The Mathematical Thinking for Instruction (MTI) course offers participants an opportunity to extend their content knowledge of mathematics, deepen their understanding of student thinking, and develop a research-based instructional approach for teaching mathematics.

Summer MTI Registration Schedule Posted This Month!

The tentative MTI summer course schedule was posted on the State Department of Education MTI website on Tuesday, March 15th. Registration will begin at 8:00 a.m. (7:00 a.m. PST) on Monday, April 4th.

The MTI page on the SDE website is www.sde.idaho.gov/site/math/mti.htm.

Also, mark the calendar for April 15th when the Fall MTI schedule will be posted. Registration will then open two weeks later on Monday, May 2nd.

Please pass this information along to teachers and administrators in your district that need to take the course. It is advantageous for a person to sign-up for the same class as other individuals from the same school.

Thank you!

"The work of a teacher - exhausting, complex, idiosyncratic, never twice the same - is at its heart, an intellectual and ethical enterprise. Teaching is the vocation of vocations. - William Ayres"
Addressing Misconceptions

Student difficulties in mathematics are often rooted in misconceptions about mathematics concepts and procedures. Research supports the idea of explicitly addressing these student misconceptions in the mathematics classroom as a means of correcting the misconception and building students' mathematical understanding.

The process a teacher uses to address students' misconceptions is extremely important. In the traditional mathematics classroom, teachers often address student misconceptions by explaining how the process a student used was incorrect and then demonstrating the correct process or understanding. This approach does not meaningfully address the students' prior knowledge or their misunderstanding about mathematics that led them to approach the problem in a particular way. Students often repeat the mistake after a teacher has explained how to 'correctly' get the answer. In order to meaningfully address student misconceptions, teachers must give students an opportunity to confront their misconception and go through the internal cognitive process of correcting the misunderstanding.

Examples/non-examples is a strategy teachers can use to facilitate the process of addressing misconceptions. Figure 1 is an example of two solutions for 251-49.

![Figure 1](image1)

By placing these two examples on the board and asking students, Which solution is correct and why?, the teacher places the cognitive process of correcting the misunderstanding in the hands of the students. Time should be given for students to analyze the problem and solutions. They should be allowed to communicate with peers about which is the correct solution and why. Then whole class discussion should occur with a focus on students explaining their reasoning and justifying their answer.

(Figure 2 at left) Figure 2 is another example of using examples/non-examples to correct student misconceptions, in this case around an algebraic topic. The expression $12x$ is placed on the board and then paired examples and non-examples are given to students. Students are asked to determine which expression correctly represents $12x$ and explain why.

The practice of students actively addressing misconceptions by examining examples and non-examples allows them to meaningfully build mathematical understanding. This approach can be easily integrated into the mathematics classroom on a regular basis and will allow students to take ownership of the mathematics they are learning.
MTI Leadership Conferences

The Regional Math Specialists and Developing Mathematical Thinking (DMT) personnel, with support from the State Department of Education, are hosting three separate one day conferences across the state to facilitate conversation and assist with the implementation of ideas learned during the MTI course in an effort to help district math leaders support their teachers. Please note the date for your region below.

**Regions 1/2: Coeur d'Alene, May 6th, 9:00 a.m. - 3:30 p.m.**
**Contact:** Abe Wallin, abewallin@boisestate.edu

**Regions 3/4: Meridian, April 15th, 9:00 a.m. - 3:30 p.m.**
**Contact:** Michele Carney, michelecarney@boisestate.edu

**Regions 5/6: Idaho Falls, April 29th, 9:00 a.m. - 3:30 p.m.**
**Contact:** Karin Moscon, karinmoscon@boisestate.edu

The MTI Leadership Conferences will help teachers, math coaches, administrators and district office personnel support their teachers as they implement the MTI instructional strategies and methods. The conferences will also familiarize participants with the **Common Core Standards (CCS)** and how they tie to MTI practices, including a focus on how do unit planning around the CCS that implements the MTI approach. To get more information or to sign-up for a leadership conference in your region, please contact the individuals listed above.

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**Contact Us!**

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*Mathematics is no more computation than typing is literature.* - John Allen
What’s Next?

So you have completed an MTI course and you are wondering what to do now? Where do you go from here? How can you use the information discussed in class in a meaningful way?

Here are some places to start:

1. Visit the Developing Mathematical Thinking website at: [http://dmt.boisestate.edu](http://dmt.boisestate.edu)

   The website is modified often and there could be a number of additional links on the site; information that was not available when you took the class. This is a resource that will continue to be accessible, simply use your established username and password.

2. Contact your Regional Math Specialist (RMS) and schedule a meeting. These meetings can be an individual, classroom meeting, a discussion at a staff meeting, a team-teaching experience, or a demonstration lesson. In addition, your RMS will be conducting follow up experiences for school districts and the region. If you and your colleagues are interested, contact your RMS and volunteer to host an event.
   - For Region I, contact Abe Wallin at abewallin@boisestate.edu
   - For Region II, contact Christina Tondevold at christinatondevold@boisestate.edu

3. Look at the newly adopted Common Core Standards and begin the discussions with your colleagues. Visit the CCS website at: [http://www.corestandards.org/the-standards/mathematics](http://www.corestandards.org/the-standards/mathematics)

   Although Idaho will continue to use the current standards for the next several years (will change in 2014), the new standards are the direction we are going. Curriculum mapping at this point will allow you to understand how the standards are addressed in your current textbooks and give you time to think about possible supplementation. In addition, teaching the big ideas encompassed in the Common Core Standards will support student understanding and should translate into positive results on the current ISAT exam.

4. Attend a workshop. See the sidebar at right for more information and visit the MTI Follow Up website for more information on workshops available in your region.
   [www.tinyurl.com/mtifollowup](http://www.tinyurl.com/mtifollowup)