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# MATHEMATICS AND SCIENCE PARTNERSHIP GRANTS

No Child Left Behind Act of 2001 Title II, Part B of the Elementary and Secondary Education Act

**Please be aware that this grant is contingent upon the availability of federal funding.  
To date, Congress has not appropriated the Title II, Part B funding for school year 2012-2013.**

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## REQUEST FOR PROPOSALS

Request for Proposal (RFP)  
DOE -009-002

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South Dakota Department of Education  
Office of Learning and Instruction  
800 Governors Drive  
Pierre, SD 57501  
Equal Opportunity Employer

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Proposal Issue Date: **April 6, 2012**  
Proposal Due Date: **April 20, 2012**

Approximate Proposal Award Notification Date: **May 15, 2012**  
Proposal Contact: **William Kliche (605) 773-8196**  
E-mail: [William.kliche@state.sd.us](mailto:William.kliche@state.sd.us)

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# **I. INTRODUCTION MATERIALS**

## **South Dakota Mathematics and Science Grant Application**

### **Federal MSP Project Description**

The Mathematics and Science Partnerships (MSP) grant program is authorized under Title II, Part B of the Elementary and Secondary Education Act (ESEA), as amended by the No Child Left Behind (NCLB) Act of 2001.

The purpose of the program is to fund partnerships of:

- high-need school districts,
- four-year institutions of higher education (IHEs),
- and other organizations;

to improve the academic achievement of students in mathematics and science in elementary and secondary schools.

The MSP program provides grants to partnerships between K-12 schools and higher education institutions through the Department of Education (DOE) that seek to actively boost K-12 achievement in math by improving and upgrading subject area professional development, encouraging and advising teacher training and recruitment, and strengthening challenging subject-area curriculum. For further information on the Federal MSP program: <http://www.ed.gov/programs/mathsci/resources.html>

### **South Dakota MSP Description**

The primary goal of the South Dakota MSP is to create a focused statewide professional development program designed to continue building a broad-based expertise and leadership for improving student achievement in elementary mathematics instruction. The program will continue developing a statewide educational community with a cadre of skilled professionals to serve as resources and trainers in the ongoing effort to improve elementary mathematics instruction. Susan Loucks-Horsley reported in *Designing Professional Development* that most research indicates it takes three to five years to fully implement a new program or practice therefore we can't expect student achievement to change in a short period of time.

In previous rounds of MSP proposals a project called South Dakota Counts was created. The project was funded for six years and focused on grant recipients gaining increased content knowledge and pedagogy in mathematics. Rounds one and two created math specialists throughout the state and helped to deepen content knowledge for K-6 participating teachers in understanding student thinking in Numbers and Operations, Algebra, Geometry and Measurement. Round 3 will continue with the same focus and add a specific focus on the Common Core State Standards in Mathematics (CCSS-M). The goal of SD Counts is to support teachers using their district-adopted materials. This project does not advocate for the implementation of any particular instructional materials and project staff will not advocate for one set of materials over another. The goal is good instruction regardless of the materials used by the districts.

The K-6 mathematics professional development project for this RFP utilizes research based strategies which have been evidenced to be effective with students of diverse backgrounds. It is the intent of this grant that new participating teachers complete all components of the training to effectively impact mathematics instruction. Continuing teacher leaders will continue to develop their skills and provide leadership to their individual school district/building. Common assessment tools will be utilized across

all projects to assist the state in evaluating and providing feedback on the overall state level project as well as ensure a means to conduct research around all awarded projects.

Each funded project will have the following:

**Math Specialist/Project Manager:** Full time math specialists/project manager will:

- Collaborate with SDDOE, CAMSE, and/or other IHEs to coordinate grant activities and deliver professional development components.
- Coordinate internal evaluation activities including collection of data, any local data analysis which might be necessary, submit and complete any reports of data to SDDOE and external evaluator. Additionally, coordinate the completion of the Annual Performance Report required by the USDOE.
- Attend professional development centered on mathematics content, mathematics pedagogy, student mathematical thinking and educational leadership.
- Conduct site visits with teacher leaders. Minimum of 10 for new teacher leaders and 3 for continuing teacher leaders each project year.
- Conduct monthly meeting of teacher leaders, teaching classes can be a monthly meeting but site visits do not count as a monthly meeting. Monthly meeting can be conducted via distance technology.
- Submit to SDDOE a monthly schedule of teacher leaders names and time of site visits, monthly meetings and classes; this should be done prior to the beginning of each project month.
- Submit to SDDOE monthly documentation regarding time spent with teacher leaders, this will be done at the end of each project month.
- Support the work of **20-25** elementary math teacher leaders.
  - **Math specialists coaching less than 20 teacher leaders will be considered less than full time & salary adjustments will be made. Continuing teacher leaders counts as one half for the purpose of determining FTE.**
  - **Math specialists coaching more than 25 teacher leaders will need to justify how they will be able to meet their needs.**
  - **Math specialist will work 175 or more days to be considered as a FTE.**
  - **Math specialist will work 120-174 days to be considered as a  $\frac{3}{4}$  FTE.**
  - **Math specialist will work 70-119 days to be considered as a  $\frac{1}{2}$  FTE.**

**Math Teacher Leader:** math teacher leader(s) will:

- Attend professional development centered on mathematics content, mathematics pedagogy, student mathematical thinking, and educational leadership.
- Utilize professional development content in mathematics instruction to impact student achievement in mathematics instruction.
- Upon completion of one year of training, provide training for other interested K-6 teachers within the elementary building.

## **Project Objectives**

During the next three years, the SD MSP Program will:

- Increase student academic achievement as measured by the state mathematics standards.
- Train and support new and/or continuing mathematics specialists in up to 9 different sites in South Dakota.

- Provide training for new and/or continuing mathematics teacher leaders in all participating elementary schools.
- Support work in each participating district to train additional interested K-6 teachers. Seventh and eighth grade teacher leaders will be allowed in SD Counts, as space is available.
- Ensure sustainability of SD Counts program elements.

### **South Dakota Project Rationale**

The research is clear that a skilled teacher is the most important factor in improving student learning. The SD MSP project is designed to deepen and broaden teachers’ knowledge base about mathematics content, mathematics pedagogy, and student mathematical thinking. Funded projects must provide teachers the opportunity to experience “best practices” in teaching mathematics. This must include constructivist instructional practices that promote mathematical reasoning, discourse, inquiry and conceptual understanding for all students. This rationale is entirely consistent with the CCSS-M.

In order to answer the question of why the continued focus on elementary mathematics various sources of assessment data were analyzed. After the first two years of SD Counts, data shows student achievement on the Dakota STEP is higher for students in Counts classrooms than in non Counts classrooms. The difference is most noticeable at grade 5.

From a national perspective, South Dakota has remained stagnant in terms of grade 4 NAEP scores in mathematics. Currently, the number of states scoring higher than South Dakota has increased from 8 in 2003 to 13 in 2007.

NAEP and Dakota STEP data supports the need for continued focus on elementary mathematics and professional development especially in schools serving Native American and low socioeconomic status students. The gaps are closing but the differences in percentages of proficient and advanced students are still significant using either NAEP or DSTEP data.

In addition, data has been collected in the areas of teacher content knowledge, attributes of effective instruction, attitudes about teaching mathematics and student learning. Data shows there has been improvement in teachers’ confidence in the area of instruction and the teaching of mathematics.

### **Project Roles and Responsibilities**

**South Dakota Department of Education (SDDOE)** – provides oversight and support of the statewide initiative.

**IHE (Institution of Higher Education) - Black Hills State University’s Center for the Advancement of Mathematics and Science Education (CAMSE AT BHSU)** – provides SD Counts training for new teacher leaders, conducts the evaluation of the content workshops, analyses and prepares teacher growth and attitude data for the required annual reporting and provides content and pedagogy course work to individual grantees if chosen as a continuing participant.

**Grant Awardee-** serves as fiscal agent for the grant and carries out the grant activities, coordinates and conducts local evaluation as described within this RFP.

**Local School District** – local participating school district comprised of Math Teacher Leaders, other participating teachers and the principal.

**External Evaluator** – conducts program evaluation over the course of three years in order to measure the impact of the project on student achievement.

**Professional Development Components** All projects are required to include the following;

**Summer Content Courses** – week or longer professional development focused on content provided by IHE faculty.

**Follow-up** – regional course work focused on pedagogy, and content, as well as other school based activities. Follow-up in combination with summer work must total not less than 80 hours and is recommended to be upwards of 112 hours.

### **Funded Project Options**

Each applicant will have two options to consider:

#### **Option 1: Primary focus on new participating school districts**

New districts, schools and teacher leaders will take the SD Counts training provided by CAMSE. Maintenance support will be given to continuing teacher leaders in continuing schools. Summer content coursework/ institutes for continuing teacher leaders will be determined by the grantee. Data analysis should support your need for new participants. A plan for supporting continuing teacher leaders will need to be outlined on the Local School District Description of Support form.

#### **Option 2: Balanced focus between new and continuing participating school districts**

New districts, schools and teacher leaders will take the SD Counts training provided by CAMSE. A plan for meeting the professional development needs of the continuing schools, teacher leaders should be outlined on the Local School District Description of Support form. This plan must include a summer institute and follow up school activities.

### **Eligible Applicants**

Competitive grant applicants must meet **one** of the following criteria to be eligible to apply for this RFP:

1. be an Educational Cooperative, Educational Service Agency, or partnership between two or more ESA's/Ed Coop of sufficient size and scope to complete the outlined activities in the project and;  
must partner with at least one high-need local educational agency within it's boundaries as determined by SDDOE or;
2. be categorized as a local educational agency with a student population of 10,000 or greater and meet the high-need school district eligibility requirements to be considered of sufficient size and scope to complete the outlined activities in the project. This LEA may be partnered with other high-need local educational agencies if warranted.

## **Eligible Partnership**

Competitive grant applicants must include **one** of the following partnerships to be eligible to apply for this RFP:

1. an engineering, mathematics, or science department of an institution of higher education; and a high-need local educational agency; and
2. may include
  - another engineering, mathematics, science, or teacher training department of an institution of higher education;
  - additional local educational agencies, public or private elementary schools, or a consortium of such schools;
  - a business; or
  - a nonprofit or for-profit organization of demonstrated effectiveness in improving the quality of mathematics and science teachers.

**Eligible High-Need Local Educational Agencies**  
 (Based on 2005 Census Poverty Data)

Aberdeen 06-1	Lead-Deadwood 40-1	St. Francis Indian School 66301
American Horse 03301	Little Wound School System 65306	Summit 54-6
Andes Central 11-1	Loneman School 65307	Takini School 64302
Bennett County 03-1	Lower Brule School System 42301	Timber Lake 20-3
Brookings 05-1	Lyman 42-1	Tiospa Zina School 54302
Chamberlain 07-1	Marty Indian School 11301	Tiospaye Topa School 20303
Crazy Horse 35301	McLaughlin 15-2	Todd County 66-1
Crow Creek Tribal 34301	Meade 46-1	Tripp-Delmont 33-5
Doland 56-2	Mobridge- Pollock 62-3	Vermillion 13-1
Douglas 51-1	Newell 09-2	Wagner 11-4
Dupree 64-2	Oelrichs 23-3	Wall 51-5
Eagle Butte 20-1	Pierre 32-2	Watertown 14-4
Enemy Swim School 18301	Porcupine Contract School 65303	Waubay 18-3
Faith 46-2	Rapid City 51-4	Waverly 14-5
Flandreau 50-3	Rock Creek School 15302	White River 47-1
Hitchcock-Tulare 56-6	Shannon Co. 65-1	Winner 59-2
Huron 02-2	Sioux Falls 49-5	Wolsey-Wessington 02-5
Jones County 37-3	Sisseton 54-2	Wounded Knee School System 65302
Kadoka Area 35-1	Smee 15-3	Yankton 63-3

## Non-public School Participation

All state accredited non-public schools within the physical boundaries of a participating school district must be consulted for participation in the SD MSP Program and sign as to the intentions of their participation in the project.

### **Grant Awardees will:**

- Collaborate and communicate with SDDOE program manager;
- Provide information and data to SDDOE upon request for purposes of evaluating, monitoring and documenting implementation of the grant;
- Create and sustain a partnership with CAMSE (BHSU) and/ or other IHE's during the development and implementation of grant activities;
- Submit all federal and state required MSP reports to SDDOE;
- Assure good faith, commitment and support of the administration and the school board in the development and implementation of proposed activities; and
- Create a sustainability plan with participating schools.

### **Local School District will:**

- Identify one or more math teacher leader for each elementary building;
- Provide district support to all staff participating in the project;
- Create and sustain a partnership with the grant awardees;
- Provide information and data to the grant awardees upon request for purposes of evaluating, documenting implementation of the grant, and reporting; and
- Assure good faith commitment and support of the administration and the school board in the development and implementation of proposed activities.

### **Award Period**

It is anticipated that up to nine grants will be awarded. The grants will be awarded for three years. The award dates are as follows:

Year 1 - July 1, 2012-June 30, 2013

Year 2 - July 1, 2013-June 30, 2014

Year 3 - July 1, 2014-June 30, 2015

**Awards for this project are contingent upon available federal funding and continued successful implementation of the program. To date, Congress has not appropriated the Title II, Part B funding beyond school year 2012-2013.**

Additional school districts/buildings **cannot** be added in year two and three of the grant, without permission of SDDOE. Those school districts/buildings committing in the first year of the grant should expect to participate in the professional development activities and implementation of the mathematical instructional strategies within their classrooms for the **full three years**.

It is critical that close attention be paid to the budget as the budget **will not** be increased from the original budget amounts submitted in this RFP by the applicant.

**It is anticipated that funding determinations, as well as, awards will be announced approximately May 15, 2013.**

The South Dakota Department of Education reserves the right to negotiate individual costs with applicant if necessary.

### **Proposal Criteria**

In order to be considered for funding, applicants must:

- Completely and thoroughly answer all questions within the RFP.
- Must contain appropriate signatures to be considered.
- Demonstrate a real need and commitment for the chosen local partnerships in this grant.
- Outline an accurate budget.

### **Scoring Criteria:**

Application scoring will be based on a rubric consistent with each identified question as outlined in the RFP.

<u>Category</u>	<u>Points</u>
Abstract	5
Previous Title II part B Evidence of Success	5
Project Plan	20
Educational Need	10
Sustainability and Support	20
Local Project Evaluation & Accountability	20
Budget	10
Reviewers individual score	<u>10</u>
Total	100

### **Submission Guidelines**

To be considered for participation in this program the following requirements must be met with this RFP Application.

1. One **original** paper proposal (word processed or typed) with appropriate original signatures.
2. Two complete **paper copies** of original proposal.
3. One **electronic copy** of the original proposal (Word or PDF format) with or without signatures. This may be submitted via email by submission deadline or enclosed via disc or USB storage device.

Faxed or emailed only proposals will not be accepted.

Proposals must be postmarked by **April 20, 2012** or hand-delivered to the Department of Education, Office of Technology, Curriculum and Assessment by **5:00 PM (CST)** on the stated deadline.

Mail or hand-deliver the completed proposals to:

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*2012 Request for Proposal*

*South Dakota Math and Science Partnerships Grant Application (Title II, Part B)*

**South Dakota Department of Education  
Office of Learning and Instruction  
Attn: William Kliche  
Title II, Part B  
800 Governors Drive  
Pierre, SD 57501**

**SDDOE is not responsible for transmittal time or irregularities in delivery on the part of the US Postal Service or other courier services.**

SDDOE reserves the right to reject any and all submissions received as a result of this application process.

## **II. PROPOSAL REQUIREMENTS**

## PROPOSAL REQUIREMENTS

### **Abstract** (5 points)

Provide an abstract, in 250 words or less, that states the expected outcomes in mathematics instruction and any indirect needs in mathematics that would be addressed as a result of this project.

### **Previous Title II part B Evidence of Success** (5 points)

Please provide evidence of success from the previous rounds of SD Counts.

### **Project Plan** (20 points)

Identify which of the two options this proposal will focus its efforts in implementing the project. Provide the expected plan of support for new and continuing teacher leaders (who are required to attend SD Counts training with CAMSE).

Your project plan should be focused on the work that will be done locally in your project. Describe how your project will support teacher leaders during the academic year.

Complete the action plan form on page 27 of this rfp.

### **Educational Need** (10 points)

Identify participating local school district and note the high-needs school districts on that list. Compile the required data below. Explain how you plan to serve the needs of each district on your list.

Required data sources:

1. Demographic data – i.e. student enrollment, socio-economic status, race/ethnicity, etc.

Optional data sources:

1. Program data – i.e. teacher credentials, graduation rates, program evaluation methods, etc.
  - Comparison data between Counts participants and non Counts participants
  - Aggregate Counts project data if applicable.
2. Perceptions data – i.e. survey information regarding school climate, professional development participation, tardiness, etc.

### **Sustainability and Support** (20 points)

Primary applicant must:

- Explain how the partnership will support new and continuing teacher leaders throughout the project.
- Include plans to continue the activities of the project after the multi-year grant period has ended.

Each local school district must:

- Explain how they will support their teacher leader during the project

- Create a culture of acceptance for the nature of the Counts project.
- Explain how they will sustain the project beyond the funding period.

Completing the required forms on pages 23 to 26 will fulfill this proposal requirement. No extra narrative is required.

In addition, each local school district must provide documentation, which demonstrates teacher leader understanding of and commitment to the project requirements.

Local school districts identified for school improvement in the area of mathematics will be given priority. This information is also included on the necessary forms on page 26.

### **Local Project Evaluation and Accountability** (20 points)

The three critical elements for MSP project evaluation are teacher content knowledge, student achievement in mathematics, and an evaluation plan that provides valid results. Evaluation for South Dakota Counts Round III will have four major components.

First, an External Evaluator will be secured through SDDOE to conduct state level project evaluation.

Second, CAMSE at BHSU the IHE Partner will:

- Coordinate and manage the internal evaluation and data collection tools;
- Conduct new teacher leader content knowledge evaluation;
- Conduct new teacher leader Teacher Beliefs and Attitudes evaluation; and
- Conduct continuing content knowledge evaluation.

Third, Local Project will:

- Develop any local evaluation tools necessary evaluation local project efforts;
- Assist in the delivery of data collection tools;
- Collect and submit any necessary external data elements;
- Provide a list of students for each teacher leader in the project to the state and/or external evaluator; and
- Complete the Annual Performance Report.

Described below are the components of the Annual Performance Report

- Description of MSP Partners
- Roles and Responsibilities of Partners
- Characteristics of MSP Participants
- Professional Development Models
- Program Evaluation Design – the best designs for evaluation are experimental or quasi-experimental designs that can yield scientifically valid results.
- Evaluation Findings and Evidence of Outcomes
- Data on teacher and student learning - gains in teacher content knowledge and student achievement

Fourth, SDDOE will:

- Aggregate & coordinate state level data collection for D-STEP data

- Provide technical assistance for local and state evaluation elements for each funded project;
- Facilitate the coordination of the external evaluation ; and
- Collect and store the local project schedules and documentation of time spent on project work.

Complete the Evaluation Plan Form found on page 29 of this RFP addressing all of the items that the **local projects** are responsible for completing. Give careful attention to explaining how you will evaluate the effectiveness of the support provided to teacher leaders by math specialist.

For more information on project evaluation and federal requirements, consult *U. S. Department of Education Mathematics and Science Partnership Program Annual Performance Report Online System User's Guide* available on the DOE Title II part B page: <http://doe.sd.gov/octa/title/IIpartb/index.asp>

### **Budget** (10 points)

Applicants need to include budgets for all three years of the grant. Partner districts **can not** be added in consecutive years of the grant and once committed in the first year should expect to be partnered for the full three years of the grant.

Proposals should include complete dollar amounts for all local partnerships/participants as budgets **will not** increase from the original projections submitted in this RFP by the LEA. Requested costs need to be consistent with local policies.

Budgets will include the following items:

The below table is a reference, please complete the excel document (budget) and submit with the narrative.

ESA/School District Name: \_\_\_\_\_

fill in the shaded fields

Budget Category	Description	Calc	Total
<b>Salaries &amp; Stipends</b>			
FTE for Elementary Math Specialist (Director)	New Teacher Leaders & Continuing Teacher Leaders: <i>Enter the actual number of each type teacher here:</i>	<b>Total NTLs :</b>	<b>Total CTLs :</b>
	<b>Total Number of Teacher FTE: (# NTLs x 1) + (# CTLs x .5)</b> <i>* New Teacher Leader=1; Continuing Teacher Leader=0.5</i>		
	Use this table to determine FTE: <i>20-25 teacher leaders* = 1 FTE (Full Time)</i> <i>15-19 teacher leaders * = .75 FTE (3/4 Time)</i> <i>10-14 teacher leaders * = .50 FTE (1/2 Time)</i> <i>Note: Maximum 1FTE per ESA/District for this proposal</i>		
Salary-Math Specialist	Enter annual salary & calculate amount: <i>annual x FTE</i>		
	Enter the projected # of Math Specialist work days:		
<b>Employee Benefits</b>			
Benefits	Enter current rate & calculate amount: <i>salary x rate</i>		
<b>Purchased Services</b>			
<b>IHE Contract Partner: BHSU/CAMSE</b>			
Support	<b>Flat fee (not determined by #/type teachers)</b>	<b>\$11,000.00</b>	
Lodging	<b>NTLs: \$38/night x 5nights x #NTLs</b>		
Meals	<b>NTLs: \$26/day x 5days x #NTLs</b>		
Materials	<b>NTLs: \$100 x #NTLs</b>		
Graduate Credits <i>*rate will be awarded at actual BOR rate</i>	<b>NTLs: 4 credits @ \$50/cr* x #NTLs</b>		
	<b>CTLs: 2 credits @ \$50/cr * x #CTLs</b>		
<b>Travel</b>			
Mileage	Miles per round trip (RT) <i>Enter average number of miles round trip per type teacher:</i>	<b>NTL miles RT:</b>	<b>CTL miles RT:</b>
	<b>#NTLs x avg miles round trip x 10 visits x .20/mile</b>		
	<b>#CTLs x avg miles round trip x 3 visits x .20/mile</b>		
<b>Supplies &amp; Materials</b>			
Office Operations/Activities	<b>(#NTLs x \$50) + (#CTLs x \$25)</b> (covers: support, copies, materials/supplies, printing, postage communications, etc. )		
<b>Indirect Costs</b>			
Indirect Costs	Enter your approved SDDOE restricted indirect cost percentage rate & calculate the IC amount.		
<b>GRAND TOTAL</b>			

This RFP does not provide monies for equipment, software, or infrastructure. It does provide monies for professional development, participant incentives, management of the comprehensive professional development plan, contracted services and materials needed to deliver the comprehensive professional development plan.

SDDOE may need to adjust the amount of funds requested in the application based on total funds available to the state. SDDOE will need to consider the number of participating teachers and math specialists.

Note: Contact Cathy Bergey at CAMSE [cathy.bergey@bhsu.edu](mailto:cathy.bergey@bhsu.edu) for an automated spreadsheet.

### **Required Application Forms**

- Grant Application Cover Page
- Local School District Intent to Participate Signature Form
- Elementary School Participation Form
- Local School District Description of Support
- New Teacher Leader Partner Signature Form
- Institute of Higher Education Partnership Form
- Action Plan
- Non-public School Participation Form
- Budget
- Statement of Assurances

**Do not include the above pages in your application submission.**

# **REQUIRED APPLICATION FORMS**

## Mathematics and Science Partnership Grant Application Cover Sheet

Name of Lead Agency or LEA:	
Mailing Address:	
Fiscal Agent for Project:	Tax Identification Number of Fiscal Agent:
<b>Lead Agency Representative:</b>	
Title:	
Phone:	Fax:
Email address:	
<b>Project Director:</b>	
Title:	
Phone:	Fax:
Email address:	
<b>Math Specialist (if different from project director):</b>	
Title:	
Phone:	Fax:
Email address:	

Authorized Representative Signature: I hereby certify that all data in this application are true and correct. The document has been duly authorized by the governing body of the applicant. The applicant will comply with the attached assurances if assistance is rewarded.

Authorized Representative's Printed Name	Authorized Representative's Signature	Date
--	---------------------------------------	------

Funding Request Calculation		List name of participating school districts with number of elementary buildings in project. Indicate (N) New or (C) for
Grant Funds Requested		
In-Kind Matching Contributions (opt)		
Grand Total		
Number of public school participating teachers New Continuing		
Number of non-public school teachers participating New Continuing		
Number of Public School Principals Participating New Continuing		
Number of Non-Public School Principals Participating New Continuing		
Number of Districts Participating New Continuing		
Number of Elementary Buildings Participating New Continuing		
Types of Partners:		
Please check all that apply to this application		
<b>Required</b>		
<input type="checkbox"/> High-need South Dakota School District		
<input type="checkbox"/> Educational Service Agency, Cooperative, or School District with a student population of 10,000 or greater		
<b>Optional</b>		
<input type="checkbox"/> Additional high-need South Dakota School Districts		
<input type="checkbox"/> Additional South Dakota School Districts that are not high-need		
<input type="checkbox"/> Other Educational Service Agency or Cooperative		

**Mathematics and Science Partnership Local School District Intent to Participate Signature Form**

The \_\_\_\_\_ School District agrees to participate in the SD MSP program as submitted by (insert primary grant applicant) and by agreeing to participate, it is understood that the school district will meet the following conditions over the life of the grant (**3 yrs**).

The participating school district will:

1. Identify at least one math teacher leader for each participating elementary building.
2. Describe how the district will provide support to all staff participating in the project. (complete form)
3. Create and sustain a partnership with the grant awardee.
4. Provide information and data to the grant awardee, external evaluator or state entity upon request for purposes of evaluating, documenting implementation of the grant, and reporting.
5. Assure good faith commitment and support of the administration and the school board in the development and implementation of proposed activities.

To the best of my knowledge and belief, all information submitted on behalf of \_\_\_\_\_ School District in this application is true and correct. We are local school district applicants in the proposed project and understand the role for our entity in this project. In agreeing to be a participant in this grant, the proper district procedures and policies have been followed. We will comply with the statement of assurances and project guidelines if the grant is awarded.

Typed Name of Authorized Representative	Title	Date Signed
Signature of Authorized Representative	Representing	Telephone Number
E-mail Address		

**Mathematics and Science Partnership Elementary School Participation Form**  
 (Complete one for each elementary school in the project)

- Districts must provide a list of proposed staff interested in participating during the next three years.
- Identify a minimum of one Math Teacher Leader.
- Identify K-6, Special Education, and Title I participants and the year they intend to start.
- Indicate the number of credits each participant has in math beyond those required for a bachelor's degree.
- If application is funded, staff will attend appropriate professional development.

\*\* Note: SDDOE reserves the right to limit participants and buildings.

<b>District Name and Building Name:</b>
<b>Total number of staff providing math instruction in elementary building:</b>

**New Participants**

Staff Name	Staff Assignment	Year 1	Year 2	Year 3	# of math credits	Staff Signature By signing this paper you agree to the terms in the participant form
1. <b>Math Teacher Leader(s)</b>						
2.						
3.						

**Continuing Participants**

Staff Name	Staff Assignment	Year 4	Year 5	Year 6	# of math credits	Staff Signature
1. <b>Math Teacher Leader(s)</b>						
2.						
3.						

**Mathematics and Science Partnership Local School District Description of Support Form**

The \_\_\_\_\_ School District will support **new** teacher leaders in the following manner: (Describe how the district will provide support to new staff participating in the project.)

The \_\_\_\_\_ School District will support **continuing** teacher leaders in the following manner: (Describe how the district will provide support to new staff participating in the project.)

Typed Name of Authorized Representative	Title	Date Signed
Signature of Authorized Representative	Representing	Telephone Number
E-mail Address		

## Mathematics and Science Partnership New Teacher Leader Participate Signature Form

(Complete one for each new teacher leader)

I \_\_\_\_\_ understand and agree to participate in the SD MSP program as submitted by (insert primary grant applicant) and by agreeing to participate, it is understood I will meet the following conditions during the next **3 years** of the grant.

The new participating teacher leader will:

1. Attend the Summer Institutes (5 days each summer);
2. Attend SD Counts training provided by Math Specialists;
3. Provide training for teachers in their local district; and
4. Create a demonstration classroom.

Typed Name of New Teacher Leader	Signature	Date Signed
Email address		

Add rows as needed for additional leaders

(copy this form as needed)

**Mathematics and Science Partnership Institute of Higher Education Partnership form**

The **Black Hills State University Center for the Advancement of Mathematics and Science Education (CAMSE AT BHSU)** agrees to provide the following support in this partnership:

Identify what support the IHE will provide during the course of the grant (3 years); such as: faculty to plan, present and evaluate professional development, how teachers will be supported during the school year, etc. Include a vita for faculty that is expected to be involved in the project.

Typed Name of Authorized Representative	Title	Date Signed
Signature of Authorized Representative	Representing	Telephone Number
E-mail Address		

**Mathematics and Science Partnership Action Plan Form**  
(duplicate as needed)

Activity	Person (s) Responsible for implementation of activity	Timeline (Date)	Mathematics Concept	Materials needed to support activity	Baseline data

**Mathematics and Science Partnership Evaluation Plan**  
(duplicate as needed)

Activity	Indicator of success	Baseline data	Benchmark	Method of evaluation	Evaluation Instrument	Evaluation Timeline	Person Responsible

Return to:  
 Math & Science Partnership  
 700 Governors Drive  
 Pierre SD 57501

## Mathematics and Science Partnership Non-public School Participation Form

Must be completed by all participating public schools with state accredited private schools in their district.

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Public School District Participant

Non-public School within the District

ESA Region

District Number

Federal Program	Non-public School Consulted		Non-public School Participating		Comments
	Yes	No	Yes	No	
Title II, Part B—South Dakota Mathematics and Science Partnerships Program					if Yes, List names of Participating Teachers

This is to certify that a consultation occurred between a representative of _____ ( <i>Public School District Name</i> ) and _____ ( <i>State Accredited Non-public School District Name</i> ).			Date of Consultation
Typed Name of <i>Public</i> School Representative	Title	Telephone Number	
Signature of <i>Public</i> School Representative	Email	Date Signed	
Typed Name of State Accredited <i>Non-public</i> School Representative	Title	Telephone Number	
Signature of State Accredited <i>Non-public</i> School Representative	Email	Date Signed	

# MATHEMATICS AND SCIENCE PARTNERSHIP PROJECT BUDGET

Requested costs need to be consistent with local policies.

BUDGET ITEM/ Description & costs/unit for each item being requested	GRANT FUNDS REQUESTED (GFR) Year 1: July 1, 2012 – June 30, 2013	GRANT FUNDS REQUESTED (GFR) Year 2: July 1, 2013 – June 30, 2014	GRANT FUNDS REQUESTED (GFR) Year 3: July 1, 2014 – June 30, 2015
<b>100. SALARIES</b>			
<b>Math Specialist (Director) Salary</b> (FTE: from table below) x annual salary: Number of Teachers= (#NTLs x 1) + (#CTLs x .5) Maximum of 1 FTE per ESA/District based on: 20-25 teacher leaders = 1.0 FTE (Full Time) 15-19 teacher leaders = .75 FTE (3/4 Time) 10-14 teacher leaders = .50 FTE (1/2 Time) <div style="text-align: right;">TOTAL</div>			
<b>200. EMPLOYEE BENEFITS</b>			
<b>Total of all benefits</b> Include rate and list of benefits <span style="float: right;">TOTAL</span>			
<b>300. PURCHASED SERVICES</b>			
<b>IHE Partner Contract : BHSU/CAMSE</b> CAMSE Support @ \$11,000/yr NTLs: lodging @\$38 x 5nights meals @\$26 x 5days materials @\$100 each 4 graduate credits @\$50/cr/yr CTLs: 2 graduate credits @ \$50/cr/yr <i>Note: graduate credit rate not to exceed BOR                      approved rater per year, TBD in April.</i> <div style="text-align: right;">TOTAL</div>			
<b>330. Travel</b>			
<b>Travel Expense and Mileage</b> #NTLs x avg miles round trip x 10 visits x .20/mile + #CTLs x avg miles round trip x 3 visits x .20/mile <div style="text-align: right;">TOTAL</div>			
<b>400. SUPPLIES AND MATERIALS</b>			
<b>Office Operations/Activities</b> (#NTLs + #CTLs) @\$50 per teacher <span style="float: right;">TOTAL</span>			
<b>Subtotal</b>			
*Indirect Costs			
<b>Grand Total</b>			

Budget will be adjusted yearly to reflect actual number of participants and actual indirect costs on projected totals.

Funding is dependent each year on continued funding of the Federal MSP project.

SDDOE reserves the right to limit numbers of participants if necessary.

**\*Indirect Cost Information (To be completed by Your Business Office):**

If you are requesting to budget for restricted indirect costs, please answer the following questions:

- (1) Are you a South Dakota Public School District? \_\_\_\_\_ (yes, no) If yes, use your state approves restricted indirect cost rate. If no, go to number two.
- (2) Do you have a Restricted Indirect Cost Rate Agreement approved by an agency of the state of federal government? \_\_\_\_ (yes, no) if no, you may not claim indirect costs, If yes, go to number three.
- (3) Period Covered by the Restricted Indirect Cost Rate Agreement: From: \_\_\_\_\_ To: \_\_\_\_\_ (mm/dd/yyyy)  
 Approving agency (please specify): \_\_\_\_\_

**Please attach a copy of your approved restricted indirect cost rate agreement**

## STATEMENT OF ASSURANCES

### GENERAL ASSURANCES:

The local education agency (LEA) hereby assures the South Dakota Department of Education that:

1. Each program will be administered in accordance with all applicable statutes, regulations, program plans, and applications.
2. The control of funds provided under each program and title to property acquired with program funds will be in a public agency or in a nonprofit private agency, institution, organization, or Indian tribe, if the law authorizing the program provides for assistance to those entities.
3. The public agency, nonprofit private agency, institution, or organization, or Indian tribe will administer the funds and property to the extent required by the authorizing statutes.
4. The applicant will adopt and use proper methods of administering each such program, including —
  - the enforcement of any obligations imposed by law on agencies, institutions, organizations, and other recipients responsible for carrying out each program; and
  - the correction of deficiencies in program operations that are identified through audits, monitoring, or evaluation.
5. The applicant will cooperate in carrying out any evaluation of each such program conducted by or for the State educational agency, the Secretary, or other Federal officials.
6. The applicant will use such fiscal control and fund accounting procedures as will ensure proper disbursement of, and accounting for, Federal funds paid to the applicant under each such program.
7. The applicant will —
  - submit such reports to the State educational agency (which shall make the reports available to the Governor) and the Secretary as the State educational agency and Secretary may require to enable the State educational agency and the Secretary to perform their duties under each such program; and
  - maintain such records, provide such information, and afford such access to the records as the State educational agency (after consultation with the Governor) or the Secretary may reasonably require to carry out the State educational agency's or the Secretary's duties.
8. Before the application was submitted, the applicant afforded a reasonable opportunity for public comment on the application and considered such comment.
9. Funds will be used to increase the level of State, local, and other non-Federal funds that would, in the absence of federal funds, be made available, and in no case supplant such State, local, and other non-Federal funds.
10. Equitable participation of non-public schools (if any) will be provided. The applicant will consult with officials of non-public schools in a meaningful and timely manner, provide non-public participants genuine access to equitable services and equal expenditure of funds.

### PRO-CHILDREN ACT OF 1994 ASSURANCE

I hereby acknowledge that the LEA of which I am the authorized representative, has adopted the provisions of the Pro-Children Act of 1994. (The Pro-Children Act requires that smoking not be permitted in any indoor facility used routinely or regularly for the provision of "children's services" to persons under age 18, if the services are funded by specified Federal programs either directly or through State or local governments.)

### GUN FREE SCHOOLS ACT ASSURANCE

I hereby acknowledge that the LEA, of which I am the authorized representative, has adopted a Gun Free Policy that is in compliance with SDCL 13-32-4.

### CONSTITUTIONALLY PROTECTED PRAYER IN PUBLIC SCHOOLS CERTIFICATION

I hereby certify that the LEA, of which I am the authorized representative, has no policy that prevents, or otherwise denies participation in, constitutionally protected prayer in its public elementary and secondary schools.

As a condition of receiving federal funds under terms of the Elementary and Secondary Education Act ("ESEA") of 1965, as amended by Section 9524 of the No Child Left Behind Act of 2001, this certification is required by October 1st of each year. The South Dakota Department of Education in its role as the official public education state agency in South Dakota will annually send to the U.S. Secretary of Education a list of those LEAs in South Dakota that have not submitted the required certification or against which complaints have been made that the LEA is not in compliance with this provision.

### CHILDREN'S INTERNET PROTECTION ACT (CIPA)

The local education agency certifies that it will comply with the Child Internet Protection Act.

### LOBBYING

As required by Section 1352, Title 31 of the U.S. Code, and implemented at 34 CFR Part 82, for persons entering into a grant or cooperative agreement over \$100,000, as defined at 34 CFR Part 82, Sections 82.105 and 82.110, the applicant certifies that:

(a) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the making of any Federal grant, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal grant or cooperative agreement;

(b) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal grant or cooperative agreement, the undersigned shall complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions;

(c) The undersigned shall require that the language of this certification be included in the award documents for all sub awards at all tiers (including sub grants, contracts under grants and cooperative agreements, and subcontracts) and that all sub recipients shall certify and disclose accordingly.

### **DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS**

As required by Executive Order 12549, Debarment and Suspension, and implemented at 34 CFR Part 85, for prospective participants in primary covered transactions, as defined at 34 CFR Part 85, Sections 85.105 and 85.110--

A. The applicant certifies that it and its principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) Have not within a three-year period preceding this application been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (2)(b) of this certification; and
- (d) Have not within a three-year period preceding this application had one or more public transaction (Federal, State, or local) terminated for cause or default; and

B. Where the applicant is unable to certify to any of the statements in this certification, he or she shall attach an explanation to this application.

### **DRUG-FREE WORKPLACE**

As required by the Drug-Free Workplace Act of 1988, and implemented at 34 CFR Part 85, Subpart F, for grantees, as defined at 34 CFR Part 85, Sections 85.605 and 85.610 -

A. The applicant certifies that it will or will continue to provide a drug-free workplace by:

- (a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
- (b) Establishing an on-going drug-free awareness program to inform employees about:
  - (1) The dangers of drug abuse in the workplace;
  - (2) The grantee's policy of maintaining a drug-free workplace;
  - (3) Any available drug counseling, rehabilitation, and employee assistance programs; and
  - (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
- (c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);
- (d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:
  - (1) Abide by the terms of the statement; and
  - (2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;
- (e) Notifying the agency, in writing, within 10 calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to: Director, Grants Policy and Oversight Staff, U.S. Department of Education, 400 Maryland Avenue, S.W. (Room 3652, GSA Regional Office Building No. 3), Washington, DC 20202-4248. Notice shall include the identification number(s) of each affected grant;
- (f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:
  - (1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
  - (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
- (g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

### **ASSURANCES - NON-CONSTRUCTION PROGRAMS**

**Note:** Certain of these assurances may not be applicable to your project or program.

As the duly authorized representative of the applicant I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management, and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States, and if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. 4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. 1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. 6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as

amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) 523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. 290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. 3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

7. Will comply, or has already complied, with the requirements of Titles II and III of the uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply, as applicable, with the provisions of the Hatch Act (5 U.S.C. 1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.
9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. 276a-7), the Copeland Act (40 U.S.C. 276c and 18 U.S.C. 874) and the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-333), regarding labor standards for federally assisted construction sub agreements.
10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. 1451 et seq.); (f) conformity of Federal actions to State (Clear Air) Implementation Plans under Section 176(c) of the Clear Air Act of 1955, as amended (42 U.S.C. 7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended, (P.L. 93-523); and (h) protection of endangered species under the Endangered Species Act of 1973, as amended, (P.L. 93-205).
12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. 1721 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. 469a-1 et seq.).
14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. 2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4801 et seq.) which prohibits the use of lead- based paint in construction or rehabilitation of residence structures.

**Local Education Agency (LEA)**

**ASSURANCES AND CERTIFICATION STATEMENT:** The above named applicant assures the South Dakota Department of Education that these projects will be administered in compliance with the assurances contained in this application, with state and federal laws and regulations applicable to the use of these funds, that the information contained in this application is accurate and complete.

\_\_\_\_\_  
Name of LEA Authorized Representative  
(Type or Print)

X

\_\_\_\_\_  
**Original** Signature of LEA Authorized Representative

\_\_\_\_\_  
Date

## **III. SUPPORTING DOCUMENTS**

## COGNITIVELY GUIDED INSTRUCTION (CGI) PROGRAM OVERVIEW

Cognitively Guided Instruction (CGI) is a professional development program for K-6 teachers that show explicitly what kind of knowledge students bring to the mathematics learning process and how they connect that knowledge with formal concepts and operations. CGI is guided by two major theses. The first thesis is that children bring an intuitive knowledge of mathematics to school with them and that this knowledge should serve as the basis for developing the formal mathematics instruction in primary school. The second thesis is that mathematics instruction should be based on the relationship between skills and problem solving.

CGI provides a basis for identifying what is difficult and what is easy for students to comprehend in their study of mathematics. The emphasis is on what children can do, rather than what they cannot do, which leads to a very different approach regarding wrong answers. With the CGI approach, teachers work backward from the error to identify the valid concepts that students do understand. The program aims to improve children's mathematical skills by changing teachers' beliefs regarding how children learn and ultimately their teaching practices.

Cognitively Guided Instruction is a way for teachers to understand children's intuitive mathematical thinking and use that knowledge to help children learn mathematics with understanding. This research-based model of children's thinking is designed to help teachers construct conceptual maps of the development of children's mathematical thinking in specific content domains. CGI will help teachers in facilitating any mathematics curriculum or materials they are currently using.

### Cognitively Guided Instruction Classroom (CGI)

<b>Predominant Addition/Subtraction Method and Related Conceptual Structure</b>	<b>Instructional Strategies</b>	<b>Classroom Supports</b>
<p>Methods that begin with one number and move up and down the sequence by tens and ones [Sequence tens-ones]</p> <p>Decompose-tens-and-ones methods - tens and ones are added or subtracted separately from each other [Separate tens-ones]</p>	<ul style="list-style-type: none"> <li>- Word problems provide basis for almost all instruction</li> <li>- methods develop as natural extensions of methods to solve problems using single units</li> <li>- teacher as facilitator</li> <li>- encourages child to collections of tens and ones</li> <li>- place value concepts emerge through use of base ten materials</li> <li>- no prevalent strategy in use at one time</li> <li>- children learn from interacting with each other</li> <li>- children shift among representations as they solve problems or discuss solutions</li> </ul>	<p>Discussion</p> <ul style="list-style-type: none"> <li>- strategies discussed serve as model for others</li> <li>- provides opportunity for children to reflect</li> </ul> <p>- children use counters to solve problems by modeling the problems</p> <ul style="list-style-type: none"> <li>- counters</li> <li>- tens blocks which are eventually seen as convenient collections of unit counters</li> </ul> <p>- in time depend less on counters</p>

## **CGI Training Components**

Cognitively Guided Instruction (CGI) is a professional development program for teachers of kindergarten through the sixth grade. CGI helps teachers understand their students' mathematical thinking which correlates to vast improvements in students' mathematical understanding and problem solving skills. It has been proven effective for boys and girls of diverse social class, racial, ethnic, and language proficiency backgrounds. At this time, all four of the following CGI workshops are held as week-long institutes for a total of 30 hours of training time in SD Counts.

### **Basic CGI Training**

This workshop is designed for teachers of kindergarten through third grade children and those who work with such teachers. No prior experience with CGI is necessary.

### **Advanced CGI Institute**

This Institute is designed for people who want to take a deeper look at CGI to improve how they use CGI with children and/or to support other teachers in learning about CGI. Emphasis will be placed on children's understanding of base ten strategies that children use to solve problems with large numbers and how what we know about such understanding influences our mathematics instruction. Information on how to support teachers' learning will be integrated into our deeper look at children's thinking.

Information on how to support teachers' learning will be integrated into our deeper look at children's thinking.

### **CGI Algebra**

This Institute helps elementary school teachers integrate the major principles of algebra into their arithmetic instruction. This program is based on the premise that children throughout the elementary grades are capable of learning powerful unifying ideas of mathematics that are the foundation of both arithmetic and algebra. This Institute will focus on how learning and articulating these ideas enhances children's understanding of arithmetic and provides children with a solid basis for extending their knowledge of arithmetic to learn algebra. This Institute is designed for teachers of children in grades 1 - 6 and those who work with such teachers.

## SD Counts Professional Development Round III Schedule

<b>New Teacher Leaders</b>				<b>Continuing Teacher Leaders</b>	
<b><u>Summer Institutes</u></b> (taught by higher ed. staff)		<b><u>Project-based</u></b> (taught by Math Specialists)		<b><u>Project-based</u></b> (prepared by higher ed. staff) (taught by Math Specialists)	
Project Year One Foundations & Issues of Mathematics Education	July 9-13, 2012	<ul style="list-style-type: none"> <li>• Understanding Student Thinking in Numbers &amp; Operations</li> <li>• 10 Classroom visits</li> <li>• Cohort meetings</li> </ul>	School year 2012-2013	Assessment for School Mathematics Focus: Numbers & Operations *Limited to 3 classroom visits during the school year.	June 2013
Project Year Two Algebraic Reasoning for K-12 Educators	June 10-14, 2013	<ul style="list-style-type: none"> <li>• Understanding Student Thinking in Algebra</li> <li>• 10 Classroom visits</li> <li>• Cohort meetings</li> </ul>	School year 2013-2014	History of Mathematics Focus: Rational Numbers *Limited to 3 classroom visits during the school year.	June 2014
Project Year Three Geometry & Measurement for K-12 Educators	June 9-13, 2014	<ul style="list-style-type: none"> <li>• Understanding Student Thinking in Geometry &amp; Measurement</li> <li>• 10 Classroom visits</li> <li>• Cohort meetings</li> </ul>	School year 2014-2015	Data Analysis & Probability for K-12 Educators *Limited to 3 classroom visits during the school year.	June 2015