

IMPROVEMENT PLANNING – EQAO MATH TEST SCORES

<p>Background Information</p>	<p>1. Analyze the data for trends in the overall EQAO Math data for Grade 3 and Grade 6 students.</p> <ul style="list-style-type: none"> a. Overall EQAO math scores for Grade 6 students: Results have been slowly falling from 54% of students achieving at least a level 3 in 2013-2014 down to 49% in 2017-2018. b. Demographic Data has largely stayed the same in this period. c. Girls tend to do marginally better. d. Boys tend to have a more positive view of their mathematical abilities than girls do. (“I like math.” “I am good at math.” “I can answer difficult math questions.”) Values for these scores have held steady for the last number of years, but are much lower than values in reading and writing. e. Grade 3 students have a more positive view of their mathematical abilities than Grade 6 students. Values for these scores have held steady for the last number of years. f. “I think about the steps I will use to solve the problem” – Very weak with only 50% of the students in Grade 6 using this strategy “most of the time.” g. “I check my work for mistakes.” – Very weak with only 65% of the students in Grade 6 using this strategy “most of the time.” <p>2. Analyze specific data trends for students to identify students who would benefit from additional attention and SERT resources in the area of math.</p>
<p>S.M.A.R.T. Goals</p>	<p>Overall Goal: Increase overall EQAO math scores by 5% in the next 5 years.</p> <p>Supporting Goals:</p> <ul style="list-style-type: none"> a. Improve student attitudes towards math in Grade 6 by 5% in the next 5 years. “I like math.” “I am good at math.” “I can answer difficult math questions.” b. Improve problem solving skills in Grade 6 students by 5% over the next 5 years. “I think about the steps I will use to solve the problem.” c. Improve math work skills in Grade 6 students by 5% over the next 5 years. “I check my work for mistakes.”
<p>Action Plan</p>	<p>1. Staff Development and Training</p> <ul style="list-style-type: none"> - There are a number of new teachers this year, as well as current staff, who are unaware of the pedagogical rationale behind the Math Makes Sense and Kim Sutton math programs currently in use at the school. A thorough understanding of the pedagogy and framework will help teachers to more effectively teach their curriculum. - Watch the Kim Sutton Instruction DVDs for teacher training. Despite the fact that the school has been using this program for math fact fluency and numeracy drills, only 2 of the math teachers have actually completed the teacher training. Have

teachers divide into the primary and junior divisions to complete the teacher training. After the session teachers will discuss, draft and implement a plan for incorporating this in their daily teaching. The plan will be filed with school administration and followed up mid-way through the year to assess progress and determine next steps.

- Conduct a whole-school PD session in the end of August to take a critical look at the Math Makes Sense and Kim Sutton math programs that we have at the school. Have teachers break into divisions to discuss the opportunities and challenges with teaching math using these programs, and then brainstorm about how we can address them. *Discuss: How can we get the most out of our math programs? How can we address some of the weaknesses in these programs? Do these weaknesses directly correlate to some of the EQAO data? What are next steps that we can take?*
- During the October PD Day, dedicate a mini-session to Problem Solving Skills. Launch the day with a problem solving activity for staff that incorporates a “Math Talk.” Have staff brainstorm and problem solve ways to strengthen problem solving skills and incorporate planning skills into multi-step problem solving. Then, formally introduce the concept of “Math Talks” and have staff work in pairs to develop a lesson plan incorporating the use of “Math Talks.”

2. Principal Support

- During Professional Development (PD) planning sessions at the beginning of the year, encourage staff to participate in areas of math related PD.
- Encourage teachers to use the “Peer Review” section of the professional development chart as a form of professional development this year. “Peer Review” is rarely used as teachers are often hesitant to have colleagues provide feedback and evaluation on their teaching, but this can be a great opportunity to challenge, grow and learn from each other.
- Arrange for teachers to have the opportunity to visit other schools that are doing well on the EQAO and sit in on a series of math lessons. Have these teachers prepare a brief report sharing insights and wonderings at the next staff meeting.
- Spend time observing each teacher during a series of math classes to support and challenge them in applying new math instructional techniques and strategies.
- In January, sit down with teachers to review their personal PD goals with respect to math. Follow up with respect to the math instructional plans made in August that addressed specific aspects of the math program (e.g. Kim Sutton) to ensure that these plans are being followed and to provide support and guidance.

	<p>3. Instructional Support</p> <ul style="list-style-type: none"> - Provide SERT time and resources for students flagged during the analysis of the data. Design a specific program plan to address their individual needs. - Encourage and support staff in the design of additional teaching resources to address weaknesses in the math program. Provide teachers with a substitute teacher. - Use teachers who are already leaders in teaching math. (e.g. C.J.) Designate them as “Math Coaches” - someone that teachers can go to for ideas and advice. (This would also serve as leadership professional development for the coach themselves, and would be reflected in their PD plan for the year.) <p>4. Monthly Staff Meetings</p> <ul style="list-style-type: none"> - Provide teachers with the opportunity to share things that are going well and ask for advice in areas where there are challenges. - The staff normally studies one book over the course of the year during the PD portion of the staff meeting. This year the focus will be on developing a Growth Mindset. This can be linked specifically to student attitudes about math. Use online videos and resources from YouCubed and Jo Boaler’s series of grade specific books available in the staff library.
<p>Reasons Why This Plan Should be Successful</p>	<ol style="list-style-type: none"> 1. Improved pedagogy improves student learning and achievement. 2. Individual plans and SERT resources for students identified as needing additional help provides specific attention where it is needed most. 3. The plan targets specific areas in math where students are especially weak and have the greatest potential for growth. 4. Teachers are eager to help their students and develop their own pedagogical skills. 5. We have some highly skilled math teachers who motivated and eager to share, who can serve as informal teacher leaders or “Math Coaches” in the area of math. 6. It has been a while since math has been the focus for staff professional development and program improvement. (The last time the math program and pedagogy was reviewed was in 2007.) There are many opportunities for growth and adjustment of pedagogical practice. In the program review discussions in May 2019, staff indicated that math was one of the areas needing attention, and that they were eager to improve in this area. 7. If teachers are excited and eager to teach math, this will translate into their student’s attitudes towards math as well.

<p>Predictions for Challenges</p>	<ol style="list-style-type: none"> 1. Time – Staff are busy, and there are only so many hours in the day. <i>Solution: Staff are more interested in giving their time when they see that this is a worthwhile and highly achievable goal. Set the stage for success early in the PD sessions. Provide support and resources to staff who are interested in taking on leadership roles or special projects (e.g. developing resources for staff) by providing a substitute teacher.</i> 2. Pre-conceived notions about math & how it should be taught. <i>Solution: Plan for this and use a “Selling” leadership style to get all staff on board with this proposal. For example, open the meeting using Jo Boaler’s video highlighting that any student can be good at math, and set the stage for new ideas.</i> https://www.youcubed.org/resources/mindset-video/ 3. Some teachers may not be eager to adjust teaching practices <i>Solution: Lead with confidence and enthusiasm and a “Can Do” attitude. (Transformational Leadership) Build on the successes of staff members who are incorporating these practices, have them share some of their successes and “A-ha!” moments. (Selling Leadership style)</i> 4. Teachers may not be comfortable using “Peer Review” <i>Solution: Build on the trust that already exists between members of staff. Have teachers pair up with someone that they are comfortable with.</i>
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