned different ways to solve problems.
- I learned easier ways of doing Algebra.
- I learned how to do different types of math.



## **Appendix F**

**Please list or describe skills developed apart from math:**

- Build some self-confidence and self-expression
- I learned you can teach math.
- Confidence in answering math questions.
- I learned to talk in front in people.
- How to teach kids math.
- Improving social and leadership math skills.
- talking to in front of people.
- Confidence on talking in front of others.
- Leadership
- Teamwork, leadership, participation, and confidence in math skills.
- I developed self control.
- I improved my people skills.
- How to get along with others.
- Leadership skills.
- Facilitation skills have improved.
- The ability to open up to others.
- 

## **Appendix G**

**Please describe types of community service or organizing involved in:**

- Community Service Club at school
- Firmm Community Services (Workshop about non-smoking)
- Yes, because the kids like us teaching their prime numbers (?)

## **Appendix H**

**Why has your experience with YPP made you more interested in community service or social change?**

- Because I like helping people
- I like teaching kids and the joy it brings.
- I like working with people and helping others.
- It was a good experience teaching the children.
- I have confidence in myself.
- It is fun.
- I know how to look at math in a different way.
- The way of helping others encourages me.
- After applying ones self to their work continuing to become persistent more work can be accomplished.
- I think its fun and cool.
- Its something you can do that helps you and others.
- I'll be helping others with their problems.



## Appendix I

### Do you have any other comments about YPP, or about your experience as a MLW Trainee?

- I think YPP is a great program for us teens.
- The program was great and I enjoyed meeting new people in YPP for the 6 wks.
- I feel it is a great group. They helped me a good deal and I wish them the best in other future opportunities.
- I think that its a fun program that offers a lot of math skills.
- I think they did a good job. They helped when help was needed.
- The games were fun.
- Keep up the good work.
- They should come back next year.
- My presentation, communication, and organizational skills improved.
- Bring it to Chicago and all around the world cause kids may think math is not good but it is.
- It was a great experience.



SCAVENGER HUNT

Wii  
Xbox  
PS2  
PS3  
PS4  
PS5  
Nintendo Switch

Microsoft Adventure

Handouts

Rules & Regulations

Start: 7:00 PM

End: 9:00 PM

Microsoft Adventure