**NETWORK OF PERFORMANCE BASED SCHOOLS**
**2011-2012**

# BROOKLYN ELEMENTARY
# COURTENAY ELEMENTARY
# ÉCOLE PUNTLEDGE PARK
# ÉCOLE ROBB ROAD
# #71 Comox Valley

**Leadership Team**
Cheryl Adebar, Sheila Fairbanks, Sarah Heselgrave, Karla Lingren, Patrisha Reader, Ashlee Wilson

**Contact**
Cheryl.Adebar@sd71.bc.ca

**School Context/Community Involvement**
District team from Brooklyn Elementary, Courtenay Elementary, École Puntledge Park Elementary, École Robb Road Elementary.

This is a district-wide inquiry that included classroom teachers (grades 2 to 6) in both English and French Immersion classrooms. We managed to partner-teach many of the lessons by having Curriculum Support Teachers and the District Numeracy Support Teacher as participating members of our group, alongside classroom teachers. We gathered at the district resource centre to discuss our inquiry.

**School Inquiry and Action** The Use of Reading Strategies to Improve Mathematical Thinking.

**School Question**
How can we use the reading strategies that are embedded in our classroom instruction as math strategies in our math lessons?

This question grew out of our belief that we have successfully implemented many reading strategies in our classroom to meet the diverse needs of our students, but have not yet done this in our math classrooms and we believe that there must be some overlap. We wondered how to scaffold math thinking onto reading strategies.

**Strategies**
We have met seven times as a group after reading Arthur Hyde's book, "Comprehending Math; Adapting Reading Strategies to Teach Mathematics, K-6" (2006).

We have created a Math Thinking Strategies 11 x 17 page, adapting the work from Hyde's book. We gave all four participating classrooms a problem to solve as formative assessment. From this assessment, we identified determining importance as the first thinking strategy that we would explicitly teach. We created lessons through re-telling, by reviewing the math problem genre (context, information, question) and by asking questions to determine importance. We also created a bank of open-ended problem solving questions from all strands, so that we could model, practice and work independently on determining importance with a variety of problems in the different classrooms. We also created a Math Thinking Strategies rubric that included: determining importance, connecting, asking questions, visualizing, inferring, synthesizing and accuracy as the criteria. One classroom teacher also used the math thinking strategies page as a tool for numeracy circles. Lessons and materials were also shared with other teachers within these schools and other schools in our district.

**NETWORK OF PERFORMANCE BASED SCHOOLS**
**2011-2012**

**School Findings**

Determining Importance in math problems:

| | NY | A | M | E |
|---|---|---|---|---|
| Fall 2011 | 12 | 48 | 24 | 12 |
| Spring 2012 | 0 | 15 | 54 | 18 |

Problem-Solving and Reasoning

| | NY | A | M | E |
|---|---|---|---|---|
| Fall 2011 | 18 | 56 | 20 | 2 |
| Spring 2012 | 2 | 12 | 61 | 12 |

We are confident that explicit teaching in determining importance in problem solving impacted our students' ability to understand the problem and focused their thinking on understanding the problem before beginning to find a solution. Slowing down the learning led to more successful solving of the problem and permitted students to deepen their understanding. Using the Thinking Skills Strategies page provided a structure to discuss the thinking strategies and math concepts involved in all of the various problems that touched on all strands. Many students commented on how easy problem solving had become.

**School Plans for 2012-2013**
We will continue to build our open-ended problem-solving bank of questions and focus on other thinking skill strategies, based on formative assessment – perhaps explicit lessons in making connections and visualizing. A numeracy circle model has also been suggested to further student-led conversations about their math thinking.

**Reflections, Advice**
It has become apparent to us that entire units in math can be provided with the use of our Math Thinking Strategies page and an open-ended problem solving question, as an inquiry question. As needed, pauses would be taken during the inquiry cycle to explicitly teach and practice the thinking strategies and math concepts, as students work on a teacher or student – created question. Math inquiries... here we come!