

UNIVERSITY OF SIOUX FALLS
Graduate Program
(ONE workshop proposal per form please.)

Agency making the request ___Region 3 ESA

Contact Person submitting this proposal _____Roxane Dyk, SD Counts Math Specialist

Address _____Box 228 Platte, SD 57369 Phone ___337-2636_

Title of proposed workshop (**Maximum of 4 words**)

Mini Foundations

Workshop will be **P/NC** unless you specifically request it be graded (**requires grading assessment be written into the syllabus at time of submission**). Check one: **P/NC**_

Graded ___x___

Department designation **EDU** Location ___Math_____

Start date **AND** end date (**when workshop is entirely finished**) _May-07 thru June-07

Anticipated enrollment wanting **graduate** credit _100_ (Registration forms will be sent with the approval letter.)

Number of workshop sessions _____2_____ Hours per session _____7.5_____

Number of hours of **graduate** credit (One credit hour normally requires 15 contact hours.) ___1_____

Do you also want to offer this workshop for **undergraduate** credit? YES ___x___

NO _____

Anticipated enrollment wanting **undergraduate** credit _10_____

Primary Instructor's name _Roxane Dyk Address _Box 228, Platte, SD 57369_____

Additional Instructor(s) and address(es)_

Please attach a vita or resume for each instructor, including the Instructor of Record (person who will be signing the grade sheet), if different from the instructor(s) teaching the workshop. The Instructor of Record must have a minimum preparation of a Masters degree plus documented exceptional expertise in the area or a masters plus 30 hours of additional graduate study to offer graduate credit. **Neither** the Instructor of Record **nor** the instructor(s) of the workshop are eligible to receive credit for the workshop.

Syllabus. Please attach a syllabus indicating the dates and times of each session, the general objectives of the workshop, the specific topics to be covered in each session, and the requirements expected of participants. It must also indicate the method to be used in evaluating participants.

Advertising. How will this workshop be advertised and who is the target audience? (The availability of University of Sioux Falls credit cannot be advertised until you receive approval of this proposal.)

Name of Instructor of Record _____ **Roxane Dyk, Math Specialist, Region 3 ESA**
(Person who will be signing the grade sheet.)

Signature _____

South Dakota Counts
Mini Foundations
Summer 2007
Roxane Dyk

Course Description: This course designed to deepen teachers' awareness of ways that students come to understand math. Four separate sessions will be held in the following areas.

- Adding It Up-participants will learn about the strands of student mathematical proficiency which will include: conceptual understanding, procedural fluency, strategic competence, adaptive reasoning and productive disposition.
- Making Sense-participants will learn the dimensions of classrooms that promote mathematical understanding which will include: nature of tasks, role of the teacher, social culture, tools and equity and accessibility
- Cognitively Guided Instruction-participants will begin to know and understand children's mathematical thinking in number sense.
- Relearning to Teach Arithmetic-participants will learn how to build off students' procedural fluency in computation based on children's conceptual understanding.
(See attachment for greater detail)

Course goals:

- 1) Participants will experience inquiry-based instructional strategies as they are modeled throughout the day.
- 2) Participants will be introduced to CGI, components of a CGI classroom, and different solution strategies for addition/subtraction problems.
- 3) Participants will have an increased understanding of the five strands of mathematical proficiency.
- 4) Participants will have an increased understanding of what the process standards look like in a classroom setting.
- 5) Participants will learn different approaches that children use when solving basic addition/subtraction and multiplication/division problems.

Description of Instructional Methodology:

The instruction delivery will be an inquiry-based approach with the following components:

- Readings and class discussions
- Problem-solving activities
- Classroom modeling via video
- Participant presentations
- Differentiating different types of problems
- Five dimensions for a successful classroom

Course Requirement:

Participation: Attendance at sessions during this 2-day event

May 30-31 Platte 9:00-4:30 (working lunch)

June 18-19 Mitchell 9:00-4:30 (working lunch)

June 20-21 Wagner 9:00-4:30 (working lunch)

Participant presentation

Working individually/small group/large group to problem-solve

Evaluation Procedures:

Attendance at all meetings/sessions

Participation in daily activities

1-page reflection

A-attendance at all meetings/sessions

-participation in daily activities

-one-page reflection

B-attendance at all but one session

-participation in daily activities

-one-page reflection

C-attendance at one day

-participation in daily activities

-one-page reflection

Five Dimensions of Quality Mathematics Instruction

Quality math instruction promotes and supports understanding. At all levels this understanding involves five basic dimensions: classroom tasks, the role of the teacher, the social culture of the classroom, mathematical tools used as supports for learning, and equity and accessibility for all learners. Participants in this session will be able to examine each of these dimensions and learn about ways to use them in their classrooms. Much of the discussion will be based on the book *Making Sense* by Hiebert, Carpenter, Fennema, Fuson, Wearne, Murray, Olivier, & Human. This session is one of four that directly supports the work of SD Counts in our state.

What is Cognitively Guided Instruction?

Every elementary math teacher who has ever struggled to teach students how to solve a “story problem” will find themselves at home in this session! Cognitively Guided Instruction (CGI) is a research-based method of teaching mathematics that encourages problem solving in meaningful contexts with flexible solution strategies. Using problem solving as a basis for all math instruction, students are able to build mathematical understanding through questioning, integrating mathematical concepts and communicating learning to others. Participants will learn how to differentiate among different types of problems and will begin to identify how students use different strategies to solve these problems. This session is one of four that directly supports the work of SD Counts in our state.

Relearning to Teach Arithmetic

Participants in this session will learn to emphasize the importance of conjecturing, inventing, and problem solving in the elementary classroom. The content of this session represents a departure from the traditional memorization of procedures and facts and instead, emphasizes the development of students’ mathematical thinking. Those attending this session will watch students (via videotape) solving problems and then consider what underlies the development of fluency in carrying out these operations. This session is one of four that directly supports the work of SD Counts in our state.

Adding It Up

This presentation will look at the National Academies publication, **Adding It Up** and take a look at how students in elementary grades learn mathematics. It will also address how teaching, curricula, and teacher education impacts mathematics learning. There are five interdependent components of mathematical proficiency and we will be learning about how students develop this proficiency. We will discuss the processes by which students acquire mathematical proficiency with whole numbers, rational numbers, and integers, as well as beginning algebra, geometry, measurement, and probability and statistics. Our discussions will be focus on what is known from research about teaching for mathematics proficiency, focusing on the interactions between teachers and students and how teachers can develop proficiency in teaching mathematics. Much of the discussion will be based on the book, **Adding It Up** by Jeremy Kilpatrick, Jane Swafford, Bradford Findell, *Editors*; Mathematics Learning Study Committee, National Research Council. This session is one of four that directly supports the work of SD Counts in our state.

ROXANE LEBER

Box 884 Platte, SD 57369 (307) 337-3746 roxane.leber@k12.sd.us

EDUCATION

Black Hills State University, Spearfish, SD 57783 December, 2001
Masters in Curriculum and Instruction
Emphasis: Technology

Black Hills State University, Spearfish, SD 57369 December, 1990
BS in Physical Education and Elementary Education
Minors: Business Education
Coaching

National American University, Rapid City, SD 57701 May, 1984
Associate Degree – Medical Assisting

PROFESSIONAL

SD Counts/Region 3 ESA July 2006-present
Math Specialist

Region 3 ESA/Mid-Central Educational Cooperative August 2004-present
Educational Specialist

DIAL/Mid-Central Educational Cooperative August, 2002-04
Program Coordinator

Crook County School District, Moorcroft, WY 82721 August, 1999-2002
Business classes 7 & 9, Career Education, Earth Science
and newspaper
Coaching: Head Volleyball
Assistant Girl's Basketball

Belle Fourche School District, Belle Fourche, SD 57783 August 1994-1999
Computer Teacher, Career Education, Physical Education
Coaching: Middle School Volleyball
Middle School Basketball
Assistant Girl's Volleyball

Smee School District, Wakpala, SD 51121 August 1990-1992
K-12 Physical Education/Health, 7th Language Arts,
Computers/Accounting
Coaching: Basketball, Cross Country

HONORS/ORGANIZATION

NCTM, ASCD, National Staff Development Association, Dean's List, Business Educator's Association, Wyoming Education Association, High School Coaches Association, Volleyball Officiating Association

SOUTH DAKOTA SOUTH DAKOTA SOUTH DAKOTA
Counts Counts Counts

Mini Foundations Reflection Piece

What did you learn or begin to better understand?

1.

2.

3.

What do you still need more information about?

1.

2.

3.

My plan to integrate or implement will begin here.

1.

2.

3.