Junior Numeracy

Professional Learning Plan

Craig Beckett

March 2011

Approach and Rationale

I have found that the best way to get teachers to buy in to a different way of doing things is to allow them time and support to make changes. I would approach this workshop in a series of meetings and discussions in a relaxed fashion. I would try to recruit willing participants and persuade a few sceptics. The plan would be to have three sessions with each session consisting of some content, a product, and a reading for the next meeting.

The series of sessions will start with connecting the notion of Big Ideas to some of the popular experts like Karen Hume and Wiggins and McTighe. The teachers would be able to see both the ministry documents that call for Big Ideas and the outside researcher experts that also espouse this position.

The second session is intended for the teachers involved to reflect on the principles of effective math instruction and to plan a strategy for reculturing the school community in its approaches to mathematics. This would

The third session is intended to plan for effective instruction in the area of fractions. Teachers will reflect on the document “Fractions” *A Guide To Effective Instruction in Mathematics, Kindergarten to grade 6—volume five* looking for useful, interesting, and thought provoking items in the guide. The teachers will eventually co-plan, co-teach, and co-assess a lesson with actual students in order to examine the principles of effective math instruction in “real time.”

Session One: Big Ideas

Big Idea: Essential Understandings, Enduring Understandings, Big Ideas as a part of purposeful backwards designed lessons are a key piece of effective math instruction.

|  |  |  |  |
| --- | --- | --- | --- |
| Topic | Questions | References and Resources | Notes and Reflection |
| * What are Big Ideas?
 | * How are Big Ideas supported by research?
 | * Wiggins and McTighe
* Hume
* Evaluating our expectations document
 |  |
| * eworkshop
 | * How could I use eworkshop
 | * http://www.eworkshop.on.ca/edu/core.cfm
 |  |
| * Document: Number Sense and Numeration, Grades 4 to 6 Volume 1 The Big Ideas
 | * What Big Idea is most important
* What Big Idea causes the greatest misconception in our learners
* Where do theses Big Ideas fit in our curriculum?
* Can we translate these Big Ideas into kid friendly language?
 | * http://www.eworkshop.on.ca/edu/resources/guides/NSN\_vol\_1\_Big\_Ideas.pdf
 |  |

Product: Evaluate the overall expectations. Which in your mind is “worth being familiar with” which is “important to know and do” and which are “enduring understandings”

Next Step: Read Principals Underlying Effective Math Instruction in *A Guide To Effective Instruction in Mathematics, Kindergarten to grade 6—volume one* pp23-43

Evaluating the expectations

|  |  |  |  |
| --- | --- | --- | --- |
| **Strand** | **Worth being familiar with:*****Overall Expectations*** | **Important to know and do:*****Overall Expectations*** | **Enduring understanding:*****Overall Expectations*** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Session Two

Big Idea: Effective math learning requires mathematically rich environments that are created by thoughtful educators. These environments don’t just exist from nothing—they are created through the principals of effective math instruction.

|  |  |  |  |
| --- | --- | --- | --- |
| Topic | Questions | References and Resources | Notes and Reflection |
| * Overview of the principals underlying effective
 | * Reflect on teacher strengths—what principles are we attuned to?
* Reflect on areas of growth—what principles are we aware of?
 | * Principals Underlying Effective Math Instruction in *A Guide To Effective Instruction in Mathematics, Kindergarten to grade 6—volume one* pp23-43
 |  |
| * Planning “KOSMA” chart
 | * What is an effective plan for ensuring that effective math principles are being taught in our school?
* How can we ensure that all of the stakeholders are well equipped allies in our pursuit of effective math instruction?
 | * KOSMA Chart
 |  |

Product: Strategic Planning KOSMA chart

Next Step: Reading “Fractions” *A Guide To Effective Instruction in Mathematics, Kindergarten to grade 6—volume five*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Students** | **Teachers** | **Principals** | **Parents** | **Board Office** |
| **Knowledge** Knowledge – understanding of theories, principals, research, ideas |  |  |  |  |  |
| **Outlook**Outlook – beliefs about the value of the program, information, strategies  |  |  |  |  |  |
| **Skills**Skills – strategies and techniques to apply knowledge |  |  |  |  |  |
| **Motivation** Motivation – desire or aspiration to engage in and follow through with a particular practice |  |  |  |  |  |
| **Application**Application - using the knowledge and skills regularly and consistently |  |  |  |  |  |

In order for the principles of effective math instruction to root in the culture of our school community we must plan with many stakeholders in mind.

Session Three

Big Idea: Fractions

|  |  |  |  |
| --- | --- | --- | --- |
| Topic | Questions | References and Resources | Notes and Reflection |
| * Overview of the “Fractions” document
 | * What did you find interesting,
* What would you use in your class?
* Are there any areas in the in the book that you think would flop in front of students?
 | * “Fractions”  *A Guide To Effective Instruction in Mathematics, Kindergarten to grade 6—volume five*
 |  |
| * Exploring the printable documents
 | * Which document on the eworkshop module do you find most useful?
 | * http://www.eworkshop.on.ca/edu/core.cfm?p=documentView&navID=documentView&c=0&type=2&L=1
 |  |
| * Co-plan, co-teach, co-assess a fractions lesson based on the “Fractions” document
 | * What do our students know about fractions
* What do we want them to know
* How will we know they know it?
 |  |  |

Product: Inquiry lessons on fractions

Next Step: Planning fractions lessons in learning triads—using collaborative inquiry to test the effectiveness of our approaches.