## Project Goals

The **Strong Start Math** project is a collaborative partnership project of the University of Wisconsin-Milwaukee (UWM) and the Milwaukee Public Schools (MPS).

The grant supports school-based teams in strengthening the mathematical foundation of students in Kindergarten (K5) to Grade 3. The goals are to:

1. Deepen teacher knowledge of mathematics concepts, connections, and progressions for teaching the Wisconsin Standards for Mathematics;
2. Strengthen teacher use of high-leverage mathematics teaching practices and research on children's learning of mathematics in classroom instruction; and
3. Build a strong mathematical foundation among young learners by developing understanding and fluency along mathematics learning trajectories.

### Project Website

[http://uwm.edu/strongstart](http://uwm.edu/strongstart)

## Funding

The “Starting Students Strong in Mathematics: Strengthening Teacher Mathematical Knowledge and Instruction in Grades K-3” project is funded by the U.S. Department of Education (ESEA Title II, Part B) Mathematics and Science Partnerships program; administered by the Wisconsin Department of Public Instruction (DPI); and was awarded to the University of Wisconsin-Milwaukee.


## Project Schedule

### Year 1: Early Number, Operations, & Algebraic Reasoning

- **Summer Institute:** June 20–July 1, 2016 (8:00 am–4:00 pm)
- **School Year 2016-2017:** Thursdays, 4:30–7:30 pm

### Year 2: Number and Operations in Base Ten

- **Summer Institute:** June 19–30, 2017 (8:00 am–4:00 pm)
- **School Year 2017-2018:** Thursdays, 4:30–7:30 pm

### Year 3: Measurement, Geometry, and Fraction Concepts

- **Summer Institute:** June 18–29, 2018 (8:00 am–4:00 pm)

[Note: No school year sessions, as the grant ends in the summer.]

## Key Personnel

<table>
<thead>
<tr>
<th>Name</th>
<th>Email</th>
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<tbody>
<tr>
<td>Dr. DeAnn Huinker, PI, UWM</td>
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Center for Mathematics and Science Education Research (CMSER)

**University of Wisconsin-Milwaukee**

**Office:** 2400 E. Hartford Ave  
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Milwaukee, WI 53211-3159

**U.S. Mail:** PO Box 413, UWM-CMSER  
Milwaukee, WI 53201-0413

**Website:** [http://www.uwm.edu/cmser](http://www.uwm.edu/cmser)

**Fax:** 414-229-4855

**Phone:** 414-229-6646
Course Information

The Strong Start Project sessions will be spread throughout the school year. Given that the university offers classes on a semester basis, you will enroll for an official UWM Spring 2018 course related to your participation in this project. We will provide course registration information later this fall.

Credits: 3 Graduate credits
Instructors:
- Melissa Hedges, mhedges@uwm.edu, 414-229-6646
- Michelle Douglas-Meyer, douglams@milwaukee.k12.wi.us, 414-704-8952
- Nicole Hawkins, hawkin49@uwm.edu, 414-229-6646
- Dr. Gabriella Pinter, gapinter@uwm.edu, 414-229-6646
- Dr. DeAnn Huinker, huinker@uwm.edu, 414-229-6646

Dates: Thursdays Sept. 8, Sept. 22, Oct. 6, Oct. 20, Nov. 10, Jan. 12, Jan. 26, Feb. 23, March 2, March 23, Snow date: March 30, just in case, please save this date on your calendar.

Time: 4:30 p.m. – 7:30 p.m.
Location: Room 206-208, Central Services Building, 5225 W. Vliet Street, Milwaukee, WI

Course Objectives

Course Catalog Description: Examination of instructional trajectories for algebra and analysis of teaching strategies for developing and assessing students' algebraic reasoning. Prereq: jr st; teaching experience.

Objectives:

- Deepen understanding of the Common Core State Standards mathematics standards and content progressions for the Operations and Algebraic Thinking (OA) domain in grades K-5.
- Develop a working knowledge of developmental learning trajectories in mathematics to inform classroom instruction and guide children’s learning.
- Strengthen understanding of big ideas in the operations and algebraic thinking domain (e.g., equality, operation meanings and relationships, properties of the operations, problem situation structures).
- Become familiar with research on children’s development of number and operations, including development of numeric reasoning strategies.
- Formulate classroom plans to use research-based, high-leverage teaching practices to foster mathematical practices and understanding among students related to algebraic thinking (e.g., equality/equivalence, composing/decomposing, representational fluency, contextualizing/decontextualizing, numeric flexibility).

Required Texts and Readings


- Counting and Cardinality, Operations and Algebraic Thinking (2011)
- Number and Operations in Base Ten (2015)
- Number and operations—Fractions (2013)
- Geometric Measurement (2012)
- Geometry (2014)
- Categorical and Measurement Data (2011)


Other required readings will be distributed in class, through email, or assigned as website links.

### Course Policies

#### Learning Environment and Cellular or Digital Devices
Please disengage or silence all cellular phones and other electronic devices to protect and support the learning environment of all participants. Store such devices out-of-sight; not sitting on tables or desks. Restrict yourself from checking all personal or work email and other websites during class. Give yourself an electronic vacation for the few hours in which we meet face-to-face!!

You may check voice and email messages or make calls during scheduled breaks. If you need to check on a family member for health or daycare or emergency situations while class is in session, we ask that you quietly go out into the hallway to make the call or send the message.

Otherwise use of electronic devices during a class session, including during whole or small group work or individual work, will result in a loss or reduction of participation points and/or project stipends.

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**Investment of Time**: Study leading to one semester credit represents an investment of time by the average student of not fewer than 48 hours per credit earned. As a three-credit course, the expected time commitment is approximately 144 hours (3 credits x 48 hours per credit earned). Students should spend approximately 50% of the time participating in class sessions; 20% of the time completing assigned readings, studying course content, and completing written reflections and homework tasks; 30% of the time completing course projects.

**Preparation of Assignments**: Assignments are to be word processed unless otherwise stated in class or the syllabus. Present each assignment in a neat, organized, and clear manner. Keep a copy of all submitted assignments in case assignments are misplaced or clarification is needed.

**Electronic Submission of Assignments**: You are expected to provide some of your assignments in electronic format. Acceptable file types include MS Word, Google Doc, Pages, PowerPoint, Keynote, PDF, or JPEG, as appropriate to the assignment. *Always name electronic files with your last name* followed by a very short description of the work to prevent the file being overwritten, deleted, or misplaced. Also make sure YOUR NAME appears on the top of the first page within the document. It is also best to not include any periods other than before a file format extension. Example: hedges-project-july8.docx. Mislabeled files will result in late assignment penalties.

**Email**: It is your responsibility to check your UWM email regularly or forward your UWM email to a preferred personal or work email location. UWM will automatically send all related university correspondence to your UWM email, as it is the address that automatically links to several UWM functions. The *Strong Start Math* project will most often use your designated work or home email, please keep the project informed of any changes to email.

**Penalty for Submission of Late Assignments**: All assignments are due by midnight on the date specified. You may request an extension by contacting the instructor prior to the due date. Otherwise late assignments are penalized by one letter grade for each day it is late. No extra credit assignments or rewrites are granted.

**Final Assessment**: University policy requires all courses to have a final assessment conducted during the final examination period as scheduled for the particular semester. No separate examination period is established for the summer session; the final assessment requirement will be conducted on the last scheduled day of the course. Specific details will be discussed in class.
1. Attendance

Attendance is vital to achieving the goals of this course. You are expected to attend all class sessions and are expected to arrive on time and stay the entire class session.

**Excused absences:** Absences will only be excused through electronic written communication, preferably in advance of the absence by email, and given to the designated course instructor. Verbal conversations will not be recorded or considered. You must put into electronic writing the rationale for the absence. Excused absences include a medical issue under a doctor’s care for oneself or an immediate family member, a death in the immediate family, religious observance, or a contractual school district meeting. Include name, date of absence, and rationale, along with any written verification.

**Unexcused absences:** Each unexcused absence or accumulation of tardiness/early departures results in grade deduction of 10% per absence. For example, if you miss one day of class, the highest grade you may earn is an A-. Three instances of tardiness/early departure will be considered equivalent to one absence; this includes returning promptly from breaks.

**Make-up work for all absences:** You are required to make-up all work related to excused or unexcused absences and complete a make-up assignment. Take the responsibility upon yourself and do not ask the instructors what you need to do, but rather:

1. “Find a Friend” to gather all handouts, to learn about any announcements, and to discuss class activities.
2. Complete all readings and activities on your own related to your absence.
3. Prepare written summaries and reflections on all missed readings and activities with sufficient detail to document or prove to the instructors you have studied and learned about the missed materials.
4. Find an article on your own about teaching mathematics, read it, prepare a brief summary of the article, and indicate how you might use the ideas in your own teaching.
5. Turn the packet of absence-documented work into the designated course instructor in an envelope or file folder or as an email clearly marked with your name, date/time of absence. This is due no later than one week after the absence to avoid penalties for missed work and learning.

2. Participation in Class Sessions

You are expected to participate as an active class member in whole group discussions, small group work, and individual work in a professional manner that contributes to the engagement and learning of all class members toward course goals. Restrain yourself and your colleagues from side bar conversations as active listening and reflection are important aspects to your own learning in this course. This includes not engaging the instructors in a side bar conversation.

3. In-Class Tasks

During each class session, you will be asked to engage in a number of specific tasks. The purpose of the tasks is to extend and deepen your engagement with course content. The tasks will include, but are not limited to, math tasks, video reflections, group charting, pair/group reporting. Some in-class tasks (e.g., your work, a reflection, a synthesis) will be submitted or recorded in your notebook, as requested by the instructors, for review.

4. Individual Strong Start Math Implementation Goal (continued work from Summer Institute 2016).

The purpose of the Individual Goal for the Summer 2016 Institute was to identify a place to begin implementing your learning in the Strong Start program into your professional practice. Throughout this year, you will refine your goal, monitor your progress, and reflect on your growth. Prompts and specific tasks to structure progress and reflection will be discussed and assigned in class for completion between class sessions.
5. **Assignment: Number Talk Planning and Implementation Due Thursday, January 26, 2017**

   The purpose of this assignment is to plan, implement, and reflect on a Number Talk. The planning will focus on differentiating and developing a particular element of number sense with your students. Implementing the Number Talk will also provide you with the opportunity to record students’ thinking and examine number strategies. Your reflection will tie what you learned about your students within the Number Talk to what you believe they understand mathematically and where your instruction needs to focus next (e.g. trajectories, levels of reasoning, efficiency of strategy used).

6. **Strong Start Journal: Sharing Your Math Teaching Stories**
   **Reflections are due the next class session from when they are assigned.**

   The purpose of this assignment is to capture reflective snapshots of what is happening in your professional practice inside of your classroom. These entries are ideally completed within hours of the teaching event so that they are real-time and ongoing. You will be given specific teaching events and prompts to reflect on, but feel free to go back and add more to a reflection as it develops in your mind over the days following.

7. **Project: CCSSM and Learning Trajectory Assessment and Application Project Revision**
   **Due Thursday, December 8, 2016**

   The purpose of this assignment is to revise and refine your CCSSM and Learning Trajectory Assessment that you developed during the Summer 2016 Institute. All aspects of the original assignment submitted during Summer 2016 will be reviewed and revised. This includes, though is not limited to, Standard Explanation and Examples, Core Assessment, Successful Student Assessment, and Struggling Student Assessment. The completed project will include student profiles for successful and struggling students and a more developed Instructional Tasks section.

8. **Project: Strong Start Teaching Portfolio Due March 23, 2017**

   The portfolio will be used to capture and document, as well as share, the impact of the Strong Start Math Project on the teaching and learning of mathematics in your classroom. Each portfolio will consist of a cover letter, four artifacts, 3-5 pieces of student work for each artifact, and a summative reflection. You will present your portfolio to a small group of your colleagues on March 23, 2017. Specific details regarding this assignment will be distributed during class.

9. **Reflective Nugget**

   You are expected to prepare a reflective nugget or story about your learning this summer in the *Strong Start Math* project. More details will be discussed in class.

10. **Project Evaluation**

    As required by the U.S. Department of Education, this project must participate in a rigorous evaluation to include assessments of teacher learning, student learning, and classroom implementation. As part of your commitment to the *Strong Start Math* project you will complete required evaluation surveys and assessments and submit course/project related artifacts (e.g., documents, student work samples, reflections).
Course Grading Procedures

<table>
<thead>
<tr>
<th>Course Requirement</th>
<th>Percent of Grade</th>
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<tbody>
<tr>
<td>1. Attendance</td>
<td>10% per unexcused absence</td>
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<tr>
<td>2. Participation in Class Sessions</td>
<td>10%</td>
</tr>
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<td>3. In-Class Tasks</td>
<td>10%</td>
</tr>
<tr>
<td>4. Assignment: Number Talk Planning and Implementation</td>
<td>5%</td>
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<td>5. Strong Start Journal: Sharing Your Teaching Stories</td>
<td>15%</td>
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<tr>
<td>6. Individual Project: CCSSM and Learning Trajectory Assessment Revision</td>
<td>20%</td>
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<tr>
<td>7. Individual Project: Strong Start Teaching Portfolio</td>
<td>20%</td>
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<tr>
<td>8. Assignment: Individual Implementation Goal Implementation and Revision</td>
<td>10%</td>
</tr>
<tr>
<td>9. Strong Start Math Nugget or Story</td>
<td>5%</td>
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<tr>
<td>10. Project Evaluation Completion</td>
<td>5%</td>
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Grades will be assigned on the following scale:

- A 93–100%
- A– 90–92%
- B+ 87–89%
- B 83–86%
- B– 80–82%
- C+ 77–79%
- C 73–76%
- C– 70–72%
- D+ 67–69%
- D 63–66%
- D– 60–62%
- F 0–59%

Readings

The following list contains expected course readings. Additional readings will be distributed in class, through email, or assigned as website links.

Askew, M. (2014). *Big Ideas in primary mathematics (draft).*


General Policies: UWM policies regarding students with disabilities, religious observances, students called to active military duty, discriminatory conduct, academic misconduct, complaint procedures, grade appeal procedures, incompletes, and final exams can be found at:  http://www4.uwm.edu/secu/SyllabusLinks.pdf

Incompletes: It is only under very unusual and extenuating circumstances that an “incomplete” will be granted. An "I" (incomplete) is assigned by the instructor if the student is unable to finish all the requirements for the course during the original semester of enrollment. If a grade of “Incomplete” is granted, a due date will be established for the required work. On that date a grade will be submitted based on currently submitted work, regardless.

A grade of incomplete is appropriate only when the following conditions are present:

- The student has done satisfactory work in a substantial fraction of the course requirements prior to grading time and provides the instructor with evidence of potential success for the remaining work.
- Extraordinary circumstances, not related to the performance in the class, such as illness or family emergency, have prevented the student from finishing the course requirements on time.

Grant or Course Specific Policies:

Graduate or Undergraduate Status: You may not have dual tuition status within the same semester. You must have the same UWM classification, undergraduate or graduate, for all courses in which you enroll within the same semester, regardless. You may not “change” classification after you have enrolled a course. You would need to drop the course and then re-enroll under a different classification status, which may result in tuition charges for the dropped course.

Off-Campus or On-Campus Status: The grant for this project ONLY waives resident, off-campus tuition. Individuals concurrently enrolled in courses taught on-campus will need to pay segregated fees for all of their credits, including the grant course as the grant does not have funds allocated to pay segregated fees.

Residency Status: The grant for this project ONLY waives resident, off-campus tuition. It does not waive non-resident or out-of-state tuition. If you have this status, you are responsible for paying the differential in costs.

Special-Tuition Pricing Courses: If you concurrently enroll in regular UWM course and in special tuition pricing courses, such as through WSMI, you may have to pay the higher tuition rate for both/all courses.

Drop/Withdrawals: If you choose to drop this course you must follow UWM procedures. You will be responsible for paying all drop, withdrawal, and other fees incurred. You are responsible for any or all tuition costs associated with your partial attendance as grants do not remiss tuition for courses you do not complete. Consult the current Schedule of Classes for the last day to drop a course within the current semester. Obtain a Change of Registration (ADD/DROP) form and get department or instructor approval to drop the class. Appeals to drop a course after the published deadline must be approved by the Office of Advising and Academic Services who are authorized to sign for the Dean of the School of Education. If you owe fees or tuition, you will be billed directly from UWM and a hold will be placed on your records for any bills that are not paid. For procedures and fee schedules, see http://www4.uwm.edu/des/registration

Snow Days or Other Class Cancellations: Class will be cancelled if UWM has cancelled classes or the Milwaukee Public Schools has cancelled building activities.