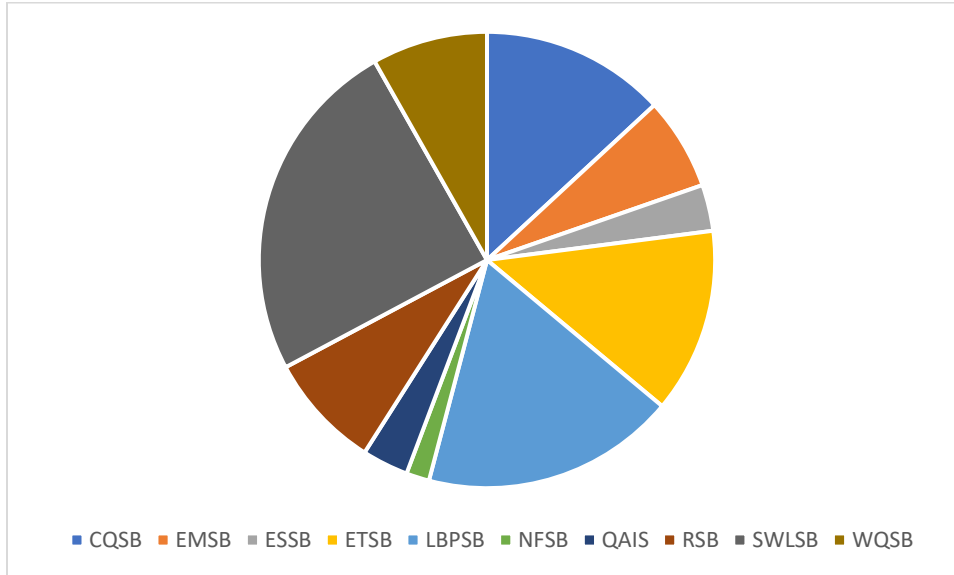


## Math Summer Institute – August 2023

### Cohort 6 (second year of a three-year commitment)

Number of participants: 81    Number of responses to the online evaluation: 61 (75.3%)



**Please indicate which Board/Association you are affiliated to**

### How would you rate the following?

Strongly Agree **1**    A = **2**    Disagree = **3**    SD = **4**    Neither Agree/nor Disagree **5**

Your experience booking your accommodations:

1 = 82.8%      2 = 9.8%      5 = 7.4%

Your accommodations (hotel room)

1 = 78.8%      2 = 11.1%      3 = 2.7%      5 = 7.4%

The meals (selection of food, wait times, service, etc.)

1 = 78.2%      2 = 16.4%      3 = 2.7%      5 = 2.7%

The break-out room your sessions took place in

1 = 67.3%      2 = 27.8%      5 = 4.9%

**If you provided a score of three (3) or higher for any of the statements in Question 3, please indicate how the experience could have been improved.**

The rain was tapping very loudly on the air conditioner located on the exterior wall of my room. The sound made it hard to sleep through the night , both nights,

EBI the A/C wasn't so cold in the break-out room

Juli Dixon's room is always cold

Snacks during break time, especially during the afternoon sessions, would be great

Having a dairy allergy, I found it very difficult to find food that met my dietary needs. I found they did a better job this year labeling food that was unsafe, but still missed things like the soup and desserts. It would also be nice to have a dessert option. Breakfast didn't have too many dairy free options.

I think room mating with someone you don't know is very awkward. This year I ended up just driving home each night.

My room had no wifi and a fridge that would not cool.

Our room was in a different complex than the hotel.

The rooms were a little cold...better this year than last year but still cold! :)

Also, during our morning and afternoon break, it would be nice to have a healthy little snack, like a fruit or vegetable...something simple...

Also, in terms of booking, it was a bit of a pain. I'm at an age where I don't think I should need to share my hotel room with a stranger. So booking my room had that extra step of complication that would normally stop me from participating, because it's not worth the hassle.

I don't disagree however I would appreciate less of a wait time on the Friday between sessions.

**Please indicate to what extent you agree or disagree with the following statements:**

I received all the information required regarding the Math Summer Institute

Strongly Agree = 80.2%   Agree 16.4%   Disagree 3.4%

I received the information regarding the Math Summer Institute in a timely manner

Strongly Agree = 78.2%   Agree 18.4%   Disagree 3.4%

The goal of this PD experience was clear to me prior to my arrival

Strongly Agree = 83.5%   Agree 11.5%   Disagree 1.6%

Neither agree nor disagree 3.4%

Mathematics is something I'm good at

Strongly Agree = 39.4%   Agree 54.1%   Disagree 1.6%   Doubtful = 4.9%

**If you were to observe another teacher's math classroom for one or more lessons, what are three (3) things you would look for in order to decide whether or not the instruction is of high-quality?**

|   |
|---|
| Student engagement, time in front of class, clear learning goals  |
| Does the teacher provide context?   |
| Does the teacher allow students to investigate concepts on their own?   |
| Does the teacher allow students to share their strategies and discuss their thinking to move towards a specific goal? |
| Teacher-student interactions  |
| Method of teaching curriculum   |
| Student engagement  |
| student engagement, consolidation, formative assessment   |
| - time allowed for students to question themselves  |
| - access to manipulatives   |
| - teacher's opened questions, less validation, more questioning   |
| - level of student interaction  |
| - tasks/questions   |
| - content   |
| 1 The teacher introduces the lesson with an open discussion ( math talk) to facilitate background knowledge.          |
| 2 The students have an interactive exercise and or hands on warm up activities  |
| 3. Students work and solve problems in small groups to share their thinking   |
| Student involvement, especially students who struggle   |
| Clarify of objectives of lesson   |
| Ability to adapt  |

- students reasoning

- questions used to elicit common errors

- students talking with students

hands-on activities, encouraging higher-level thinking, repetition of past learning

Hands on learning

Student led learning

Vertical classroom

- student interest

- student participation

- opportunity for students to explore concepts and demonstrate learning in a various way

1) Who's doing the work (teacher or student)

2) Are the students problem solving or doing procedural work

3) Is there a consolidation period after the work

- students are given the opportunity to discuss the concepts and their thinking

- students are working collaboratively on problem solving

- all students are actively engaged in the lesson/activity

I would look at the task, the kinds of questions being asked, and the level of engagement of the students.

engagement, integration of student participation, teacher reactions

- student engagement

- who is doing majority of the talking

- are students discussing what they are seeing?

- Student lead questioning, thinking and problem solving

- Teacher guiding learning through careful observation and interaction

Rich tasks

Discussion and collaboration

Good guiding questions

Teacher takes time to ask questions to his or her students/ verify their understanding

Teacher doesn't give them the answers but let the students find the solution by grouping his class with small groups

Teacher takes time to recognize positively his students effort to find solutions

I would look for student input, manipulatives, and the way the teacher spoke to the students.

1. was the learning goal clear?
2. Did the task reflect the learning goal?
3. Did the students lead in the learning process ?

1. Is the goal of the lesson clear?
2. How is the teacher posing questions to the students? Are they thought provoking?
3. Does the teacher have the students' attention

1. Is the goal of the lesson clear?
2. How is the teacher posing questions to the students? Are they thought provoking?
3. Does the teacher have the students' attention

See the teacher question the students, see the students manipulate math materials, see students engaged in their learning

Manipulatives, student sharing and explaining their findings, teaching listening and circulating as students or groups work, asking questions and challenging students.

- 1) The structure of the lesson
- 2) The questions being asked during the activity
- 3) Student engagement/ the students thought process

Engagement of the kids  
 Students talking not the teacher  
 Kids moving

- 1-Student engagement
- 2- Reciprocal teaching
- 3- Supporting different learning needs

Student engagement  
 Activities planned  
 Less paperwork

- 1) Teaching strategies: A great math teacher can adapt to different learning styles and use various methods to engage and motivate students.
- 2) Learning environment: Is the classroom inviting? Are the students engaged in learning?
- 3) teacher can manage the classroom effectively, maintain discipline, and create a positive and supportive learning environment. Is the teacher friendly, respectful, and approachable, and does not act as a superior or authoritarian figure.

|   |
|---|
| Student engagement  |
| Student understanding   |
| Students working together   |
| Student interactions with peers   |
| Are the students engaged and in task  |
| Teacher circulating around the room encouraging students  |
| Student engagement and discovery  |
| Student collaboration   |
| Explicit instruction and checking understanding   |
| 1. If the teacher gives clear examples and models what he or she is teaching.   |
| 2. If the students are able to think critically and come to the good answer or at least be able to show their thinking and that they were on the right track. |
| 3. If the students are engaged in the learning. Trying to solve and asking questions.   |
| Student engagement  |
| Teaching different strategies/ way of thinking  |
| Student lead  |
| Use of materials  |
| Teacher circulation and listening in on student conversation  |
| The teacher interacts with students and gives space and time for students to think about their answers when he asks questions.                                |
| The teacher provides opportunities for students to express their thinking and share their answers.  |
| The teacher gives opportunities to students to participate in the lesson.   |
| Use of new ideas  |
| Group work  |
| Use of manipulatives or technological material  |
| Engagement, student understanding (and demonstration of that understanding), student ability to transfer knowledge to different tasks.                        |
| Clarity   |
| Understanding   |
| Student Involvement   |
| Manipulatives, wait time and a variety of questions/strategies  |

1. Student generated solutions

2. Class discussions

3. Use of manipulatives

If the tasks are rich and are directly linked to the objective.

Type of questioning from the teacher.

If students are encouraged to develop their own strategies.

TQE

Student engagement

Student questions and discussions (is the class student or teacher led)

Quality of Problems presented to students

Facilitating student talk, wait time, have student talk about their thought process

1) The questions being asked,

2) the collaborative environment,

3) the manipulatives be employed.

- Student thinking

- Student engagement

- Teacher facilitating

Survey the class for strategies used, not degree of correctness.

Wait time

Think Pair Share

Math vocabulary, manipulative, and time.

1) Student engagement

2) Presentation strategies of the math content and the teaching techniques that enhance its relevance and long term retention

3) Opportunities for assessment, analysis of results and teacher reactions and changes!

1) Student engagement

2) Presentation strategies of the math content and the teaching techniques that enhance its relevance and long term retention

3) Opportunities for assessment, analysis of results and teacher reactions and changes!

Ability to get student attention

Clear instructions

Validation of understanding

Student engagement

Student understanding

|   |
|---|
| Proper use of mathematical language   |
| <ol style="list-style-type: none"> <li>1. Student engagement.</li> <li>2. Teacher's knowledge of the subject matter.</li> <li>3. Efficient use of classroom resources.</li> </ol>   |
| <p>How he would engage his students.</p> <p>How he would interact with them.</p> <p>What would be his way to gain trust from his students.</p>  |
| <p>Student centered</p> <p>Collaboration</p> <p>Feedback</p>  |
| <p>The time according to the students to think or to solve a problem.</p> <p>The questions asked to the student are at their level (not too easy or too difficult) but challenging.</p> <p>The tasks have a goal and are there for the students to make sense of what they are doing.</p> |
| <p>Student engagement</p> <p>Student participation</p> <p>Peer interaction</p>  |

**Please indicate how often you invite student-invented strategies prior to teaching an algorithm or procedure**

All the time: 6.6%      Often: 39.3%      Sometimes: 36.1%

On a rare occasion: 8.2%      Not at all 1.6%      N/A (Administrator) 8.2%

**In your current context, for every ten (10) lessons you teach, on average, in how many lessons are the students using manipulatives**

Zero 0.0%      1-2 44.3%      3-5 21.3%      6-7 18.0%

8-10 8.2%      N/A (Administrator) 8.2%



**Based on your response, briefly list and describe some factors that influence how often manipulatives are used in your lessons (e.g. knowledge of how to use them, topic/content, availability, time, etc.)**

|   |
|---|
| Novelty of the abstract concept   |
| Availability of certain manipulatives   |
| topic teaching  |
| They've been taken out, not enough. Students have already moved on to the algorithm. Don't have a manipulative that I think can do better than problem-based solution with peers sharing strategies.  |
| I wish to use manipulatives more frequently however time and availability in my school make it difficult to incorporate, I also switch classrooms to teach so it is challenging to carry supplies from room to room and it makes it difficult to clean up when you must rush to another class,  |
| Availability -- I use what I have in the classroom. I have a wish list of manipulatives, but I can't always have them. I sometimes resort to online and other resources to compensate for the lack.   |
| Topic -- Depending on the topic, I use the manipulatives before, during or after.   |
| Sometimes, I use already available manipulatives in the classroom, not many though, and often times I make my own.  |
| I feel like I do not have enough time to plan activities that requires manipulative during the school year.   |
| My own ignorance and secondly lack of materials and time to prep  |
| The lack of available manipulatives in the school limits what I can use them for.   |
| Trying to find ways to use them within the content taught.  |
| My experience is more with higher level math, we use multiple representations but a lot of the work we do is pretty abstract. Marian Small reassures me that this is okay.  |
| Before participating in the summer institute, I had very little (if any) experience with math specific manipulatives. This was definitely a large factor that affected my use of them. A second main factor is time - working with manipulatives tends to be more time consuming. However, it seems that the understanding could be deeper and may be worth using more often. |
| time- is there a planned interruption during that period?   |
| availability- are other teachers using the materials at the same time/are they stored where they are supposed to be?  |
| I don't use them as often as I would like due to timing and my own knowledge of how to use some manipulatives.  |
| For some units (like algebra and geometry) I use lots of manipulatives, esp. algebra tiles and nets. For others (like statistics and probability) I use them less often.  |
| The greatest contributing factor is the fact that I'm not teaching Math! Although 'manipulatives' are useful in all subjects.   |

|   |
|---|
| topic/content   |
| time  |
| feeling the need to summarize in note form  |
| availability  |
| inexperience with manipulatives myself  |
| No money to buy more  |
| I have no access  |
| Time  |
| - I feel like I got more clarity on how to incorporate specific manipulative for specific concepts this summer and I look forward to incorporating this in my lessons this year.          |
| Uncertainty oh how to use the manipulative with a lesson.   |
| I am influenced by my own understanding of math. I do not need manipulatives, therefore my teaching tends not to include them as much as it should.                                       |
| Students were reluctant to using them. I will make them much more present and include them more regularly.  |
| They are timely and I feel they will work best in resource settings with students who struggle with conventional teaching.  |
| I teach grade 6 and I had the false impression that the manipulative were for the younger grades. But since this summer I wish to use them more often.                                    |
| availability, lack of experience on what could be used  |
| allowing the students to use the tools needed to learn and explore, hands on  |
| The time and when I can make small group (2or 3) students   |
| Depends on the context ( when it's about area of a solid or algebra)  |
| Base 10 blocks, solid geometric shapes, tessellations, protractors,....   |
| Content and time  |
| I teach grade 11 math and it does not always apply...I use computers most of the time because they can interact with objects easily and see what happen when they try different things... |
| Student pre-knowledge   |
| Consolidation vs. Mastery   |
| Availability  |
| The level of Mathematics I teach does not always translate to manipulatives.  |
| Time is a big factor as well as availability.   |
| Base ten blocks   |
| Counters  |
| Dice games  |

|  |
|--|
| Random objects to create math talks  |
| Cut shapes for geometry and fractions  |
| Time is a big factor and student independence level. Some students need to have an adult sit beside them. Sometimes the curriculum feels so full that I can't take the time to use manipulatives   |
| Topic, time, students' choice  |
| In Cycle 3 elementary, some concepts are a little harder to find manipulatives to use .  |
| <ul style="list-style-type: none"> <li>- depends on the topic</li> <li>- used in many of my lessons</li> <li>- students always have the option of using the manipulatives</li> <li>- easily accessible to students</li> </ul>  |
| Manipulatives are always available to students to use when solving problems, but I would like to be more intentional about the manipulatives I offer for particular problems or concepts.  |
| <ul style="list-style-type: none"> <li>- availability of materials</li> <li>- my own comfort level</li> <li>- time factor</li> </ul>   |
| Availability is the first as we share a set  |
| Tropic/content   |
| I always start my lessons with manipulatives and have students explore. Then we have a discussion about it.  |
| As often as possible.  |
| Availability or supplies.  |
| I base the need for manipulatives on the student's understanding. I am a resource teacher so I often use manipulative.   |
| I often use manipulatives to help students visualize and manipulate math concepts to help them understand math in a context. This takes time and I think it's important to spend time in this place to ensure deep understanding. We can't rush the process of gaining concrete understanding. |
| I teach very young students, so manipulatives are integrated into all the math games.  |
| For every lesson, I let students use manipulatives to try and understand a notion. Ex: counters, ten base blocks, clocks, dice, solids, paper squares & circles to explore fractions, place value template,...   |
| I ask a question and let them manipulate and observe them, then I question what they discovered...I give them enough time (beginning of a lesson)... Manipulatives always available to students.   |
| Availability   |
| Topic  |
| Time   |
| Having the manipulatives - availability  |
| Knowing that a manipulative could help with that topic   |

I believe that manipulatives should always be available and taught how to be used in each new concept. Manipulatives should be a part of most lessons.

I am not an administrator but have been teaching as an english specialist for a couple of years. I have not had the chance to implement what I've been learning at the math summer institute but would like to!

Lack of time

Money to buy manipulative, school budgets, accessibility, fear of students damaging manipulatives

**Please indicate to what extent you agree or disagree with the following statements:**

The content of the workshops at the Summer Institute was representative of my needs as a Mathematics teacher

Strongly Agree = 59.0% Agree 39.4% Neither Agree/Disagree 1.6%

The amount of content in the breakout sessions was appropriate

Strongly Agree = 59.0% Agree 41.0%

The pacing of the breakout sessions was appropriate

Strongly Agree = 68.9% Agree 26.2% Neither Agree/Disagree 4.9%

**If you disagreed with any of the statements in previous question, please indicate why:**

A lot of time was on high school content the first day. (ie, division with fractions). Our group was a senior elementary.

A little too much time spent on division with fractions, as students do not see this in grades 5 and 6

I feel that for my cohort group in particular, these are all excellent teachers. They know their math, and their classes are likely very engaging. I don't think they need convincing, or help coming up with these strategies. They already are in place.

I feel like focusing on the instances where these strategies aren't working would be more productive. What do you do when students refuse to engage despite what's been put in place. How do you integrate

a student who's been absent for 8 classes into this situation, if prior knowledge is required? How do you do it when 5 kids were absent, and missed the previous explorations? What does it look like when combined with other classroom activities/presentations/notes? I imagine a lot like what most of us are doing, but it would be nice to see. How does planning/mapping look like?

Coming up with explorative activities would be nice too. There are a lot of good brains in there, I'd love to pick at a lot of them.

**What support mechanisms do you feel your school board could provide to help you continue to grow professionally after this PD experience?**

|  |
|--|
| More space in a class of 32 students to facilitate my movement i e bigger classroom  |
| White boards   |
| Tablet per student   |
| Supplying schools with manipulatives and workshops on using these manipulatives would be great.  |
| Time and money   |
| More release time to prepare content and activities to use in the classroom, as well as given more tools to help.  |
| Ways to use manipulatives in our classroom.  |
| Encourage them to find other PD similar in layout to this and given by experts like Ed, andJulie.  |
| access to manipulatives and guidance   |
| Continue to create relevant word problems for cycle 3.   |
| Give lesson plans and resources  |
| Creating a Teams where all teacher who attended the Math Summer Institute can share information.   |
| Workshops for teaching math to our youngest students.  |
| Offer Math workshops refreshers for different levels k-6   |
| Curriculum supporting the use of manipulatives.  |
| Collaboration on lesson planning and formative evaluations.  |
| Additionally funding for further PD. Also, funds to both create materials to support the type of tasks supported by the Math Summer Institute as well funds for the materials used. Giveaways are nice, but if the only hope that a teacher has to get a class set of something is to be lucky enough to win them since their school won't spend the money on Math materials, these sessions feel ephemeral. |
| Check ups throughout the year!   |
| Help with the books, manipulatives and online resources.   |
| I think we should continue to receive webinars from the DNA team during the year.  |
| Greater access to manipulatives  |
| I think visiting classrooms to see these concepts in action would be a great developmental experience.   |

|  |
|--|
| Small monthly workshops exploring upcoming topics.   |
| For the school board to create more workshops during the school year on the use of technology, manipulatives and group work.   |
| I think more regular shorter PD would be helpful to keep these ideas present and remind me of what I had learned. Once we get into teaching, it is easy to fall back into old habits. Also, having conversations to keep me accountable to trying new strategies and discussing their effectiveness.   |
| Most of our schools use the Decimal book in grades 5 and 6. Hands on tasks to go with these units/progressions of learning, would be amazing.  |
| Find a math consultant (it's been 10 months since the post has been vacated)   |
| Organizing more PD sessions throughout the year.   |
| A chance to tie this into the Thinking Classroom and develop materials specific to my grade.   |
| We are fortunate in our school to have lots of support in the classroom, however, this is definitely something that makes applying these strategies easier and more accessible. Money to purchase quality manipulatives always helps as well.  |
| I think time to plan and find ways to implement the strategies would be helpful as well as funds to purchase the appropriate manipulatives.  |
| More time to plan. More time to meet with other teachers. More time to discuss and clarify what the goal is with this approach. It's not an all or nothing (which some teachers or consultants think), and it doesn't mean that understanding and competency goes flying out the window. Teachers are pedagogues, but we've removed pedagogy from the equation (here). |
| math tool kits with manipulatives  |
| Provide tasks, provide modeling, provide manipulatives, provide accountability and check ins,  |
| Help with time management and long-term/unit planning  |
| Allowing for follow up   |
| Time in groups to work   |
| More math sessions at the board.   |
| Meetings with the team during the year   |
| If it wasn't for distance, pairing teachers from different schools to try out these methods together would be nice.  |
| I think we need to continue sharing our experiences and I would love to visit a class.   |
| time to share best practices   |
| Small workshop in math for SET, special education technician. We all go to math class and they,all should benefit to new technics to help our students.  |
| It would be great if each math class could have their own manipulatives. We would love to have more time to design rich math activities that allow for students learning and understanding   |
| Manipulative are needed that accommodate every class/grade   |

|   |
|---|
| Have one online session midyear maybe about a topic that our grade level is covering to help us presenting problems differently....   |
| Provide manipulatives, coordinate grade level meetings or cycle to share ideas.   |
| Time! I need time to input everything I learned into my current long-term plans   |
| I feel well-supported by our math consultant. Time to meet and work with colleagues would be helpful. I would be interested in further math professional development opportunities.                               |
| I would like to have a book club using one of the DNA as a way to facilitate sharing what I've learned with other teachers in my school   |
| Bringing the DNA team into out classrooms.  |
| Allowing math consultants to come co teach a math lesson and apply some of the tools learned at the institute   |
| To give us a budget to purchase the manipulatives   |
| Continual PD on math for teachers who didn't get to experience the conference.  |
| i feel my school board and representative already support me in the best way possible   |
| It would be great to meet with people from our board who attended and create small goals and discuss how those goals went. I think this follow up collaboration would be helpful.                                 |
| Release time to watch other teachers using this method of teaching in their classrooms. I learn by observing and I think it would be incredibly helpful to see it in real time, in a class just like mine, today. |
| Collaborative, implementation time. Time to dissect what we've learned and come up with ways to implement   |
| Math PLCs where teachers who have attended can continue to work together and learn from each other.   |

**From the list of teaching practices below, which three would be your top priority for professional development? [First choice]**

- Designing rich math activities that allow for student sense-making **37.3%**
- Eliciting student thinking **18.6%**
- Establishing and maintaining expectations for student participation **3.4%**
- Facilitating rich math activities that allow for student sense-making **18.6%**
- Identifying an instructional goal **6.8%**
- Orienting students to each other's ideas
- Recognizing students as competent contributors towards developing understanding **10.2%**
- Representing student thinking and key ideas **3.4%**
- Responding to student thinking
- Teaching towards an instructional goal **1.7%**

**From the list of teaching practices below, which three would be your top priority for professional development? [Second choice]**

- Designing rich math activities that allow for student sense-making **23.7%**
- Eliciting student thinking **10.2%**
- Establishing and maintaining expectations for student participation **11.9%**
- Facilitating rich math activities that allow for student sense-making **20.3%**
- Identifying an instructional goal **5.1%**
- Orienting students to each other's ideas **8.4%**
- Recognizing students as competent contributors towards developing understanding **8.4%**
- Representing student thinking and key ideas **5.1%**
- Responding to student thinking **6.8%**
- Teaching towards an instructional goal

**From the list of teaching practices below, which three would be your top priority for professional development? [First choice]**

- Designing rich math activities that allow for student sense-making **6.8%**
- Eliciting student thinking **16.8%**
- Establishing and maintaining expectations for student participation **11.9%**
- Facilitating rich math activities that allow for student sense-making **20.3%**
- Identifying an instructional goal **6.8%**
- Orienting students to each other's ideas **6.8%**
- Recognizing students as competent contributors towards developing understanding **13.6%**
- Representing student thinking and key ideas **5.1%**
- Responding to student thinking **6.8%**
- Teaching towards an instructional goal **5.1**

**What content area or curricular goal(s) do you feel least prepared to teach conceptually?**

|   |
|---|
| Situational problems  |
| More problem solving (sit probs) would be helpful.                            |
| Geometry  |
| Concepts related to time are difficult to teach.                              |
| Allowing students to 'struggle' without leaving lower tiered students behind. |
| Diversified assesment   |
| Geometry  |
| Functions   |
| Probability and geometry  |



Highly challenged students with grave conceptual weaknesses of previous content. How can we bridge the gap without changing the course objectives.

Multiple step problems: I find students have a hard time applying what they learned in situational problems.

I want to know how to guide them better (cycle 1)

Choosing a specific/ relevant teaching goal for my lessons on different topics. I would also benefit from learning more about students common misconceptions.

Design of lessons.

Sec 4 level Mathematics.

Managing a collaborative classroom.

Responding to student thinking without giving away the answers.

I can't think of a particular area.

Anything that touches on the actual program with ready to use material is always appreciated.

Evaluations

Do more rich tasks as "students" (simulations) as in the session just before departure. Then participants could take on "teacher" roles in subsequent simulations.

Situational Problems

In Secondary 3, I'm prepared to teach all the topics. However, I notice that students have zero concept of Set Theory, so I always find the need to teach the basics of Sets before teaching Number Sets.

I feel like least prepared teaching different strategies for money. Teach money, counting and adding coins.

How to develop situational problems!

English! The communication competency specifically!

Vectors, Conics, Trigonometry,

exponent laws, angle theorems, functions

Designing rich math activities.

situational problems

Statistics

Decimals Grade 3

more math concepts

unsure at the moment

I think probability is a difficult concept to grasp.

Euclidean geometry

Lesson design

Statistics and Probability - my least favourite to teach and usually saved for the last months of school.

I feel confident teaching the concepts, but I am interested in further developing my ability to engage students and make learning meaningful

Statistics and Probability

Orienting students to each other's idea and working in small group.

|   |
|---|
| Teaching students who struggle; good questioning to facilitate students thinking                                |
| Trigonometric functions are harder for students...also logarithmic functions...! Ideas with that would help! :) |
| Statistics.   |
| Time,   |
| Everything to do with geometry  |
| Establishing norms, as well as a set of tasks for specific grades.  |
| telling time;   |
| Multiplication  |
| Rates, interest rate, working backwards   |
| evaluation  |
| Teaching with algebra tiles.  |
| Decimals  |
| I feel prepared enough for any subjects.  |
| I find fractions, decimals and percents are more challenging to teach conceptually.                             |
| Designing tasks that support the Math Summer Institute initiative.  |
| Perimeter, area and volume. I always teach the algorithm. And students are often make mistakes.                 |

**Is there any other feedback or recommendations that you wish to provide the organizing committee?**

|   |
|---|
| Thank you so much!!   |
| Thanks for the great sessions.  |
| Maybe just provide participants with their schedules before they get there (so they can plan stuff with their families).                          |
| It was another great opportunity.   |
| My recommendation is to adopt some of the practices that Jo Boaler is doing with you cubed. How can we be more progressive with our math program? |

You are all amazing! I am sure that you have put in many hours to organize this time for us yet it seems seamless!! Thank you very much, this is a wonderful experience. I wish that more teachers could benefit from this. Enjoy the rest of your summer.

You are all amazing! I am sure that you have put in many hours to organize this time for us yet it seems seamless!! Thank you very much, this is a wonderful experience. I wish that more teachers could benefit from this. Enjoy the rest of your summer.

This was my first time attending the MI. The experience was beyond my expectations. I would have actually done a few more learning days!!! Thank you for providing these enriching workshops.

Thank you for a great experience.

Can't wait for next year!

Include Computer Programming/Coding as part of the math lessons. On my own initiative, I will do this in the coming school year.

I love my experience at the math institute! Thank you for that wonderful opportunity!

This was my second year and, once again, it was an incredible learning experience. I left the workshops feeling motivated and eager to return to school. I enjoyed the opportunity to meet and work with fellow math teachers from my own and from other boards. Looking forward to next summer!

Including the special education technician more into workshop to form them too since they all go to math class to support the students and the teachers and they are working with small groups.

Thank you for organizing this great workshop!

Excellent workshop, thank you very much.

Regarding guests of teachers who are paying for their own share of the room, this year's information email indicated that it would be possible to arrange for them to have access to the buffet room for three meals per day. However, the email did not specify how or where to purchase a meal plan for them.

[SEP] "Note that meals are not included for your guest(s) if you opt for a family plan. You may choose a food package, but it is rather costly. There are numerous places to eat in close proximity of the hotel."

During the booking process online, there were options for various add-ons such as breakfast at the restaurant, champagne, and other room extras, but there was no option to "choose" a meal plan for guests. I assumed then, that the process for arranging guest meal plans would be similar to last year, where guests were asked about meal plans upon check-in and simply given a bracelet for access at the registration desk. Arriving at the hotel this year though, we were initially refused.

This experience was rather unexpected and disappointing. Encountering several employees who were unaware of the booking details for such a large group, being sent from one person to the other, and being told that I must have misread the information in the email, added to the frustration.

[SEP] Finally speaking with yet another manager, I inquired about the absence of the meal plan choice during booking, and was told that the request COULD have been added in the "Notes" section of the booking process. However, when I questioned how we could have known to include this detail in the notes, I was told that there was no way of us knowing that- it was indeed an oversight in the details of the information provided to us and we were finally issued a buffet plan. As an aside, I also expressed my concern that the Notes section is often overlooked and doesn't really seem like an official way to book something that costs hundreds of dollars and the manager again agreed that it was not ideal. The manager also said that the team had not prepared properly for this option to be organized for guests to purchase, and she apologized for this.

[SEP] Understood that this is a hotel issue and not an LCEEQ issue, but I hope that next year's communication will either include instructions for the "Notes" section or incorporate the meal plan choice directly into the booking process.

None! Thanks so much for organizing! It's been amazing!

Thank you for organizing an incredible learning opportunity for teachers. It was truly a pleasure to take part in this experience.

I look forward to this every year and I'll be sad when it's over!! So just a THANK YOU!

I enjoyed everything! Thank you! :)

provide a complete lesson example, just the structure including evaluation

Thank you for organizing this!

I didn't know the schedule until I had arrived and would have liked to know in advance.

The most enriching moments I've had were casual interactions with other teachers, around the dinner table or in the halls. These should be promoted through activities encouraging "the hang". We've suggested and started implementing a "social committee" to see if we can hold activities that encourage interactions between teachers, which will hopefully lead to more professional collaborations and sharing between different resource/departments. If the committee comes up with ideas, some support (getting access to rooms, or maybe sponsors for prizes, etc...) would be great, as well as help get the word out ahead of time so people can come in expecting to be hanging out with other teachers.

Thanks for these high-quality and inspiring sessions.

**Winner of the \$ 50 Gift Card chosen at random from among respondents who self-identified.**



**Melissa, Gulino**

Sir Wilfrid Laurier School Board