

1. Project Description Describe/show to what degree the project was carried out as planned. Include what went well and what proved to be a challenge. Include a synthesis of your journal entries.

For our first meeting, we highlighted how math centers were working within our classrooms. We discussed what was going well, and areas for improvement. We then brainstormed a list of concepts which we felt were lacking within our current created math centers. From this activity, we broke off into smaller groups. One group took on the responsibility of researching math center activities for cycle 1 (as one of our teachers was moved to a lower grade she wanted to broaden the project to include her grades). The teachers who searched for cycle 1 activities, created a new folder within our google doc drive to add their findings. They also printed off copies of the centers they found, cut them out and laminated some so they could be used immediately within the classroom. A second group took on the initiative to find activities for the concepts in cycle 2/3 which were lacking. This group added their activities to our current google doc drive. A third group was working on the google doc drive, to organize the concepts under proper headings and to print any new activities that were not previously printed and laminated (which would facilitate the sharing process). In the afternoon, all team members were focused on making the activities. Once they were printed, teachers were cutting out the pieces, laminating them, and then cutting them out again so they were able to leave with a bundle of activities to add to their centers upon returning to their schools.

For our second meeting, we started with another reflection of how math centers were working within our classrooms. We discussed any successes or struggles since our last meeting. We were able to help each other by suggesting ideas that were working well in our own classrooms (organization, groupings, etc). Knowing that one of our group members was new to the project this year and in our last meeting we had not printed off previous math activities for him. We decided that one group would work on printing out activities for him, while he would cut, laminate, and create his centers. Then another group focused on finding more activities for cycle 1 and for the few concepts we were still missing in cycle 2/3. Then another group worked on adding the centers we have found into our curriculum map for each cycle to help teachers easily select an activity to match what they are teaching in the classroom. In the afternoon, all teachers once again worked together to cut and laminate new activities to add to their collection.

Our final meeting was a great opportunity to reflect on our progress with this project, tie up any loose ends and write the final report. We were very pleased with the amount of material we were able to produce and organize in a meaningful way. This has allowed for a tremendous amount of student engagement, which has confirmed our belief in this project. We are also very pleased with the response from other teachers and how we have been able to share this project within the three individual schools. Even though other teachers may not be doing math centers in its complete form, they are intrigued and curious to learn different teaching methods which will encourage students in their math abilities and lower their math anxiety. This project has also transformed our mathematical pedagogy and delivery of math concepts. Because this project is student centered and hands-on, students are really in control of their math learning and engaged in a very concrete way that applies to their daily math life.

While the implementation of daily math can be different for every teacher, there is still a procedure to follow to ensure purposeful learning instead of just busy work. Although we provide a link to the resources, it doesn't allow us to clarify how to use math centers within classrooms. Fortunately, three schools are involved there are representatives to clarify within those schools. However, we feel that it would be better if we had a platform to share our experiences and understanding of the project more formally to clarify many misunderstandings of math centers. Our curriculum is very demanding, teachers feel the need to get through it and they often feel that these math centers can take away from their time allotted to cover the concepts when in fact these concepts reinforce the content in a non-traditional paper pencil way. A challenge that teachers will face is the time to create the materials. However, there are activities that require very little preparation and it would be a good starting point for new teachers looking to implement this math initiative in their classroom.

2. Project Goals Describe/show to what degree the goals of the approved project were met. If the goals were only partially met or not met at all, describe the reasons for this.

The cycle one goal of creating math centers for each strand was met to the best of our abilities. Number sense is an extremely important foundation for students in cycle one and we were able to create and find math centers that facilitated and engaged in building the foundation of these skills. Now the activities have been organized and are being implemented it is obvious students are engaged and are having fun. Math anxiety has diminished in the classroom as the young minds are playing with math and are excited for class. There are certain math strands that are lacking, data and solves a problem; however, student autonomy and their literacy capabilities factor in to the student's ability to be independent. Therefore, these strands are difficult to incorporate at a cycle one level for math centers.

Our goal for finding missing activities for math centers in cycle two and three was accomplished. We were able to go through our current activities and made a list of which concepts were missing. We feel that we found an acceptable amount of activities with the exception of activities for statistics. However, finding activities for two-four students to complete independently is challenging as most of the activities we found required full class participation.

We have organized all of our activities on google docs based on cycles. Within each cycle, we have created folders for each strand and within each strand are the ready-made math activities to use.

Unfortunately, we did not observe math centers in action or create focus lesson plans because of our three day time constraint. However, there has been a continuous conversation about implementation of the math centers into our classrooms to discuss successes and challenges.

3. Project Outcomes Describe/show the gains that the participating teachers achieved through this project.

For one of our participating teachers, he was not involved in our project last year but joined for this professional development initiative. He has benefited greatly from the access to activities to use in his classroom and from the knowledge of how to implement math centers. He has a better understanding of how math centers are not just simply games but how they purposefully reinforce concepts and allow the teacher to work with a small group on reinforcement and enrichment lessons. This year some of our members had different teaching assignments. We benefited from the creation of cycle one activities; because creating and finding activities for three different cycles is a huge endeavour this opportunity to get cycle one up and going has been priceless in terms of time. Cycle one students have been able to build a solid foundation for the math center routines and expectations which will ease transition between cycles. For the teachers in cycle two and three, being able to find and complete activities for each strand has benefited the complete reinforcement of all math concepts during math centers in our classrooms.

4. Reinvestment Clearly describe how the resources created and/or the learning achieved by the participants can be of benefit to the educational community at large. If applicable, comment on whether or not this project should be carried out by other teams and if so, how it could be improved.

Our math consultant and other principals are aware of our project. We currently have three schools involved and are starting to reach a larger community. We have stored all of our resources electronically, which will be made available to all math teachers within our school board.

<https://drive.google.com/drive/folders/0B1D6WzQnzY5IMW93YVEzRXV4RE0?usp=sharing>