



2013-2014 NOII Case Study

School: Yukon Education

District: Yukon Territory

Inquiry Team Members: Paula Thompson, Darcy LeBlanc

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Learning Principles Focus

- Emotions are central to learning – the adults in the learning environment are highly tuned into the emotions and motivations of their learners (engagement)
- Individual differences are recognized – the adults pay a great deal of attention to prior knowledge and individual differences are attended to through small and large group learning opportunities.

Scanning:

Yukon Foundation Skills Assessment reported areas requiring improvement:

- Organization of written work
- Reading math problems
- Math vocabulary

2012 – 2013 Mathematics Leadership Project “Next Step”

- Foster purposeful talk within their mathematics lessons

2012 – 2013 ELL Working Group “Next Step”

- Practical application of theory in content areas

Research indicated that a lower level of academic literacy, oral language and communication has a considerable impact on success in math and other content areas.

The English Language Learner (ELL) population in Yukon has increased from roughly 190 in April 2012 to 264 in April 2014. That is about a 40% increase in the last two years.

Focus: Will language supported instruction in the mathematics classroom improve numeracy achievement?

Hunch: Reading and writing float on a sea of talk. We think that direct instruction and scaffolding of language in math will improve numeracy achievement.

New professional learning:

We created a Mathematics and Language Learning Network that met four times over the course of the year with the following learning intentions:

- Enhance relationships with other teachers and build capacity to support best practice of language supported instruction in content areas
- Review and apply the *5 principles for language supported instruction* in a math lesson
- Analyze data for a checkpoint from a math assessment resource

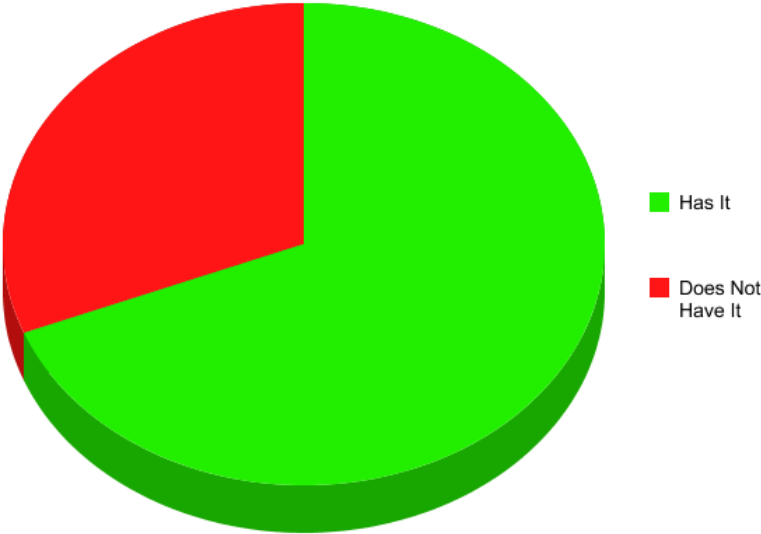
We facilitated language supported math lessons in classrooms across the Yukon. Teachers had a differentiated observation task that later informed a discussion about evidence of engagement during the lesson.

Taking action: We planned and implemented language supported math lessons in Yukon classrooms using research evidence as a guide.

Checking: Using a checkpoint from a math resource our Math and Language Learning Network participants analyzed data to check if the language supported lesson improved numeracy achievement.

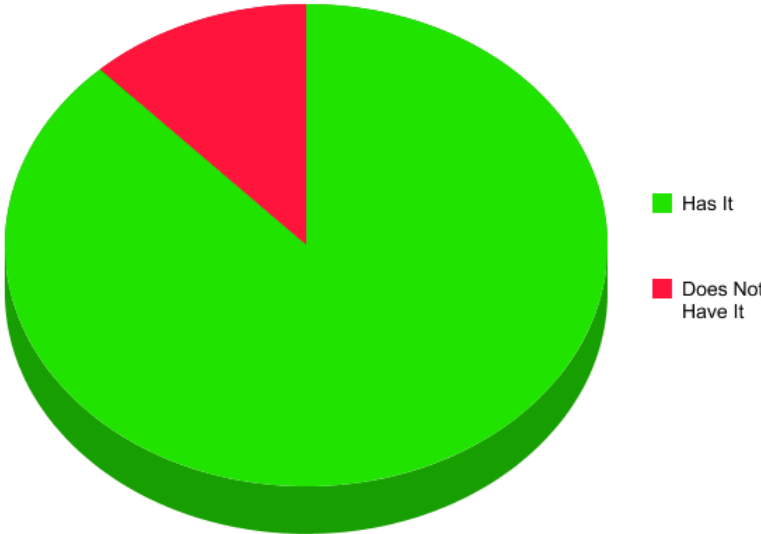
Primary/Early Intermediate Math and Language Learning Network Data

Grades K-2 Checkpoint 5 - The student knows that partitioning a group of objects does not change the total quantity.



Math and Language Learning Network Initial Data

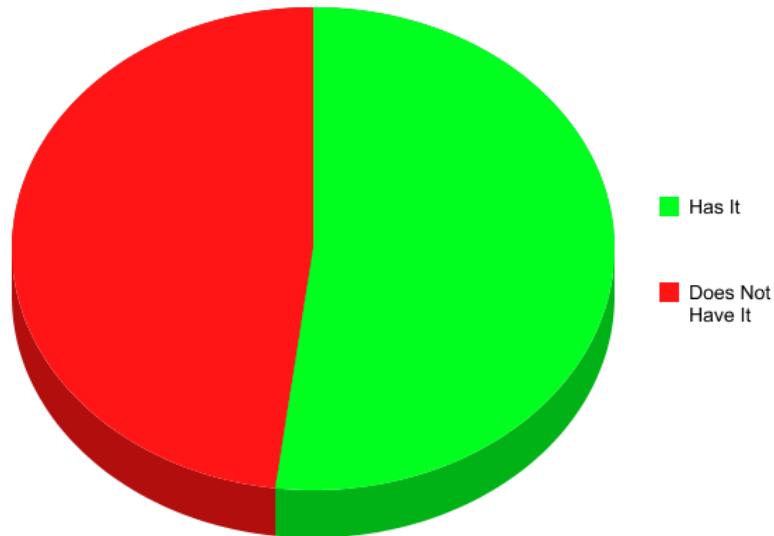
Grades K-2 Checkpoint 5 - The student knows that partitioning a group of objects does not change the total quantity.



Math and Language Learning Network March Data

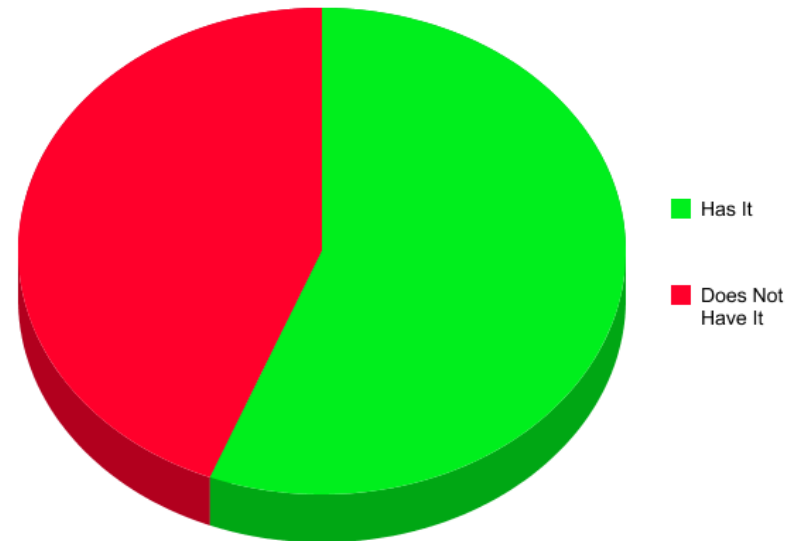
Late Primary/Early Intermediate Math and Language Learning Network Data

Grade 3 Checkpoint 7 - The student solves one- and two-digit addition and subtraction problems, using a variety of mental math strategies.



Math and Language Learning Network Initial Data

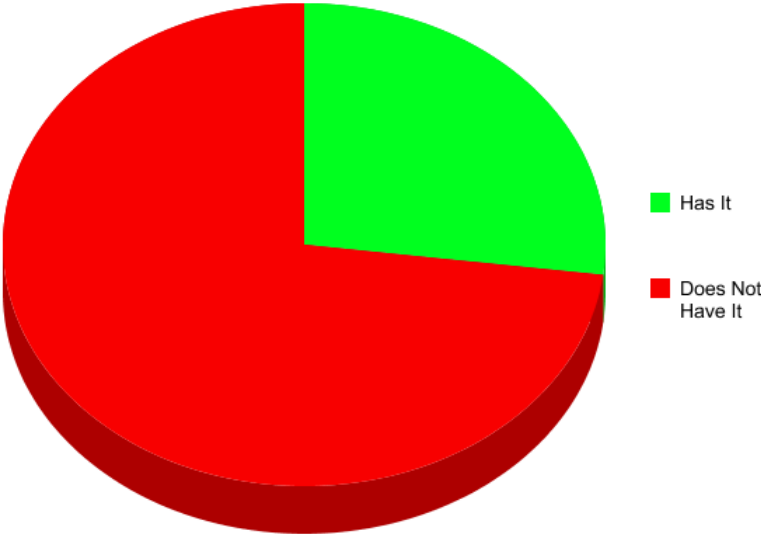
Grade 3 Checkpoint 7 - The student solves one- and two-digit addition and subtraction problems, using a variety of mental math strategies.



Math and Language Learning Network March Data

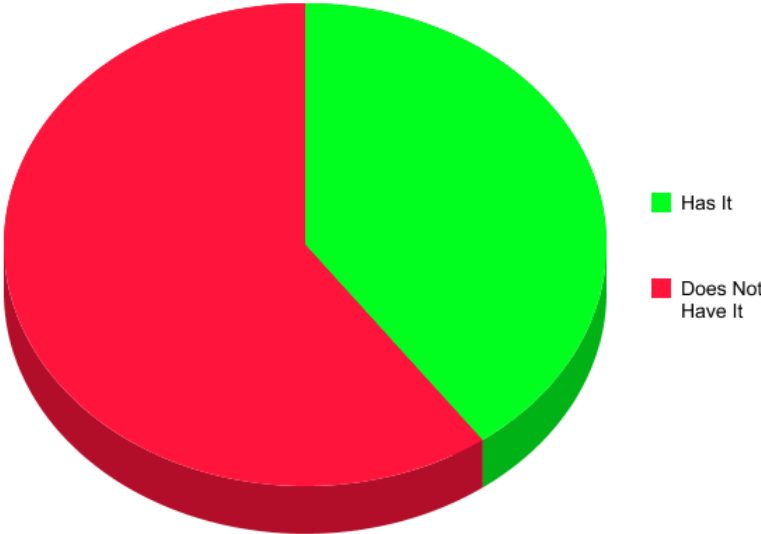
Late Intermediate/Secondary Math and Language Learning Network Data

Grade 6 Checkpoint 8 - The student uses a repertoire of mental strategies that involve applying basic facts and decomposing numbers.



Math and Language Learning Network Initial Data

Grade 6 Checkpoint 8 - The student uses a repertoire of mental strategies that involve applying basic facts and decomposing numbers.



Math and Language Learning Network March Data

We checked for engagement by observing students and by speaking with educators. Comments included:

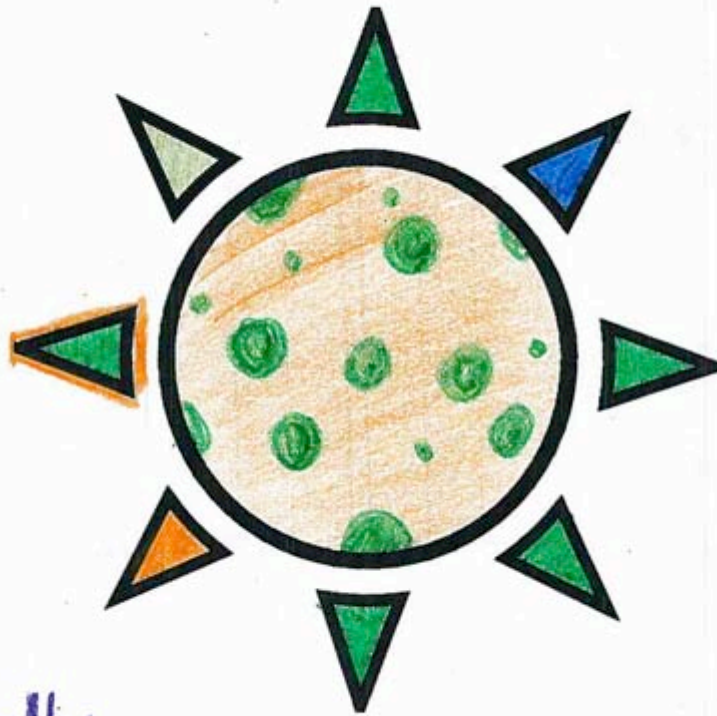
- “That is the first time _____ has ever produced any writing in class.”
- “They are rarely engaged for that long in a lesson.”
- “You got _____ to speak!”
- “Everyone was able to produce something within their zone of proximal development.”

We had the participants complete a feedback form to inform our practice.

A Compass Rose Glyph About My Experiences With Language Supported Lessons

Center	I always believed that language played an important role in the development of numeracy. - Green	My beliefs, about the role that language plays in the development of numeracy, have changed. - Orange	I do not believe that language plays an important role in the development of numeracy. - Red
North	I have identified and communicated “I can ...” content and language objectives with students. - Green	I have not identified and communicated “I can ...” content and language objectives with students yet. - Orange	I do not think that I will ever do this with students. - Red
North East	Elementary Teacher - Blue	Secondary Teacher - Black	Other - White
East	I have used a picture book as part of a language supported lesson. - Green	I have not used a picture book as part of a language supported lesson yet. - Orange	I do not think that I will ever do this with students. - Red
South East	I would use Numeracy Nets &/or Teaching Student-Centered Mathematics again. - Green	I might use Numeracy Nets &/or Teaching Student-Centered Mathematics again. - Orange	I do not think that I will ever use these resources again. - Red
South	I have used sentence frames to help enable language production. - Green	I have not used sentence frames to help enable language production yet. - Orange	I do not think that I will ever do this with students. - Red
South West	I have used ideas or one of the model lessons from Supporting English Language Learners in Math Class with students. - Green	I have not used any of the ideas or model lessons yet. - Orange	I do not plan on using this resource ever again. - Red
West	I have tried a language supported math activity. - Green	I tried a language supported activity in another subject area. - Orange	I have not tried a language supported activity yet. - Red
North West	I have seen an improvement in my student achievement data. - Green	I did not see an improvement in my student achievement data. - Orange	Other - Red

A Compass Rose Glyph About My Experiences With Language Supported Lessons



Name: Sally

Created by Paula.Thompson@yesnet.yk.ca & Darcy.LeBlanc@yesnet.yk.ca

2 Stars and a Wish



Name: Sally



I really enjoyed the lit circles and hearing other people's perspective on the articles.



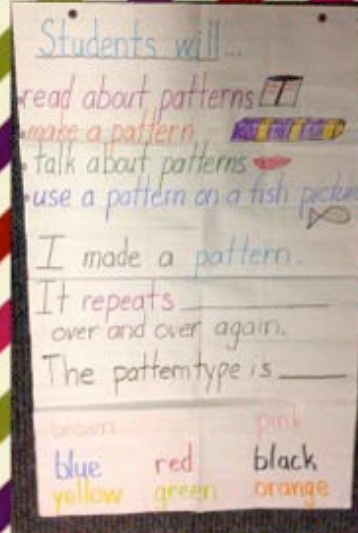
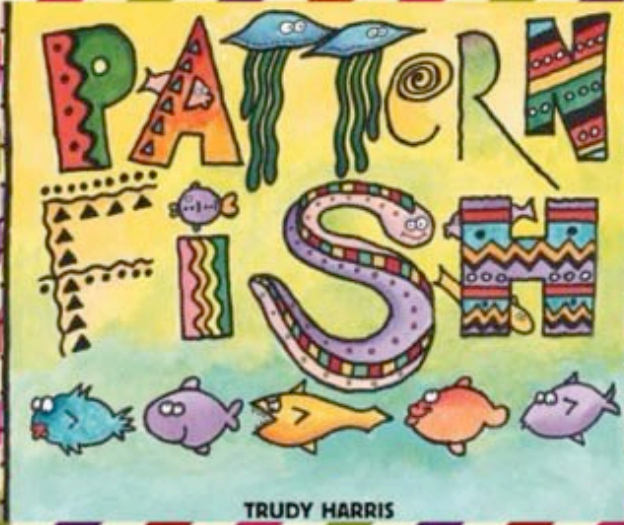
Fantastic materials, prizes, articles, Numeracy Nets book Supporting English Language Learners. THANK YOU.



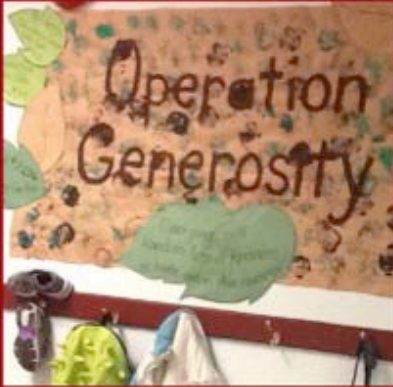
I really enjoyed this learning network, however, while I found Katy Arnett's session informative, I thought it was a bit repetitive ~~for~~ for our learning network. I would have preferred meeting just with our learning network - and having Kathy speak more specifically to us.

(I am aware this might not always be possible)

Thank you for a great session!



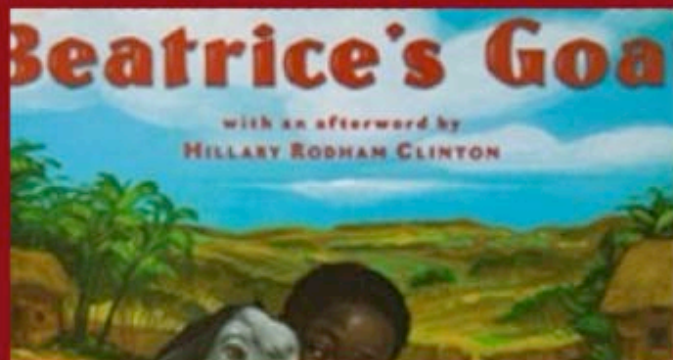
Pattern Fish



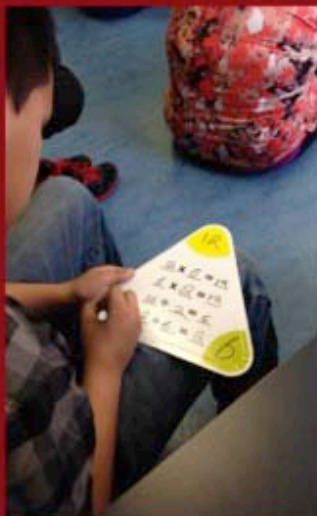
- I can...
- show related \times and \div facts
 - create a division problem
 - solve a division problem
 - talk and write about a division problem
 - write a division sentence



I have \$ 650
 _____ costs \$ _____
 I can buy _____
 I have \$ _____ left
 _____ (R=)



A World Vision Division



chicks
 I have \$650
 a cow cost 600
 I can buy 1 cow
 I have \$50 left
 so I will also buy

