

GAINS

COACHING FOR MATH



Coaching for Math in District School Board of Niagara

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DISTRICT SCHOOL BOARD OF NIAGARA
Achieving Success Together

Board Profile

- 22 Secondary Schools
- 97 Elementary Schools
- Large area geographically: Fort Erie, St. Catharines, Port Colborne, Welland, Niagara-on-the-Lake, Niagara Falls, Grimsby, Pelham

DSBN Board Plan for Coaching

Stage 1: Choose schools to pilot project

Invite two secondary schools to participate in the project.
The schools invited were chosen based on:

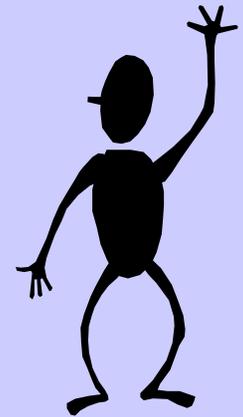
- The presence of a strong mathematics teacher with qualities suited for coaching
- The presence of teachers who have shown an interest in moving forward and improving instructional practices



DSBN Board Plan for Coaching

Stage 2: Hire support

Hire a teacher for one semester to coordinate the coaching project in addition to participating in the project as a coach.



DSBN Board Plan for Coaching

Stage 3: Identify teacher coaches

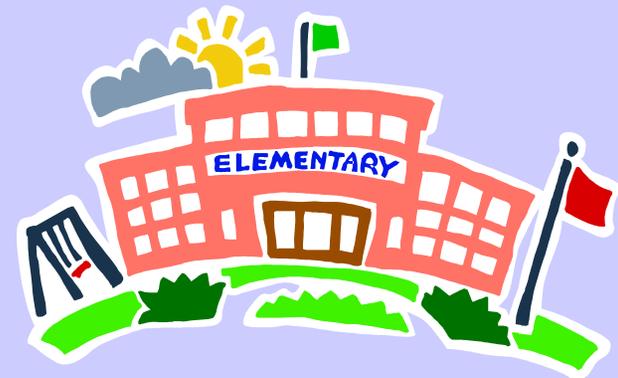
- Identify and ask teachers to take on the role of a coach.
- One teacher from each of the two secondary schools and a strong elementary teacher were chosen.
- Each secondary coach was given 1 period of release time. The elementary coach was released from class as needed.



DSBN Board Plan for Coaching

Stage 4: Invite feeder schools

- Elementary schools that feed into the secondary schools were invited to have their grade 7 and 8 teachers involved in the project.
- Most, but not all, chose to involve their staff



Areas of Focus for Coaching

- Questioning
- Using TIPS
- Focusing on important mathematics
- Effective use of manipulatives / technology (including IWB and graphing calculators)
- Teaching through the mathematical processes
- Teaching through Problem Solving

Coaches Training

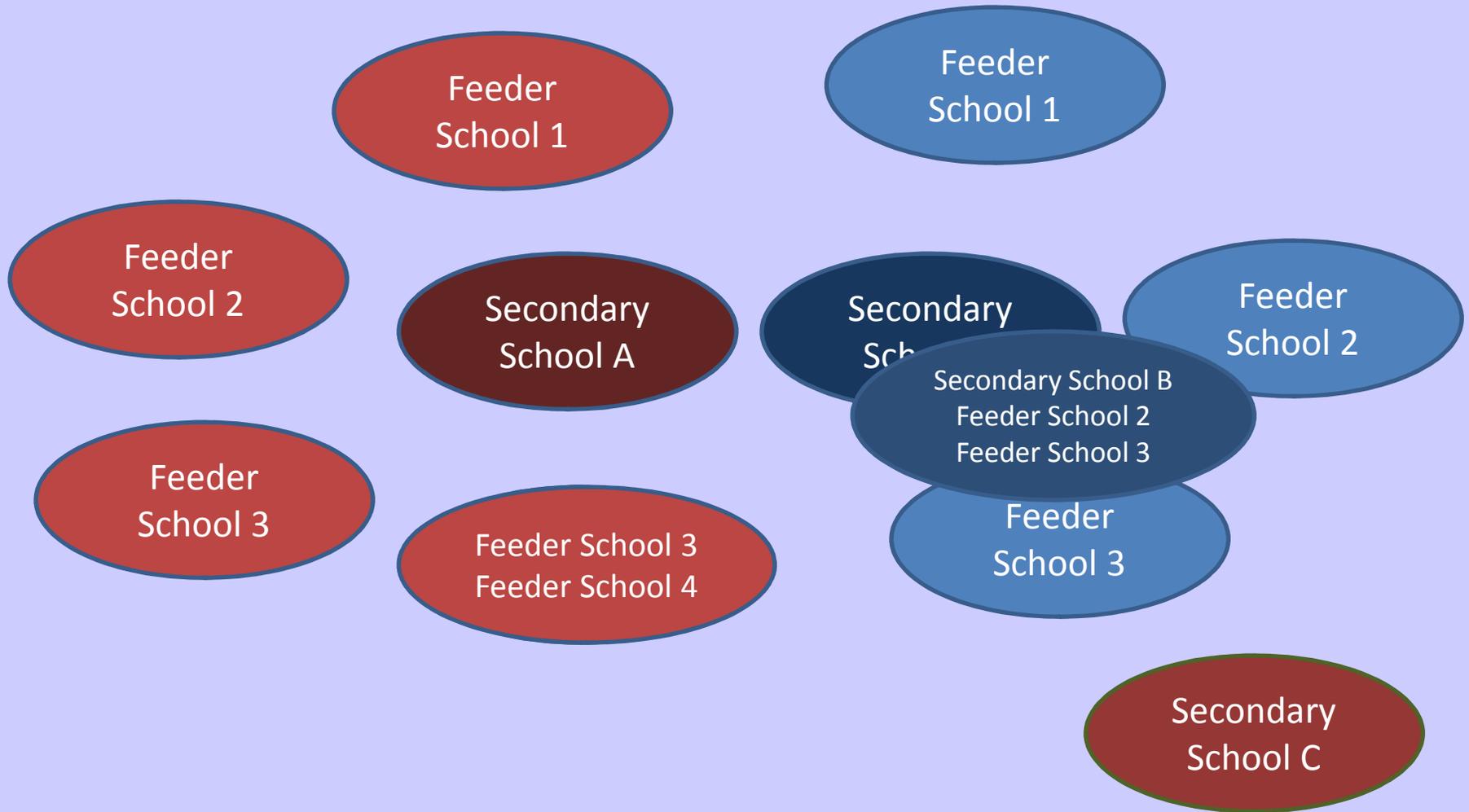
- Chose to provide PD for our coaches through our own supports rather than use provincial sessions (mainly due to timing issues)
- Coaches worked on improving their own understanding of the areas of focus as well as building their coaching skills

Beginnings

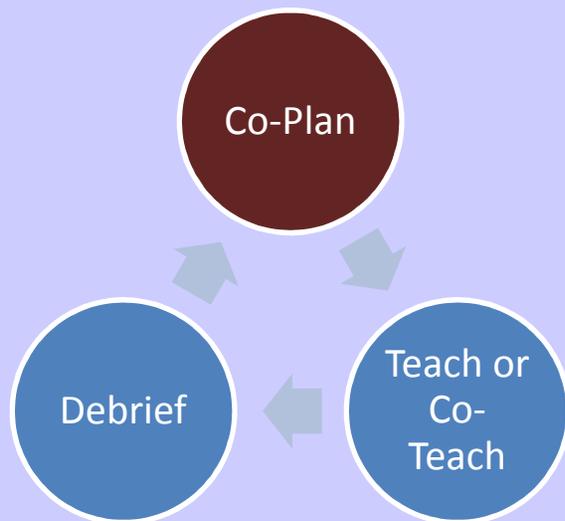


- All teachers, as well as their administrators, involved in the GAINS coaching were invited to a full day session to expose them to focus areas.
- Allowed us to send some common messages to the whole group and explain the project without concerns of misinterpretation.
- Coaching groups evolved during this session

Our Model



Coaching Cycle

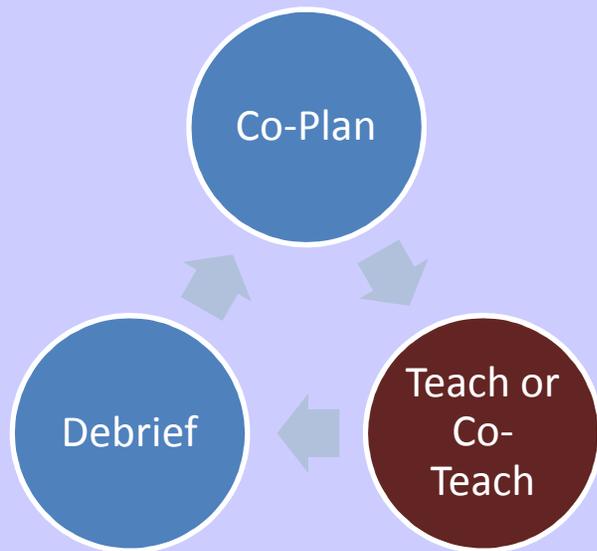


Co-Plan

Each team would meet to plan a lesson for one of the teacher's classes.

The coach would keep the discussion focused on supporting all learners, focusing on important mathematics, and as appropriate connect to the other focus areas.

Coaching Cycle

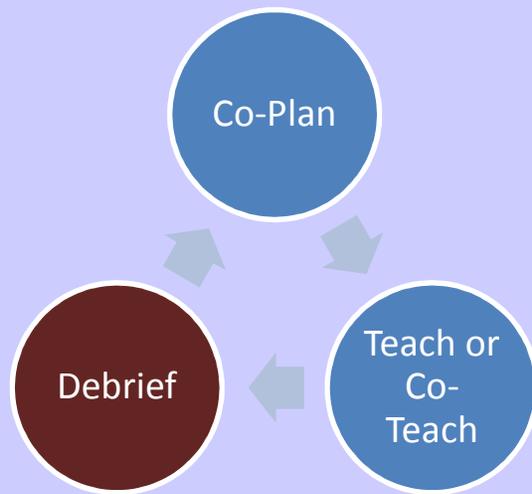


Teach or Co-Teach

The team would go into one of their classes to “test” their lesson.

- Lessons were generally student centered which allowed the observing teachers to circulate and consider how well the students were working through the problems.
- Some groups chose to co-teach the lessons while others chose to have the classroom teacher lead any discussions.

Coaching Cycle



Debrief

- Usually occurred immediately after the lesson
- Student work was brought to the debrief so that the discussion would focus on student learning
- The classroom teacher always began the discussion and then the remaining members of the team each had an opportunity to share their observations
- In some groups other teachers on the team had an opportunity to use the refined lesson in their own classroom and then report back to the group

General Observations

- Teachers working together with one goal – to help their students be more successful.
- All teachers contributing to the planning, teaching and debriefing process.
- “Weaker” students surprising their teachers by engaging in, and successfully solving, problems that the group perceived as too difficult for them.
- Students engaged in learning mathematics and talking about their thinking.
- Students demonstrating different ways of thinking about problems to their classmates and their teachers
- Teachers carefully analyzing lessons and making decisions about how they could change them to better support their students
- Support networks being built
- An increase in confidence and risk-taking by teachers and students

What aspects of your teaching did this initiative have the most impact on? Give specific examples if possible.

I reflect more on how to teach through problem solving. This forces me to “teach” less and help bring the students to the point where they are creating their own learning and/or helping others learn. It also forces me to think of what “questions” do I ask to help the students get there.

This project has created a comfort level for taking chances in my classroom. For example, I feel more confident using and trying manipulatives such as algebra tiles. I am more likely now to take risks and change my lesson to fit the flow of the students’ thinking.

How to use problems ; that the real learning is not in the doing of the problem but in the follow-up through an organized, meaningful sharing of the thinking, organizing, communicating, etc. (processes of math).

Ways that I would approach teaching new concepts. Now I would favour using more problem-solving based, hands-on tasks with small groups and sharing our solutions.



What impact did this initiative have on your students? Give specific examples if possible.

An increased interest because of confidence that comes from working collaboratively and from seeing their ideas valued;

Through problem solving they realize there is more than one way to solve a problem – for many of my students this is a new concept.

The students in my class began to focus more on each other's thinking and value this as a way of learning. They have been conditioned to solve a problem one way (and not to make connections to other reasoning or strategies) or to “do” problems rather than think about what they are learning and gauge their own understanding.



Many students came” out of their shell” – students who normally would sit quietly and not participate were really engaged and excited to learn math

A higher achievement on rich task assessments, willingness to “think” to solve a problem and the confidence that they can do math!



Strengths of the Initiative

- It was organized and directed while still allowing some flexibility
- Having time to plan and share in small groups
- The chance to view our colleagues teaching a lesson so we could get actual in-classroom experience
- Pairing up willing learners with willing sharers (coaches)
- Support at Board level but also having coaches in the schools
- being able to try something new with support
- elementary and secondary school links
- Supportive environment



Challenges

- Educating teachers and administrators about coaching so that they understand it is not about “fixing” people
- Building the relationships required for coaching to work well requires time – this is difficult to do in 4 months
- the support of the administrators in the schools is key – some felt their teachers were already involved in too many other initiatives to take part
- Teachers that are not genuine volunteers do not move forward as much as others
- In some of the schools teachers were not accustomed to having visitors in their classroom – getting teachers to open their doors took time
- Starting from scratch – no capacity for coaching at the 7 – 12 level

Next Steps

- The Board has instructional coaches in 11 of our secondary schools. Each school is working on an area of focus (differentiated instruction, assessment and evaluation, etc). Coaches are working with teachers across several disciplines.
- Math Coaching – model is still evolving for this year but will likely involve:
 - 2 secondary coaches (1 is an instructional coach in the above group) with release time
 - 1 elementary coach with release time
 - Secondary coaches will work with grade 9 teachers who volunteer to be part of the project
 - Elementary coach will support a group of 7/8 teachers made up of teachers involved in last year's group as well as some new self-identified teachers