



Ruamrudee International School

Union of Hearts and Minds



EARCOS Sponsored Weekend Workshop

Foundations in Math:

Developing Mathematical Thinking and Conceptual Understanding in Grades K-5

Sara Garrett

Saturday, October 7, 2017 (8:00 – 4:00)
Sunday, October 8, 2017 (8:00 – 3:00)



Workshop Description:

Math class sure has changed since we were kids! During the past 20 years, the focus in math education has shifted from procedural speed and “quickly getting the answer right” to developing a deeper conceptual understanding of mathematical concepts and being able to explain and justify mathematical thinking and reasoning. In order for students to succeed in this new approach to math education, it is essential that they build a solid foundation in their elementary years.

In this workshop, participants will explore the latest research in math education and the key elements of classrooms that develop students’ mathematical thinking and conceptual understanding. They will examine the implications of this research for their own classrooms and learn about a variety of classroom structures and instructional strategies that promote mathematical thinking and conceptual understanding for students in grades K-5.

Participants will:

- *Develop a vision of an effective mathematics classroom*
- *Examine the progression of foundational math concepts as they are described and outlined in the Common Core State Standards*
- *Explore the development of strategies that students use to solve problems*
- *Develop skills for supporting students in accurately representing their mathematical thinking through various models and progressing toward more sophisticated strategies*
- *Analyze student errors and the ways in which those errors can inform instruction*

Please note: While this workshop is not specifically geared toward the Common Core State Standards, they will be referenced and woven throughout the workshop as a model and framework for the progression of mathematical understanding. Regardless of which standards they use, teachers will deepen their understanding of mathematical content and development.

Ruamrudee International School
6 Ramkamhaeng 184
Minburi, Bangkok 10510 Thailand

Sara Garrett
Grade 3 Teacher
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Foundations in Math: Developing Mathematical Thinking and Conceptual Understanding in Grades K-5

PRESENTER: Sara Garrett, Math Consultant and Grade 3 Teacher

Sara has worked as an educator for over 15 years in a variety of settings, including teaching university outdoor education, Montessori school kindergarten, and first and second grade in an Expeditionary Learning school. She currently teaches third grade at International School Bangkok.

With a degree in Psychology, Sara is fascinated by the way young minds come to understand and communicate complex mathematical concepts. While not particularly fond of math as a student, she has developed a passion for teaching math to elementary students and supporting teachers in developing their skills as teachers of math. Sara believes that experience is the best teacher and strives to teach children and adults alike in an engaging, inquiry-based, collaborative environment.



Long-term Workshop Learning Targets:

- I can describe the key elements of a mathematics classroom that develops students' mathematical thinking and conceptual understanding.
- I can implement various classroom structures and instructional strategies to promote the development of mathematical thinking and conceptual understanding in my K-5 classroom.

A Selection of the Daily Learning Targets:

- I can explain how the structure of a lesson can impact students' mathematical understanding.
- I can use a variety of strategies to solve problems.
- I can use models that visually represent different strategies.
- I can explore the progression of different strategies and models throughout the grades.
- I can explain the two different understandings of subtraction and division.
- I can analyze the mathematical structure behind different word problems.
- I can analyze student errors in mathematics.
- I can describe how different structures within a lesson support mathematical discussion and collaboration.
- I can plan a class discussion based on student work.
- I can coach a student to record a model that matches his or her strategy.

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Agenda

Day One: Saturday

Time	Activity
7:30	Registration, coffee, and tea
8:00	Welcome and Introductions
8:30	Interactive Word Wall
8:50	Key Elements of an Effective Mathematics Classroom
10:00	Break
10:15	The Structure of a Lesson
11:30	Strategies and Models
12:00	Lunch
12:45	Building Strategy Progressions
2:15	Break
2:30	Share and Compare Strategy Progressions
3:00	Models that Match
3:45	Debrief and Exit Tickets
4:00	Dismissal

To register, please contact:

Madeleine Bystrom

Curriculum and PD Coordinator

Phone: +66 (02) 791-8900

Ext. 225

Fax: +66 (02) 5180820

E-mail: madeleineb@rism.ac.th

Day Two: Sunday

Time	Activity
7:30	Coffee and tea
8:00	Welcome back
8:15	Interactive Word Wall
8:30	The Two Meanings of Subtraction & Division
9:15	Contextual Problem Types
10:00	Break
10:15	Guided Reinvention of Strategies
11:00	Analyzing Student Work
12:00	Lunch
12:45	Analyzing Errors
1:30	Mathematical Discussions
2:30	Connections to Key Elements
3:00	Dismissal



Registration Fee: US \$50.00 for EARCOS members

- Includes: Saturday and Sunday light breakfast, lunch, snacks, and materials

Credit Hours

- 1 credit hour from San Diego State University (SDSU) will be available.

Accommodation Options in Bangkok/Minburi

Workshop participants are responsible for booking their own accommodation. Below is a list of accommodation options with which the school is associated. Rooms should be booked directly to the hotel by referring to “Ruamrudee Corporate Rate.” If you are arranging for your own transportation, Bangkok traffic is notoriously unpredictable. Sundays are usually good days for traffic and transportation to RIS from a downtown hotel should be significantly shorter. Transportation will be provided to and from the Four Wings Convention Hotel only.

Minburi/Close to RIS: hotel pick up at 7:00 on Saturday and 7:30 on Sunday

Name	Email/website	Daily rate	
Grand Four Wings Convention Hotel	www.grandfourwings.com		
	Email: pimthip_w@grandfourwings.com		
	Contact: Reservation Department P: +66 2 378 8000 F: +66 2 378 8080		
		<i>Single</i>	<i>Double</i>
		Deluxe THB 2,700	THB 2,900
	Grand Deluxe THB 3,200	THB 3,400	
	Deluxe Suite	THB 4,700	
Address: 333 Srinakarin Road, Huamark, Bang Kapi, Bangkok			

Airport Transfer

- The Airport Rail Link conveniently transfers you to many inner city hotels and the BTS and MRT transit systems. For information on stops visit <http://www.srtet.co.th/en>.

Hotel Transfer

- RIS will provide transfer to and from the Grand Four Wings Convention Hotel.

Additional Visitor’s Information:

Ground Transportation from Suvarnabhumi Airport: Taxi or airport link
 Approximate Exchange Rate: 1 USD = 35 Thai Baht
 Visa: Please check with the Thai online embassy information.

Deadline for Registration is September 29, 2017

We can only accommodate 45 participants, on a first-come, first-served basis.

Registration contact:

Ruamrudee International School
 6 Ramkamhaeng 184
 Minburi, Bangkok 10510
 Thailand

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 +66 (02) 791-8900 ext. 225

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REGISTRATION FORM

First Name: _____ Last Name: _____

School Name: _____

Position at your school and/or grade level: _____

Mailing Address: _____

E-mail Address: _____

Telephone Number: _____ Fax Number: _____

Check all that apply:

Yes, I will register for the 1 credit course from SDSU.

I have the following requests: _____
For example: physical accommodations or dietary needs during the workshop

Registration Fee: USD \$50.00 (please check one)

Bank transfer to:

Account Name: Redemptorist Foundation
Account Number: 212-3-03488-2
Bank name: Bangkok Bank PCL
Bank Branch: Intrarak
Swift code: BKKBTHBK

Please fax the payment slip from the bank transfer to +66 (02) 5180820 attn.
Madeleine Bystrom

I will be paying in **cash** on the first day of the workshop (USD \$50.00 or THB 1,800)

Information about graduate credit will be available on the first day.